RELATIONSHIP BETWEEN USE OF INTEREST BEARING DEBT AND FINANCIAL PERFORMANCE OF LISTED FIRMS IN KENYA

BY

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DECLARATION

I do declare that this research project is my original research work and has never been submitted in any other institution for any academic purpose.

Sign…… Date……..

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This research project has been submitted for examination purposes with my approval as a University of Nairobi supervisor.

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I do thank the Almighty God for His care and protection throughout my education and enabling me to get up to this far. I also thank my parents, family, brothers and sisters for their support also in my education. I also in a special way thank my supervisors Mr. Murage and Professor Mirie for their guidance throughout my research work which have seen it a success.

DEDICATION

I dedicate this research work to my parents, my wife and my family in recognition of their support throughout my education.

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LIST OF ABBREVIATIONS

ADF – Augmented Dickey Fuller

ANOVA – Analysis of Variance

CBK – Central Bank of Kenya

CMA – Capital Markets Authority

EBIT – Earning Before Interest and Taxes

EVA – Economic Value Added

FP – Financial Performance

IBD – Interest Bearing Debt

KCB – Kenya Commercial Bank

MM – Modigliani and Miller

NBK – National Bank of Kenya

NSE – Nairobi Securities Exchange

PLC – Public Limited Company

ROA – Return on Assets

ROE – Return on Equity

ROI – Return on Investments

SMEs – Small and Medium-Sized Enterprises

TIE – Times Interest Earned

VIF – Variance Inflation Factor

ABSTRACT

Company financial performance has emerged to be a key issue in addition to other goals firms exist to meet. This study aimed at studying the relationship between the use of interest bearing debt and financial performance of listed firms in Kenya. The researcher did this study in addition with other possible factors that can influence the financial performance of listed firms in Kenya. The other variables studied were the size of the firm, number of directors, extend of audit work and the working capital management. The research has established that use of interest bearing debt has a positive significant effect on the financial performance of listed firms in Kenya. Based on this finding, managers should not have a negative attitude towards loans as if well utilised they will increase financial performance which forms a good basis for shareholder wealth maximization. Policy makers should also base their decision making on this research finding to make debt markets more accessible as they increase financial performance of economic units which will in turn increase the status of the economy as a whole. More specifically, the government should maintain the interest rate capping and expand the control to cover all credit facilities in the country in order to enable the positive impact be felt. The r3search agrees with the policy makers that cheap loans will be more accessible and will increase the economic performance in the whole economy. It was also established that the extend of audit function as measured by the audit cost, management of working capital and the board size affect firm financial performance in a way. Whereas the audit function affects the financial performance positively, the liquidity levels and big board sizes affect the financial performance negatively. Based on these findings, it is very important that organizations recheck on the importance of their board sizes. Organizations should also try to have a good mix of expertise at the top. The research findings suggest that having a small board size will be better and supports the notion that big board sizes compromise decision making processes. Research findings also suggest that too much liquidity affects financial performance negatively. Based on this, the researcher recommends having the minimum possible liquid assets to optimise on them. Available cash can be held in an interest earning form to boost financial performance. Audit function in Kenya have been found to impact positively on the financial performance in Kenya. Based on this, corporations are encouraged to seek the services of auditors beyond the statutory requirement to boost their financial performance. These research findings forms a basis for other researches which needs to be done to establish the whys behind the negative relationships for the board size and the liquidity positions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Enterprises will always be in need of financing for their operations and it is the company management that makes the very critical decision on the source of financing for such projects(Feng, Ghosh & Sirmans, 2007).A financing decision involves consideration of both debt and equity (Muritala, 2018).Of key interest is the interest bearing debt because while interest payments raises the expenses of an entity, the use of the debt gives a company financial power to invest and therefore use of such interest bearing debt is expected to have some form of impact on the financial performance of businesses. If interest bearing debt is used to raise a return higher than its cost, then a positive impact is expected to be felt and a negative effect is expected if a return lower than the cost of the debt is achieved (Adair & Adaskou, 2014).

Numerous theories have been advanced to advise on capital mix the oldest being capital structure irrelevance theory by Modigliani and Miller (Modigliani & Miller, 1958). Other newer theories developed are like pecking order theory advocated by Myers and Majluf (1984), trade-off theory advanced by Myers (1984) and signalling and liquidity risk theory Spence (1973) among others. Whereas pecking order theory ranks internal financing before debt and ranks equity as the most inferior, signalling and liquidity risk theory looks at the perception of other players in the industry and how they interpret the company capital structure. Trade-off theory emphasises on ensuring a match between costs incurred and benefits derived from a specific source of finance and a choice is chosen if its benefits outweigh the costs. Considering debt financing, a finance manager would look at the bankruptcy costs and compare them with the savings on tax derived when the company uses debt (Kraus & Litzenberger, 1973).

Kenya has in the recent past seen some major corporations fail from glory and a closer look at the books of such companies have revealed that they have been struggling with debt. This is more serious taking in to consideration that such miseries are arising after the interest rate capping which was done with the idea of making loans cheaper and more accessible (CBK, 2016). A research by Makanga (2015), a period before interest rate capping showed a negative though insignificant relationship while Ng'ang'a (2017) conducted a research on the same (but focused on private schools in Kajiado County) after interest rates were fixed and found a positive relationship. These two contradicting conclusions among others show a very diverse debt situation in the country which needs to be well researched and explored. Failure to do so exposes finance managers and other financing decision makers exposed to making wrong financing decisions which can lead to more corporate failures.

1.1.1 Interest Bearing Debt

Debt financing is a kind of financing which entails purchase of an interest-bearing instrument mostly protected by an asset security (Githaigo & Kabiru, 2015). A debt, which is usually a liability, is classified as interest bearing if it requires payment of an interest. The interest binds the company and failure to pay may have negative consequences on the survival of the business. According to Kerrigan (2014) debt is one of the ways in which a firm finances its investment activities, the other one being equity. Management needs to be very keen as there are many factors determining the choice of financing for an enterprise and a wrong choice may be very detrimental to the survival of an enterprise (Feng et al., 2007).

The observations by Feng et al. (2007) are however in contrast to an earlier argument by the proponents of MM hypothesis that the choice adopted for financing the operations of an entity, and thus use of debt, does not affect in any way the worth of the enterprise (though based on unrealistic assumptions). According to Saad et al. (2015), debt financing can cause an improvement on the owners' return on investment if well-structured to produce returns higher

than its cost. According to O'Brien and David (2010), use of debt is packaged with both advantages and disadvantages. Advantages for using debt as identified by Fama and French (2002) are the tax savings due to tax deductibility and the stabilization of cash flows for a company. Debt also poses some drawbacks like the costs associated with bankruptcy and possible agency related conflicts specifically between those who provide debt to a business and the business owners.

Regardless of its problems, debt has been found to be the major source of financing for continuing businesses (Baltaci & Ayaydin, 2014). This has been driven by business factors like the size of a business, profitability, nature of the corporation assets and liquidity position among other factors (Kayo & Kimura, 2011).According to Saad et al. (2015), debt is expected to produce a return higher than its cost and consequently improve owners' ROI. Levels of interest bearing debt can be measured by the actual book values of the debt and also can be measured by the actual interest payments made. This study considered the actual interest expenses booked in the income statements as the payment indicates the actual effect on the financial strength of the entity.

1.1.2 Financial Performance

Financial performance is an expression of effects of a firm's operations and policies in monetary terms (Harelimana, 2017). It was observed by Ng'ang'a (2017) that financial performance helps in establishing in monetary terms by how much have a company attained its financial objectives. According to Musila (2015), Pin itself shows how better off, or in worst cases, worse off an enterprise owner is in the end of a certain period of time. As such, it can be looked at as the returns investors get for their capital commitment in a company.

Financial performance determination is very important as it sends the relevant information to different parties useful for decision making. Investors are able to know how better off or worse

off they have become at the end of a given period of time (Musila, 2015). According to Harelimana (2017), different parties can also gauge management ability and the effectiveness of controls and policies by doing financial performance analysis. Any stakeholders in a business will be concerned in the performance (Financial) of an entity due to its close relatedness to the operations of a business. Stakeholders include customers, suppliers, government entities, employees and other interested parties with the ability to affect or can be affected by the accomplishment of business goals (Freeman, 1999).

In determination of the same, ratios (financial) have been advocated for as they present a simplified and clear analysis of the firm financial state in comparison to previous periods and also suggest to management possible areas of improvement (Tauseef, Lohano &Khan, 2015). Some of the measures as advanced by Abshir and Nagib (2016) are the operating profit margin, EVA, sales growth, EBIT, ROE and ROA. This study will consider the ROE as the measure of FP. Zenios et al. (1999) advised that ROA gives a good measure on whether the firm is making a good return on borrowed funds.

1.1.3 Interest Bearing Debt and Financial Performance

Interest bearing debt has become very common in all firms and with this kind of integration, investors and other company stakeholders need to have a concern on how the debt would affect their interests in the company. Although Modigliani and Miller (1958) advocated for irrelevance, in firm performance, of a firm capital structure, subsequent researches have proved otherwise in a real world. The use of debt has both advantages and disadvantages and some of the advantages identified by Farma and French (2012) are the tax saving on use of debt and reduction of a company cash flow distress. They also identified the stressing disadvantages of increasing agency problems between owners and managers and bankruptcy costs. A wise manager would put both the advantages (tax savings on debt payments) and also the

disadvantages (agency and bankruptcy related costs) Kraus and Litzenberger (1973) in to consideration in making a financing decision.

Apart from the use of interest bearing debt, researchers have identified other features which influence financial performance of an organization. Among the identified factors are firm size byAyako, Kungu and Githui (2015) and liquidity position of the company Mwaura (2015). Others include the board size Yusuf et al. (2014) and advertising intensity (Mueller et al., 1980). These factors have an influence in the overall relationship and all of them cumulatively together with use of interest bearing debt affects the financial performance of a company.

1.1.4 Listed Firms in Kenya

A listed firm is defined as a company having its shares trading in a stock exchange. In Kenya the trading of company shares occur in the Nairobi Securities Exchange Limited. NSE, among other functions, provide an avenue for trading of securities Kemuma (2014) and had a total of 65 companies listed with it as at September 2019 (NSE, 2019). According to Mule and Mukras (2015), NSE has a core business to facilitate raising of capital, facilitate secondary trading of securities and also sell market data. The market capitalization in NSE was Ksh 2.29706 trillion as at 22nd June 2019 (NSE, 2019), and this shows how listed firms can have a great bearing on the operations of any economy and therefore firm performance cannot be taken lightly.

Though at varying levels, these listed companies use interest bearing debt in funding their operations. This is usually in the form of bonds and the more common bank loans among other means. These items have a cost implication (interest) which can impact on the financial performance of the listed firms negatively (since they are expenses) if utilised improperly. Financial performance in this firms is very key since, apart from serving the interests of the different stakeholders, it gives a direct signal on economic performance. As such it is very crucial that impact of interest bearing debt on FP of listed firms be well researched to advise

managers of NSE trading firms on the exact relationship and also advise on when and how much of the debt to use without compromising stakeholder interests.

1.2 Research Problem

Every business venture yearns for a capital structure which enables it to minimize cost while at the same time maximising on returns (Muema, 2013). In achieving this, a company management employs a mix of the two major sources of capital at different proportions advised by their evaluation of the sources and guided by the overall objective of the business. Though Modigliani and Miller (1958) advised on capital mix irrelevance in evaluation of the value of an entity, there are later researches done which suggest otherwise in light of real world situations but all of them fall short of perfection in establishing the impact of, and therefore debt levels to use in the appropriate capital mix. While MM hypothesis falls short due to its unrealistic assumption of an ideal world, a research by Frank and Goyal (2003) dismissed the ranking advocated by Pecking Order Theory and Trade off Theory falls short due to its over emphasis on tax shield consideration when there are other very important factors to consider in usage of debt.

Cost of debt (Interest) in Kenya has been reduced significantly since 2016 when the country had its interest rates on loans fixed (CBK, 2016). After the interest rate capping, there has been collapse and/or financial strain in very major corporations like Nakumatt, Kenya Airways, Chase bank, Imperial bank, NBK and Midland Hauliers among others. The Nakumatt managing director confessed in an interview that it is debts that actually brought Nakumatt down and especially after the collapse of Imperial bank (Mutegi, 2018).The effects of debt in Kenya cut across all businesses as evidenced by the fact that treasury had written off Sh 27.2 billion by June 2018 (Odhiambo, 2019). These unexpected occurrences indicate the necessity of a study in the area of interest rates and financial performance to try to understand the relationship and especially in the Kenyan economy to advice on decision making.

Researches have been conducted on leverage and capital structure but have not been exhaustive enough to advise decision makers appropriately. A research by Kebewar (2013) on French firms established a positive correlation between financial performance and usage of debt. Though this research is very insightful, it ignored size of the companies in its analysis and may thus not be a good reference. Another study done by Pouraghajan et al. (2012) in Iran concluded a strong negative correlation between debt ratio and FP in Iran which also contradicted the research by Kebewar in French. In one of the well developed markets in the world, Baum et al. (2010) had earlier found nonexistence of any relationship between leverage in businesses and profitability in America but was later contradicted by a later research in a developing country in Zimbabwe where a positive correlation was found (Dude, Mazviona & Sakahuhwa, 2017).

In Kenya, some researches have been done but most of them have concentrated on overall capital structure ignoring the existence of different categories of debt. Maina and Ishmail (2014) established a negative influence on performance by capital structure of NSE listed firms while Githaigo and Kabiru(as cited by Ng'ang'a, 2017) found a negative effect of debt on performance (financial) of SMEs. These findings were echoed by Chepkemoi (as cited by Njagi, 2017) basing the research on SMEs but these researches cannot be used as they are as they may not give a true impact of interest bearing debt on FP. A research using the overall capital structure assumes that all debt is similar whether interest bearing or not which is not the case. Also focusing on segments in the economy or using the unregulated SMEs may give different findings and may misadvise listed firms' managers if used as such. This research seek to answer the question; what is the relationship between use of interest bearing debt and financial performance of listed firms in Kenya?

1.3 Research Objective

To establish the relationship between use of interest bearing debt and financial performance of firms listed in Nairobi Securities Exchange, Kenya.

1.4 Value of the Study

In practice, this study will be very beneficial in understanding the complex situations surrounding debts and their use. Among the beneficiaries are the company financial managers who will make financing decisions guided by the conclusions of this study. Investors will also use the findings to make wiser investment choices and also gauge the performance of their managers in line with the findings. Investors will invest in a company using more debt if a positive impact is established and avoid the same otherwise.

Other beneficiaries are government policy makers who will make interest bearing debt more favourable if a positive relationship is found and advise otherwise if a negative impact is found. Policy makers will also be very confident and accurate in their policy formulation as they will be basing their decisions on facts. They will make less errors in their policy making process and will be safe from the shame of making trial and error policies. They will then win the confidence of all those affected by their policies.

This research will also be beneficial to the theory of finance by bringing out the exact relationship between the use of interest bearing debt and financial performance. The study will be useful to academicians and especially those in the field of finance as it will complement more in to the existing literature about debt, capital mix and financial performance among other key aspects of a businesses. Students in this areas and also other researchers interested in the same will be more enlightened on this issues in the Kenyan economy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will analyse some previous works by other researchers and academicians with a view to getting some findings already reached in order to be knowledgeable and appreciate the previous works done and also avoid duplication of efforts. The chapter will also look in to the theories surrounding the subject matters in order to get a support from the existing theories. The chapter will end by looking at both the empirical and conceptual framework related to adoption of finance from external sources and the level of performance in listed firms.

2.2 Theoretical Literature Review

For effectiveness in this research and realization of its objectives, the researcher will consider a number of theories which are relevant to the study and which have a significant insight in understanding the subject matter under study. The researcher considered the following theories; trade-off theory, Modigliani and miller (MM), pecking order theory and agency theory. The theories are in line with the research variables and they show characteristics of each of the variables.

2.2.1 Trade-off Theory

This theory was advanced by Litzenberger and Kraus (1973). It views the subject matter in light of deficiencies in the Modigliani and Miller hypothesis on how the capital mix is immaterial on firm's performance as per (Adair & Adaskou, 2014). Under this theory, financing decision is made by considering a trade off or an endeavour to ensure a balance between associated costs and the expected benefits obtained from a source.

In debt use, a balancing is usually done by considering the cost implication (bankruptcy costs) and the anticipated benefits (tax savings) (Salubi & Marcella, 2016). Tax benefits arise since

interest payments are considered tax allowable expense therefore reducing tax liability, hence increasing the after tax cash flows of a firm. The benefits increase as tax rates increase but at higher levels above the optimal debt level, bankruptcy costs increases and shareholders may lose the firm control to debt holders. Adair and Adaskou (2014) indicated that an optimal debt level would be that debt level of which its marginal benefits as a result of tax advantages equals the marginal costs related to bankruptcy as a result of leverage. Though helpful in determination of debt levels to use according to Serrasqueiro and Nunes (2010) this theory is limited in applicability as it focuses on tax savings only whereas there were other important considerations of debt even before discovery of tax shield benefit (Vikneswaran et al., (2019).

In my study, this theory advises on use of interest bearing debt as it positively impacts on company performance provided the considerations for costs and benefits are well analysed. Trade off theory regardless of its deficiency of failing to consider all considerations in capital structure apart from tax saving is still very important in advising on when a choice can be made in using debt. Managers can thus base their decisions on this theory to maximise returns to their shareholders by taking advantage of tax savings not available when equity is used. They should however be careful about the levels of the debt they use as the trade-off imbalances as more and more debt is used.

2.2.2 Pecking Order Theory

This theory was advanced by Myers and Majluf (1984). According to Adair and Adaskou (2014), the theory is grounded on the recognition of three key sources of finance, that is, the undistributed profits, debt finance and equity in such order of preference. The theory has received a considerable support around the world due to its considerations of cost of financing, ease of access, availability and risks involved with the various types of financing. It has considered a wider scope compared to trade-off theory.

This theory ranks internal financing as the most preferred, debt comes second and equity ranks last financing option (Mostafa & Boregowda 2014). Management is advised to pay little dividends in order to retain more which may sometimes cause a decrease in the share prices but makes the company to be self-financing and avoid the costly external financing. The organization may end up minimising the total cost of financing for the firm through this way (Sheikh& Wang 2011). According Luigi and Sorin (2009), a company which is not in a position to raise enough retained finances may tend to prefer debt over equity as it would show management confidence in the profitability of their projects as opposed to if equity was used. The theory is however more applicable to SMEs and therefore hard to advice on financial aspects of a listed firm Kremp and Phillippon(2008)and other researchers like Frank and Goyal (2003) have found a contradicting order of preference.

Pecking order theory is relevant in my study as it highlights the order of preference on the different sources of finances in a firm and therefore one can know when to use interest bearing debt. Finance managers are advised to use debt before equity due to its show of confidence in financial performance of the business. It similarly shows that interest bearing debt should only be used after extinguishing all available retained earnings. According to the theory, financing through debt before equity can catalyse operations to a better financial performance for the concerned entity.

2.2.3 Modigliani and Miller

According to Furuk and Burim (2015), this can be claimed as the oldest of all capital structure theories. According to Modigliani and Miller (1958), acorporates capital mix is inconsequential as far as firm value is concerned. This shows that going by the interest of an improved financial performance and increase in firm value, a finance manager should not bother about the capital mix as it is not related with them in any way. It is however based on an ideal situation.

According to the theory, profitability is responsible for firm's value determination and not the capital mix proportions. The theory lay a good ground for future researches and developments in the theory of finance as evidenced by the numerous researches done thereafter (Papescu & Visinescu, 2011). As per the study by Papescu and Visinescu (2011), the theory was considered the foundation of the later theories. Their theory is however based on assumptions of ideal corporate world, which may not exist in reality (Ahmeti & Prenaj, 2015). These assumptions have been argued by subsequent scholars as unrealistic and have formed the basis for criticisms to this theory.

Considering use of interest bearing debt and its relationship with financial performance, this theory suggests a no relationship provided the ideal situation is achieved. The theory however lay a good ground for future researches and developments in the theory of finance and also sheds a good light in what could be the relationship between the two study variables in an ideal world. It is very informing on firm value and financial performance as it considers profitability as a key factor affecting the same. Finance managers should therefore emphasize on profitability and should not approach financing from a predetermined preference. This gives some flexibility in choice of capital mix as financing is very dynamic and evolves every other time.

2.2.4 Agency Theory

This theory was developed by (Meckling &Jensen, 1976). It highlights the problems which arises when management is hired by business owners to manage an entity on their behalf and taking a key interest in the critical nature of the decisions. The theory identifies the agency problems between different interested groups in a business but of a bigger concern is between the shareholders and management. This is due to their effect on the firm objectives and interests of the business owners' especially financial performance and firm value.

The theory has been more preferred in studies due to its clarity on effects of decisions (financing) by managers (agents) on the performance of businesses owned by other parties (principals) and it emphasises on solutions to these problems (Panda & Leepsa, 2017). The theory is very important for this study because shareholders are not consulted when financial managers are deciding on the source to finance business operations while they are the ones who feel the heat most when a wrong financing decision is made (Panda& Leepsa, 2017). Use of interest bearing debt compounds the simple shareholder-manager relationship by adding their interests which may also cause a conflict (Jensen & Meckling, as cited by McColgan, 2001). This theory is limited in that it does not guide on when to use which source of finance and therefore considering the theory, a finance manager is not very certain when to, and when not to use interest bearing debt.

This theory is therefore a good indicator of what would happen if financial managers do not apply skills in determination of whether or not to use interest bearing debt and the consequences for such on a corporate financial wellbeing and the shareholders wealth of the company. Though it does not give a specific condition on when to use interest bearing debt, the theory advises on financial managers to put shareholders' interests first when determining the same. Use of interest bearing debt also adds more agency relationships and managers should act wisely not to compromise any. The study sought to establish if financial managers for companies which have been listed in Kenya have been acting for the benefit of the business owners (their principals) or not.

2.3 Determinants of Financial Performance

Several studies done have suggested that there may be some other factors that also influence a firm financial performance. Such factors may be either internal or external (Ayako, Githui & Kungu, 2015). Internal features include factors like firm size, leverage levels, governance style and also the size of the firm while the external factors, also known as industry factors include

things like advertising intensity among others (Ayako, Githui & Kungu, 2015). In this study, the researcher took in to account the firm size, liquidity position, board size and the level of advertising intensity of the company.

2.3.1 Firm Size

This may be considered as a key factor affecting an enterprise performance as identified by (Ayako, Githui & Kungu, 2015). The size is determined by the amount of revenue generated in a year or by the asset base of the company. According to Chandrapala and Kn`apkov`a (2015), the assets value controlled by a firm and area of coverage in terms of services and products offered by a firm can be a good measure of a firm size. A big business usually enjoys some benefits not available to small firms. Such advantages include production and selling in huge quantities enjoying benefits of scale Rayan (2010), better credit rating and hence good chances for external financing and minimal reliance on internal financing Al-Tally (2014) and a competitive advantage as a result of a higher market penetration (Ani`c, Rajh & Teodorovi`c, 2009).

From such earlier statements and findings by other scholars, it is very evident that size has some degree of influence on firm's FP. Chandrapala and Kn`apkov`a (2015) demonstrated in the probability of success and performance of larger firms matched to small ones. Firm size was measured by value of assets, in this research, as opposed to the area of coverage in terms of services and products offered by a firm and revenue generation.

2.3.2 Liquidity Position

The term liquidity has been used to denote firms' ability to service their obligations as they mature (Brunnermeier & Pedersen, 2008). Such obligations may be in loan instalment repayment, salaries falling due, payables maturing and bills maturing among others. The ability is usually determined by comparing the firms' liquid assets and its current liabilities at a given

point in time (Hovard & Likar, 2015). This comparison is known as the current ratio and other ratios like the quick test ratio and cash ratio can be used to measure and better understand the liquidity exposure of the company. Mwaura (2015) in his study shows that a company with more current assets than current liabilities will be in a better position to meet obligations as they fall due.

According to Herelimana (2017) a company with a good liquidity rank is considered healthier in the economic performance perspective. Such a company will thus benefit from undisrupted operations, supplies and a better corporate image. The company will also have a good credit rating than a less liquid company and thus better access external financing to boost its operations and thus better financial performance. For this study, the researcher considered liquidity position based on the current ratio.

2.3.3 Board Size

Board size is the number of directors appointed to manage an organization on behalf of the owners (Oludele, Oloko & Olweny, 2016). According to their study, a bigger board size has better cumulative skills and thus a better probability of superior performance but the optimal number varied across industries and firms (Zimmerman, 2004). Bigger than optimal board size may however delay decision making as it needs more compromises (Cheng, 2008). The company will also benefit from expert opinions and advice in such fields like legal, technical and such, will therefore save on expert advice costs, and will have less exposure to litigations and less critical errors (Oludele, Oloko & Olweny, 2016). This will be so if the composition of the board is diverse and large enough to accommodate that.

According to a research conducted by Ebere et al. (2016), in a bigger board size, members complement each other in the decision making process in the organization which means low risk of errors in the decisions made. As a result of these better performance could be easily

achieved in the organization due to elimination of errors which could impact adversely the listed firm's performance. On the other side, the bigger the board size, the longer the duration extended in decision making hence the firm may miss some opportunities due to such delays.

2.3.4 Extend of Audit Function

Several researches have been done on auditing both internal and external and all have pointed to a high importance of this function in the success of a firm. Different approaches to auditing have been advocated by several researchers with the intention of helping auditors and business manager's better respond to emerging trends. Mutual (2012) advocated for a risk based auditing to increase on the ability to detect risks, increase transparency, accountability and consequently enhance financial performance. From his conclusion, there is clarity that the type of approach used in audit for an organization has an impact on the financial performance of an organization.

Ondieki (2012) emphasised on the use of internal audit to compliment the work of external auditors. She pointed out that, internal controls, which are part of internal audit help in flagging off fraudulent transactions but is subject to auditor professional competence. Due to the nature of audit function, it is clear that it has an impact on the financial performance of a firm.

2.4 Empirical Review

Kebewar (2013) studied on French firms to define the effect leverage on corporate profitability. He used panel data from 2240 non-listed companies from 1999-2006 and utilized generalized method of moment's econometric technique. It was established that debt does not affect profitability of a concern regardless of its size. The results of this study may however not be applicable in today's business world considering the elapsed time since the research was done and the developments in debt markets compounded with economic transformations necessitating a fresh research.

Another study was done by Pouraghajan and Malekian (2012) on Tehran listed firms. Data for 400 listed firms between 2006 and 2010 was used to determine the relationship between capital mix and performance. Debt ratio was used to measure capital structure and ROE and ROA to measure FP. Using multiple regression model and Pearson correlation, the researchers found a strong negative relationship between debt ratios and financial performance of the Iranian listed entities. There is a major drawback with this research as the researcher excluded financial institutions and therefore managers in such firms and financial companies' stakeholders cannot rely on the findings of the research.

Manual, Lee, Rashid and Basirduddin (2019), studied on influence of capital structure on financial distress in non-financial firms in Malaysia. They utilised secondary data collected from 768 listed companies and adopted a panel quantitative research design. Data was collected from annual statements filed at KLSE exchange for the period 2013-2017. Financial ratios were computed using Microsoft excel and panel regression done using Eviews version 10. Using Altman's Z-score for financial distress and financial leverage, internal equity, external equity and asset structure for capital structure, capital structure was found to significantly influence financial distress. Apart from the internal equity, the rest were found to increase the financial distress in a company. Though very elaborative, this research was in Malaysia which has different economic conditions and especially in leverage from Kenya. Kenyan managers may need a local research done to establish the relationship in Kenya.

A research done by Yazdanfar and Öhman (2015) in Sweden focusing on SMEs intended to define the relationship between debt levels and performance of such firms. The research was done using 15,897 businesses between the years 2009-2012 running across sectors and used three stage least squares and fixed effects models for analysis. It was established that debt ratios (as determined by trade credit and short and long term debt) affects performance (measured by profitability) negatively. The study however considered SMEs only and studied within a period

of 4 years only which is a short period for an empirical study and considering that the research is done in one country only.

Al-Tally (2014) carried out a research in Saudi Arabia seeking to establish connection between leverage and firm FP. He used data from 57 listed firms between the years 2002-2010 and used multivariate analysis of variance. He then used ROA and ROE to measure financial performance and total debt to total assets ratio as the measure of leverage. The researcher found an adverse effect of leverage on FP. His study however excluded companies established after 2002 and whose financial year ends were not on 31st of December. These exclusions limits acceptability of the findings though relevant.

In the local context, Mohamed (2017) did a research on 10 manufacturing firms in Kenya seeking to establish the impact of debt on FP of NSE listed manufacturing firms. He employed a descriptive research design and used secondary data for the years 2012-2016. The study established that debt has no influence on FP of listed firms. He had however used a section of the listed firms which accounts for only 15% of the population. The fact that the study was based on one industry also limits its applicability in the other industries though very useful in the manufacturing sector.

Makanga (2015) researched on effect of debt on performance of non-financial listed firms. He used an experimental research design and researched on 50 firms using secondary panel data for the years 2009-2013. Using ROA for financial performance and total debt to total assets ratio for financial leverage, the researcher resolved that debt had a negative but insignificant influence on financial performance. The research had however excluded financial firms and is based on performance of firms 6 years ago. Since a lot have changed in debt markets and general economic situation, there is need to confirm if the same still holds.

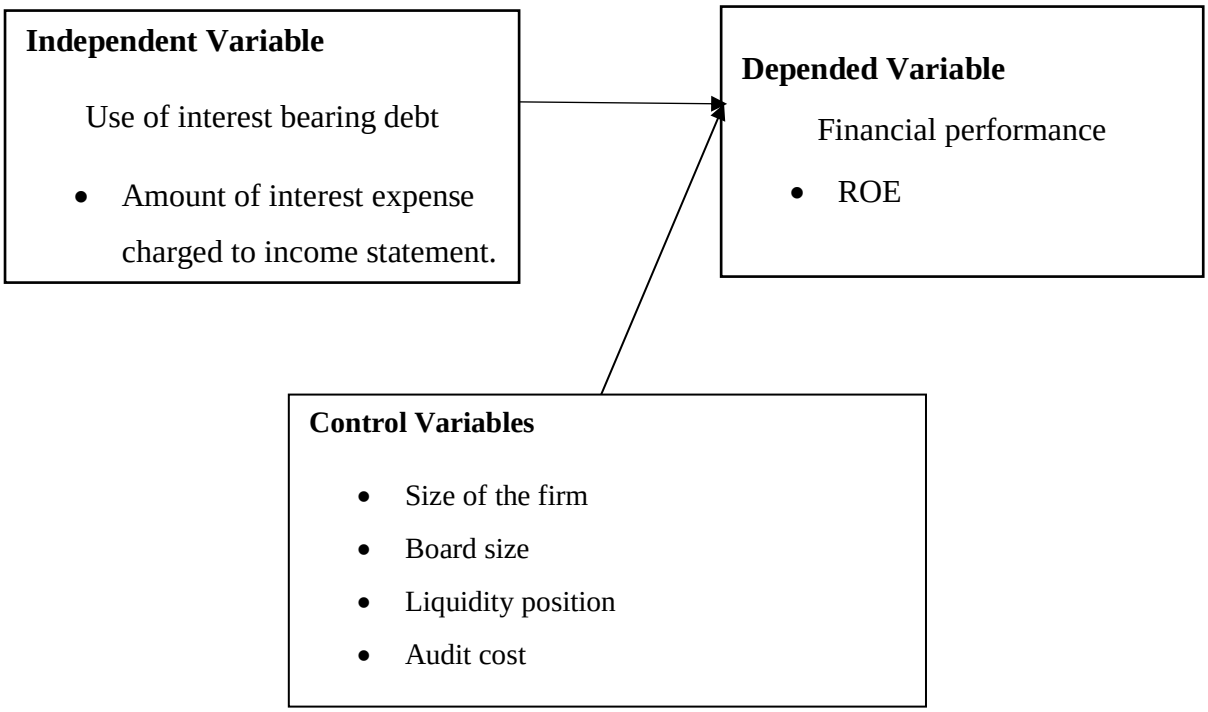
Ng'ang'a (2017) researched on effect of debt funding on FP of private secondary schools in Kajiado county. He based his research on a descriptive research design and data from available 43 non-governmental schools out of the possible 61 in the county. He collected data using data collection forms administered by the bursars for three years ending with the year 2016. The research found a weak positive correlation between the study variables. His study was however very geographically limited and also carried out in a specific industry. The same results may not be applicable outside the education sector. The research was also very limited in time span as it used data for three years only.

Maina and Ishmail (2014) studied on effect of capital mix on financial performance of listed firms in Kenya. They used a census research and collected data (secondary) for the years 2002-2011. They also used a casual research design and Gretl software for panel data regression. Using total debt to asset ratio for capital structure and ROE for performance, the researchers found a non-significant adverse relationship between debt and financial performance. Having been done before interest rate capping, there is a likelihood that the research results are not applicable in the current situation of interest rate capping.

Simiyu et al. (2016) studied the relationship between sources of business financing on FP of SMEs in Lurambi Sub-County in Kenya. Their research was based on primary data from a sample of 88 SMEs in a population of 450 SMEs obtained through stratification and then simple random sampling. They used questionnaires to collect the data and descriptive statistics design was used. It was established that commercial loans have a significant positive effect on financial performance of SMEs. The study was limited to SMEs only and was carried out in a specific sub-county which may have different characteristics from the rest of Kenya.

2.5 Conceptual Framework

From the above literature, the below relationship can be obtained.



Source: Author (2019)

Figure 2.1 Conceptual Framework

2.6 Summary of Literature Review

Though researches have been done, they have just been able to advance the knowledge of debt and financial performance but have not been conclusive and the previous researches done cannot accurately predict the impact of interest bearing debt on the financial performance NSE of listed firms. Most of this studies done have been done on developed economies like France. Taking in to account the difference in the debt market development of such markets and Kenya, there is a huge gap necessitating this research. Likewise are researches in the Arab world like Egypt by Ebaid (2009) and Al-Tally (2014) in Saudi Arabia. Other researches like the Makanga (2015) done in Kenya were done before interest capping and thus may not be useful in an

interest fixed period as such fixation affects the cost of debt finance necessitating a fresh relook in to the matter.

Other researches have been done on specific segments like Ng'ang'a (2017) who focused on private schools and more specifically in Kajiado County. Such findings are very useful in the area of education but cannot be used in predicting the relationship in listed firms due to their differences in operations, financing requirements and governance among other differences. For the same reasons researches focusing on SMEs in Lurambi Sub-County Simiyu et al. (2016) did not give a good guidance in analysing the subject matter under the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section introduces the research methodology the researcher is planning to apply. The section highlights the research design to be adopted, target population and the methods to be used in collection of the required data. The section also identifies the various diagnostic tests which the researcher carried out on the collected data to ensure validity and also the methods the researcher used to do his data analysis.

3.2 Research Design

Dista (as cited by Ng'ang'a, 2017) posits that a good research design enables a researcher to obtain solutions to research questions validly and accurately and in an objective and economical manner. In light of this statement, the researcher adopted an experimental research design. Experimental research design has been favoured since it can determine the accurately the effect of the independent variable (use of interest bearing debt) on the depended variable (financial performance) (Creswell, as cited by Makanga2015).

3.3 Population

The population targeted was the 65 listed firms in Nairobi stock exchange. Since there are only a few and their data is readily available, census survey was conducted. This ensured that all industries are covered and well the best representation of the economy is done. The research findings are thus applicable in a wider range.

3.4 Data Collection

Data was collected from secondary sources by using financial statements the selected companies file with the Nairobi securities exchange. The statement of comprehensive income was the main source, other sources being the statement of financial position and report to

shareholders. Data collected included the amounts of profits and loss for the specific years reported in income statements, interest expenses charged to the income statements, value of company assets in statements of financial positions, and the value of current assets and current obligations both found in the statements of financial positions. Data about the number of directors was obtained from the report to the shareholders and audit cost charged for the years was collected from the income statements. To ensure adequate data for proper analysis and decision making, the same data collected for the past 5 years ending with 2018.

3.5 Operationalisation of study variables

There are several operational indicators of financial performance. The major ones include the net profit margin, gross profit margin, EVA, ROE and ROA (Abshir & Nagib, as cited by Ng'ang'a, 2017). This study used ROE as the operational indicator of financial performance. Interest bearing debt can be operationalized using the interest expense as recorded in the financial statements or the times interest earned ratio while the most common operational indicator for business size is the size of its asset base (Chandrapala and Kn`apkov`a, 2015).Liquidity position can be measured using acid test ratio, current ratio and cash ratio (Heyler, 2003).It can also be operationalised using aging accounts receivable and by operating cash flow (Mueller, 2019). This study measured liquidity using the current ratio. Number of directors is a good indicator of board size and extend of audit can be measured using the audit cost charged in the financial statements (Krisnanto, 2016).

Variables	**Operational indicators**	**Supporting Literature**	**Rating Measure**
Financial performance	Gross profit margin, net profit margin, ROE, ROA and EVA	Abshir & Nagib (as cited by Ng'ang'a, 2017)	Return on Assets

Use of interest bearing debt	Interest expense, times interest earned ratio	Chen (2019)	Times interest earned ratio
Firm size	Total value of assets	Chandrapala and Kn`apkov`a (2015)	Ln of assets
Liquidity position	Current ratio, cash ratio, acid test ratio, aging accounts receivable and operating cash flow ratio.	Heyler (2003), Mueller (2019)	Current ratio
Board size	Number of directors	Oludele, Oloko & Olweny, (2016)	Number of directors
Audit Extent	Audit cost	Krisnanto (2016)	Ln of audit cost

3.6 Diagnostic Tests

The following diagnostic tests were done on the secondary data collected.

3.6.1 Test for Multicollinearity

Multicollinearity is the existence of correlation between certain independent variables in the same regression model. Its existence and degree was tested by use of Variance Inflation Factor and if the value of any variable exceeds five, it was taken to have severe multicollinearity. The situation was redeemed by identifying highly related independent variables in my research or by omitting some of the highly related independent variables.

3.6.2 Test for Heteroscedasticity

This check was done to determine if the error term is, or is not homoscedastic and was done by using the Breusch-Pagan test. The value was interpreted by comparing with 0.1 and the data was free from heteroscedasticity if the value is greater than 0.1 and if otherwise, was assumed to be suffering from heteroscedasticity and were corrected using the Robust standard errors.

3.6.3 Test for linearity

The variables was tested for linearity by plotting graphs of the dependent against the independent variables one at a time and studying the shape of the graph. A straight line did suggest linearity while a curve necessitated use of logs of the specific independent variable.

3.6.4 Test for Omitted Variables

The researcher tested for any omitted variables using Ramsey Reset test and accounted for any omitted variables by collecting more data to ensure sufficient data for analysis.

3.6.5 Test for Autocorrelation

This test will be done to understand the relationship between error terms of subsequent periods. The test will be done by use of Durbin Watson for 1^{st} order autocorrelation and Breusch Godfrey for higher order autocorrelation. In case of serial autocorrelation, robust standard errors will be used to correct the autocorrelation.

3.6.6 Test for Stationarity

Stationarity is the property exhibited in data when variance and mean remain the same over time. Stationarity in the data was tested using the ADF test. Correction would have been done by differencing.

3.6.7 Hausman Test

This is a test for model misspecification using two different estimators of the model problem (Hausman, 1978). This will help in identifying whether to choose the random or the fixed

effects model to increase precision. It will be done by analysing the behaviour of the difference between the efficient and the consistent estimator. It will be interpreted by considering if the difference between the two is diverging or converging towards zero.

3.7 Data Analysis

This represents the process in which inferences are made in a systematic and objective manner from data collected. In this study, data analysis did employ both the descriptive statistics compounded with the panel regression technique. This was done with the aim of getting the exact relationship in terms of magnitude and direction between the two research variables. Descriptive statistics helped in summarising the data so that it can be possible to run a regression and ascertain the association between the two main research variables together with the control variables.

3.7.1 Analytical Research Model

The below analytical model was used in the study.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \varepsilon$$

Where,

Y, Financial performance measured using ROA for firm *i* at time *t*

$\beta 0$, Regression equation constant

X_{1it}, Levels of interest bearing debt using the times interest earned ratio for firm *i* at time *t*

X_{2it}, Size of the firm measured using natural log of total assets for firm *i* at time *t*

X_{3it}, Liquidity position measured using the current ratio for firm *i* at time *t*

X_{4it}, Board size measured using natural log of number of directors for firm *i* at time *t*

X_{5it}, Extend of audit work as measured using the natural log of audit cost expense for firm *i* at time *t*

ε, Probable residual error

$\beta 1, \beta 2, \beta 3, \beta 4, \beta 5$, the coefficients of interest payments, firm size, liquidity position, board size and audit work respectively

3.7.2 Test for significance

A combination of T-test, P-value and ANOVA was used to test the regression results for significance in both the dependent and independent variables as and when appropriate. T-tested test if there is any difference between the mean of the population and the calculated mean, F-test tested if the variances are equal and significance of the study regression results were tested using P-value.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the researcher presents the information obtained after analysis of the data collected. It gives information on the response rates to do with the respondents, validity tests on data, summary descriptive statistics of the collected data and correlation analysis of the variables. The chapter also outlines the regression results and the research findings by the researcher.

4.2 Descriptive Statistics

The researcher was able to collect 93% data for the return on assets, 78% in the interest bearing debt, 93% of firm size data and 93% on liquidity in NSE listed firms. The researcher also collected 92% data on the board size and 87% on the extend of audit function. Overall response rate is 73% based on complete availability of data for all variables in any specific year. According to Mugenda et al. (2013) that data above 70% is excellent. In view of this observation, the researcher considers the response rate in this study as excellent and the available data is fit for regression and can be a good estimator of the research objectives.

Table 4.1 Response Rate Table

Variable	Financial performance	IBD	Firm size	Liquidity	Board Size	Extend of audit function
Data collected	302	253	302	301	301	278
Unavailable data	23	72	23	24	24	47
Total	325	325	325	325	325	325
Response rate (%)	93%	78%	93%	93%	92%	89%

Source: Author

The average financial performance as measured by the return on assets in the NSE is -0.0017 with a standard deviation of 0.4587. The minimum performance is -7.6316 and the maximum profitability is 0.5032. This shows that a prospective investor in the NSE listed firms should expect a worst case scenario negative return of 763%. The investor should also expect a best case scenario performance of 50.32%. The mean value of times interest earned is 32.6 showing that listed firms are more able to meet their interest obligations several times using a year's profit. This has a standard deviation of 134, a minimum value of -256 and a maximum value of 1,485. The mean size of a listed firm as measured by the Ln of assets is 23 with a standard deviation of 2.16. The minimum and maximum sizes are 17 and 18 respectively.

The other variable under study is the liquidity which has a current ratio of 12.8 and a standard deviation of 137. The minimum and maximum liquidity positions is 0.029 and 2069.78 respectively. Another variable is the board size which ranges between 4 and 18 for the listed firms. The mean board size is 9 with a standard deviation of 2. The last variable is the extend of audit function as measured by the Ln of audit cost. For the years under consideration, the mean extend of audit function is 16 with a standard deviation of 1.2, a minimum value of 10.4 and a maximum value of 17.9.

Table 4.2 Table for Data Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FP	236	-.0017119	.4587126	-7.6316	.5032
IBD	236	31.61224	134.2618	-255.8132	1484.84
Ln Firm Size	236	23.49069	2.160611	17.7316	27.2946
Liquidity	236	12.80053	137.4135	.029	2069.776
Board Size	236	8.986667	2.839018	4	18
Ln Extend of audit	236	15.94626	1.222343	10.4341	17.8676

Source: Test results

4.3 Diagnostic Tests

This section outlines the various tests the researcher carried out on the data to ensure proper estimation of the relationship under study. The following diagnostic tests were carried out on the data to ensure that it was fit for estimation of the relationship between the research variables.

4.3.1 Test for Omitted Variables

The existence of omitted variables in the regression equation was tested using the Ramsey reset test. Using a null hypothesis of nonexistence of omitted variables, the research produced a significant P value which ensured that the null hypothesis is rejected. The researcher then concluded that there is the existence of omitted variables in the model

Table 4.3 Ramsey RESET Test Table

Ramsey RESET test
Ho: model has no omitted variables
F(3, 172) = 16.36
Prob > F = 0.0000

Source: Ramsey RESET test results

4.3.2 Test for Heteroscedasticity

Heteroscedasticity was tested using the Breush-Pagan test with the null hypothesis that heteroscedasticity does not exist. The test returned a significant P value prompting the researcher to reject the null hypothesis. This shows that heteroscedasticity eisted which was then corrected using robust during regression.

Table 4.4 Breusch-Pagan Test Results Table

Breusch-Pagan test
Ho: Constant variance
chi2(1) = 111.50
Prob > chi2 = 0.0000

Source: Breusch-Pagan test results

4.3.3 Hausman Test

This test was done to help the researcher in determining if to use a fixed or a random effects model. Fixed effects and random effects regressions were first done separately and then Hausman test was done. The test results indicated that a fixed effects model was appropriate for the study at 5% confidence level.

Table 4.5 Fixed Effects Model Results

Fixed-effects (within) regression				Number of obs = 236		
Group variable: Company				Number of groups = 57		
R-sq:				Obs per group:		
within = 0.0697				min = 1		
between = 0.0000				avg = 4.1		
overall = 0.0360				max = 5		
				F(5,174) = 2.61		
corr(u_i, Xb) = -0.3028				Prob > F = 0.0265		
FP	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
IBD	.000054	.0000512	1.05	0.293	-.0000471	.000155
LnFirmS	.0355459	.0162481	2.19	0.030	.0034772	.0676145
Liquidity	-.0000168	.0000708	-0.24	0.813	-.0001565	.000123

BoardSize	-.0137783	.0052702	-2.61	0.010	-.0241801	-.0033765
LnExtendofAudit	-.0015037	.0102827	-0.15	0.884	-.0217985	.0187911
_cons	-.6730383	.3919305	-1.72	0.088	-1.446588	.1005115
sigma_u .13038528						
sigma_e .07535323						
rho .7496251 (fraction of variance due to u_i)						
F test that all u_i=0: F(56, 174) = 6.66 Prob > F = 0.0000						

Source: Fixed effects regression results.

Table 4.6 Random Effects Results Table

Random-effects GLS regression				Number of obs = 236		
Group variable: Company				Number of groups = 57		
R-sq:				Obs per group:		
within = 0.0511				min = 1		
between = 0.0657				avg = 4.1		
overall = 0.0582				max = 5		
				chi2(5) = 13.08		
corr(u_i, X) = 0 (assumed)				Prob > chi2 = 0.0226		
FP	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
IBD	.0001206	.0000479	2.52	0.012	.0000267	.0002146
Ln Firm Size	.0171239	.0079565	2.15	0.031	.0015295	.0327183
Liquidity	-.0000108	.0000708	-0.15	0.879	-.0001496	.000128
Board Size	-.0101759	.0043157	-2.36	0.018	-.0186345	-.0017174
Ln Extend of Audit	-.0057981	.0091932	-0.63	0.528	-.0238165	.0122203
_cons	-.1994088	.1666819	-1.20	0.232	-.5260993	.1272817

sigma_u .10007716
sigma_e .07535323
rho .63818828 (fraction of variance due to u_i)

Source: Random effects regression results

Table 4.7 Hausman Test Results Table

	Fixed effects	Random effects	Difference	S.E.
IBD	.000054	.0001206	-.0000667	.0000179
LnFirmS000	.0355459	.0171239	.018422	.0141666
Liquidity	-.0000168	-.0000108	-.00000595	.
BoardSize	-.0137783	-.0101759	-.0036024	.003025
LnExtend	-.0015037	-.0057981	.0042944	.0046062
Test: Ho: difference in coefficients not systematic				
chi2(5) = 14.27				
Prob>chi2 = 0.0140				

Source: Hausman test results

4.3.4 Test for Multicollinearity

The researcher tested for multicollinearity using the Variance Inflation Factor test and interpreted the results at 5% confidence interval. It was established that the firm size had a very high VIF value and thus high correlation with other independent variables. This was done taking in to account the company effects. As a result of the high multicollinearity in the firm size, it was excluded in the final regression of the study. The study results also indicate that the variables had a mean VIF value of 4.09 which is within the confidence interval and so the general view is absence of severe multicollinearity in the variables.

Table 4.8 Multicollinearity Test Results

Variable	VIF	1/VIF
IBD	2.04	0.489133
Ln Firm Size	44.48	0.022483
Liquidity	1.25	0.798995
Board Size	7.87	0.127013
Ln Extend of audit	5.93	0.168527
Mean VIF	4.09	

Source: VIF test results

4.3.5 Test for Stationarity

The researcher tested for stationarity in the variables using the Augmented Dickey Fuller Test. This was done at a confidence level of 5% with the null hypothesis that all panels contain unit roots.

Table 4.9 ADF Test Results

Variable		Statistic	P-value	Number of panels	Average number of periods
FP	Inverse Chi2 P	590.2433	0.0000	65	4.65
	Inverse Normal Z	-5.7871	0.0000		
	Inverse Logit L*				
	Modified Inverse chi2				
IBD	Inverse Chi2 P	828.6015	0.0000	57	4.44
	Inverse Normal Z	-15.3223	0.0000		
	Inverse Logit L*	-32.9862	0.0000		
	Modified Inverse chi2	50.2421	0.0000		

Ln Firm size	Inverse Chi2 P	1149.5793	0.0000	62	4.65
	Inverse Normal Z	-16.5470	0.0000		
	Inverse Logit L*	-40.0021	0.0000		
	Modified Inverse chi2	65.1243	0.0000		
Liquidity	Inverse Chi2 P	682.1736	0.0000	65	4.63
	Inverse Normal Z	-9.2539	0.0000		
	Inverse Logit L*	-21.7609	0.0000		
	Modified Inverse chi2	35.4441	0.0000		
Board size	Inverse Chi2 P	221.9662	0.0000	65	4.62
	Inverse Normal Z	-1.8789	0.0301		
	Inverse Logit L*	-6.4824	0.0000		
	Modified Inverse chi2	6.2209	0.0000		
Audit Extend	Inverse Chi2 P	685.5176	0.0000	64	4.34
	Inverse Normal Z	-11.5275	0.0000		
	Inverse Logit L*	-25.6555	0.0000		
	Modified Inverse chi2	37.8497	0.0000		

Source: ADF test results

4.3.6 Normality test

Normality test was carried out on the data using both the skewness and kurtosis. The data was found to be well distributed except the board size. This showed that the data was not suffering from uneven distribution and hence fit for use in regression analysis.

Table 4.10 Normality Test Results Table

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Financial Performance	302	0.0000	0.0000	.	0.0000
Use of debt	253	0.0000	0.0000	.	0.0000
Ln of Firm Size	302	0.0087	0.0253	10.63	0.0049
Liquidity	301	0.0000	0.0000	.	0.0000
Board Size	300	0.0873	0.2915	4.06	0.1316
Ln Audit 000	278	0.0000	0.0000	.	0.0000

Source: Normality test results

4.5 Correlation Analysis

Correlation analysis was done using the Pearson correlation coefficient. The correlation analysis show very low levels of correlation between the independent variables. The only high levels of multicollinearity observed were between the size of the firm and both the board size and extend of audit. The high levels did not pose a challenge as the firm size was left out of regression as it also had high values of variance inflation factor. There were also observed negative correlations all of which were related to the interest bearing debt and the other independent variables except the board size.

Table 4.11 Correlation Analysis Results Table

	FP	IBD	Ln Firm size	Liquid	Board Size	Ln Audit Extend
FP	1.0000					
IBD	0.2226	1.0000				
Ln Firm Size	0.1153	-0.0794	1.0000			

Liquidity	0.0077	-0.0111	0.0427	1.0000		
Board Size	0.0290	0.0901	0.6142	0.0064	1.0000	
Ln Audit Extend	0.0313	-0.0286	0.6828	0.0951	0.4457	1.0000

Source: Pearson correlation coefficient test results

4.6 Regression Analysis and Hypotheses Testing

Regression confirms the effect of the independent variables on the dependent variable. Using the regression results the researcher was able to determine that the use interest bearing debt positively and insignificantly affects the financial performance enterprises. It has also been established that 70.28% of the changes in financial performance can be attributed to the use of interest bearing debt, liquidity position and the number of directors in a firm.

Regression results have also established that liquidity and board size affect the financial performance of a firm negatively. The regression was done omitting the size of the firm due to its high multicollinearity level. The effect by board size is significant while the effect by liquidity is insignificant. The regression results have also shown that there is a great portion of company specific factors which affect the financial performance of a business. The analysis established that company specific factors have the highest impact on the financial performance.

Table 4.12 ANOVA

Source	SS	df	MS	Number of obs = 23
				F(60,175) = 6.90
Model	2.40010577	60	.040001763	Prob > F = 0.0000
Residual	1.01516664	175	.005800952	R-squared = 0.7028
				Adj R-squared = 0.6008
Total	3.41527241	235	.014533074	Root MSE = .07616

Source: Panel regression results

Table 4.13 Regression Analysis

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
IBD	.0000608	.0000516	1.18	0.241	-.0000411	.0001627
Liquidity	-.0000104	.0000715	-0.15	0.884	-.0001515	.0001307
Board Size	-.0135555	.0053259	-2.55	0.012	-.0240668	-.0030441
Ln audit extend	.0028377	.0101979	0.28	0.781	-.017289	.0229644
_cons	.1021624	.1692805	0.60	0.547	-.2319316	.4362565
Company F(56, 175) = 6.712 0.000 (57 categories)						

Source: Panel regression results

4.7 Discussion of Research Findings

The study research findings have confirmed that use of interest bearing debt has a positive impact on the financial performance of firms. This is in agreement with the tradeoff theory but contradicts the propositions of the MM hypothesis. More research however needs to be done to confirm the ranking by the pecking order theory but the positive relationship suggests a higher ranking in terms of preference. As a consequence of the positive impact, measures should be taken to make interest bearing debt more accessible to businesses so as to boost their financial performance.

This study have also established that liquidity affects financial performance negatively. This can be explained in terms of holding too much liquidity losing out on opportunity costs. The findings contradict the findings of Mwaura (2015) and Herelimana (2017). Both of them had established a positive impact on financial performance by liquidity. As such managers need to be keen on their choice of financing and their liquidity levels.

Research findings have also shown that there is a negative relationship between the size of the board and the financial performance of listed firms. This shows that there may be some agency problems in the NSE listed firms. Though bigger boards have been associated with adequacy

of ideas, this may have been watered down by other factors like longer decision making process to bring a net negative effect. The research findings have contradicted the findings of Oludele, Oloko and Olweny (2016), Cheng (2008) and Ebere et al (2016) who concluded that bigger boards are better in financial performance.

In terms of the importance of audit in an organization, the research have found a positive relationship between the audit cost and the financial performance of firms. This shows that higher audit costs are as a result of extensive engagement with the clients and investors are getting value for the expense. Hailing firms can thus engage the services of auditors for different assignments to boost their position since their work have been associated with good financial performance in firms.

This research have also established that there are other many company specific factors which affect the financial position of a firm. Company managers need to be very aware of their factors which are hard to measure in quantitative terms as they play a role. The managers also need to be aware of the factors causing the close to 30% of the changes in the financial performance which have not been accounted for by this research. Managers can therefore engage in more researches to know the other factors and how they affect the same.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the research findings, conclusions made and recommendations proposed by the researcher. It also outlines the limitations of the study together with suggestions for further research.

5.2 Summary of Findings

This research was primarily concerned with the determination of the relationship between the use of interest bearing debt and the financial performance of firms. Other variables considered for the study were the board sizes, extend of audit function and liquidity levels. The research targeted the 65 listed firms and each variable data was collected for five years resulting to 325 possible data points. The researcher was however able to collect 236 complete data for the companies leading to an overall response rate of 73% which was enough for analysis.

Study results show that the average financial performance in NSE is -0.1% while the average times interest earned ratio is 31.6 times. The average liquidity is 12.6 while the average natural log of audit expense is 15.9. The study have also established that the average board size in NSE is 9 members. Multicollinearity test done on the collected data indicated that firm size was very much correlated with other variables in the model due to its high value of VIF. Normality tests to check for skewness and kurtosis indicated that all data was well distributed except the board size at 5% significance level but fine at 10% significance level. Correlation test using the Pearson correlation coefficient indicated that there is negative correlation between the interest bearing debt and all other study variables except the board size. It was also established that there is less correlation between the study variables as indicated by the low levels of the coefficients.

Study results indicate that 70.28% of the changes in the financial performance of enterprises can be attributed to the changes in the use of interest bearing debt, board size, liquidity positions and the extend of audit function. The research has established that use of interest bearing debt positively impacts on company financial performance. It has also been established that audit cost impacts on financial performance positively. This has proved that checks are very critical in the success of any entity.

Study findings have also found that a bigger board size has an adverse impact on financial performance. This can be seen in terms of complexity in decision making and other such disadvantages which come with bigger board sizes. Liquidity position has also been found to impact negatively on firms' financial performance. Managers should thus consider lower levels of liquidity and instead current liabilities with current assets to avoid losing on opportunity cost. Idle liquidity should also be held in an interest earning form.

5.3 Conclusion

The research have found a positive significant influence on the financial performance by the use of interest bearing debt in the listed firms in Kenya. As a result the researcher concludes that good use of interest bearing debt have a positive impact on financial performance of listed firms in Kenya. This also shows that debt markets and debt financing management has been good in the country and particularly with the listed firms. This research also concludes that interest rate capping was well informed and that any adverse review for the same may be compromising the financial performance of corporations.

The research also sought to determine the impact of liquidity, number of directors and extend of audit on the financial performance of listed firms in Kenya. It has been established that the size of the board is negatively related to the financial performance. This leads to a conclusion that big board sizes do not really add value to an organization and if they do, the benefit is watered down by other disadvantages they come along with. The researcher thus concludes

that it is better to have a small board size provided that the members have the required expertise. The mix between the executive and non-executive directors can also be checked to ensure the quality of the board is maintained.

Study results have indicated that high liquidity affects financial performance negatively. This can be corrected by ensuring that all idle cash is held in an interest earning form and maintaining just the appropriate levels of current assets. They should just be enough to cover the current liabilities. The findings can also be used to conclude that working capital management has not been so good in the listed firms and most of the managers may have focused on avoiding the negative effects of less liquidity at the expense of financial performance.

Audit cost have been found to have a positive impact on firm performance. It can thus be concluded that audit practice in Kenya is really important and meets the minimum acceptable requirements of operation. Higher audit costs can be seen to add value through extensive engagements which create more wealth to the shareholders. As such the agency relationship between shareholders and auditors does not face agency problems in the NSE.

Study results have also indicated that the variables account for 70% of the changes in the financial performance. Based on this the researcher concludes that there is a bunch of other factors that influence financial performance of a corporation. Managers thus need to invest in other researches to discover the factors to be able to make good decisions.

5.4 Recommendations

Based on the research findings on the relationship between interest bearing debt and financial performance of listed firms in Kenya, the researcher recommends that steps be taken to continue to motivate the uptake of the financing facility. This may involve the retention of the current interest rate capping and taking steps to motivate banks giving out the loans at such

capped rates. Other measures can be taking steps to advance the debt market beyond loans and advances.

Since liquidity have now been associated with lower financial performance in listed firms, it is recommended that managers exercise care in managing their working capital and more precisely not to hold too much of liquidity. It is recommended that managers hold any available liquidity in an interest earning form to boost financial performance. Managers can also undertake working capital management measures like using Just in time ordering process to avoid too much liquidity which my pose some problems in their management.

Company management are also advised to relook on the importance of having bigger boards and see if they actually create value for the entity. It is also recommended that boards be appointed objectively as currently bigger boards have been found to impact negatively on the financial performance of companies. A good mix of executive and non-executive should be encouraged to exercise the best recommended practices.

It is also recommended that companies continue to engage with audit services which acts as a check and also a solution to most of the agency solutions which exist in an organization. Different auditors can be engaged for different specific tasks and their payments matched to their workload and criticality of their assignments and more so on how it is possible for the work to impact on financial performance match the payment to auditors with the amount of workload which would be dictated by the amount of activity in the organization.

5.5 Limitations of the Study

This research was conducted in the listed firms in the country and the conditions in listed firms may not match the operating conditions in the unlisted companies. As such more research is needed before taking the results and applying them as they are in the unlisted firms. The research has also been conducted for the previous 5 years ending with 2018 and conditions may change in the future to warrant further researches. This may take the form of removal of interest

rate capping, increasing the statutory requirement on the minimum number of directors, limitation on the composition of the board and such other changes. Incase such happens, it will not be applicable without further research with the changed conditions.

This research has also been conducted in the Kenyan economy and since different countries have different debt and economic setups, the study is limited to such countries with matching conditions like Kenya. Another limitation is the fact that the research has been carried out on listed firms only. It is very important that the same be done on private entities as they form the bulk of investment activities in any economy.

5.6 Suggestions for Further Research

The researcher believes that the field of finance and company management is very diverse and dynamic. To compliment this research, the researcher recommends that researches be done on the impact by specific sources of debt finance on profitability, effect of the debt financing on the probability of company collapse and also whether the positive relationship is the same regardless of the stage in the company development life cycle.

Other researches can also explore on other financing methods apart from the interest bearing debt and see how they impact on the financial performance and by what degree. This will enable informed decisions and will advise managers appropriately. Other researches can study on the characteristics of the current boards of management to try to evaluate why such an important function would impact negatively on the financial performance of listed firms in Kenya.

The researcher also recommends that researches be done to see if there are optimal interest bearing debt ratios to avoid the research findings being employed blindly. This is because if optimal levels of the same exist, adverse relationship would be felt if the level is exceeded beyond the optimal level. Others can also research in other countries to try to understand if the results are similar across countries.

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APPENDICES

Appendix I: NSE Listed Firms

1. Arm Cement Plc
2. Atlas African Industries Ltd Gems
3. B.O.C Kenya Plc
4. Bamburi Cement Ltd
5. Barclays Bank of Kenya Ltd
6. Bk Group Plc
7. Britam Holdings Plc
8. British American Tobacco Kenya Plc
9. Car & General (K) Ltd
10. Carbacid Investments Ltd
11. Centum Investment Co Plc
12. CIC Insurance Group Ltd
13. Crown Paints Kenya Plc
14. Deacons (East Africa) Plc
15. Diamond Trust Bank Kenya Ltd
16. E.A.Cables Ltd
17. E.A.Portland Cement Co. Ltd
18. Eaagads Ltd
19. East African Breweries Ltd
20. Equity Group Holdings Plc
21. Eveready East Africa Ltd
22. Express Kenya Ltd
23. Flame Tree Group Holdings Ltd

24. HF Group Plc

25. Home Afrika Ltd

26. I&M Holdings Plc

27. Jubilee Holdings Ltd

28. Kakuzi Plc

29. Kapchorua Tea Co. Ltd Ord

30. KCB Group Plc

31. Kengen Co. Plc

32. Kenolkobil Ltd

33. Kenya Airways Ltd

34. Kenya Orchards Ltd

35. Kenya Power & Lighting Co

36. Kenya Re Insurance Corporation Ltd

37. Kurwitu Ventures Ltd

38. Liberty Kenya Holdings Ltd

39. Longhorn Publishers Plc

40. Mumias Sugar Co. Ltd

41. Nairobi Business Ventures Ltd

42. Nairobi Securities Exchange Plc

43. Nation Media Group Ltd

44. National Bank of Kenya Ltd

45. New Gold Etf

46. NIC Group Plc

47. Olympia Capital Holdings Ltd

48. Safaricom Plc

49. Sameer Africa Plc

50. Sanlam Kenya Plc

51. Sasini Plc

52. Stanbic Holdings Plc

53. Standard Chartered Bank Kenya Ltd

54. Standard Group Plc

55. Stanlib Fahari I-Reit

56. The Co-Operative Bank of Kenya Ltd

57. The Limuru Tea Co. Plc

58. Total Kenya Ltd

59. Tps Eastern Africa Ltd

60. Trans-Century Plc

61. Uchumi Supermarket Plc

62. Umeme Ltd

63. Unga Group Ltd

64. Williamson Tea Kenya Ltd

65. Wpp Scangroup Plc

Appendix II: Data summary

Company	Year	FP	IBD	Ln Firm S	Liquidity	Board Size	Ln Extend of Audit
Arm Cement Plc	2014	0.4046	24.1644	24.33	0.4692	9.10	16.11
Arm Cement Plc	2015	(0.0557)	(1.2518)	24.67	0.3834	9.21	16.00
Arm Cement Plc	2016	(0.0548)	(0.9296)	24.66	0.5852	9.21	16.17
Arm Cement Plc	2017	(0.1534)	(3.7719)	24.48	0.2166	9.39	
Arm Cement Plc	2018						
Atlas African Industries Ltd Gems	2014	(0.0738)		21.42	14.5915	8.52	15.63
Atlas African Industries Ltd Gems	2015	(7.6316)		19.96	1.8206	8.99	15.87
Atlas African Industries Ltd Gems	2016						
Atlas African Industries Ltd Gems	2017						
Atlas African Industries Ltd Gems	2018						
B.O.C Kenya Plc	2014	0.0998	343.2362	21.56	2.1390	9.21	15.39
B.O.C Kenya Plc	2015	0.0640	556.5543	21.57	2.0635	9.21	15.41
B.O.C Kenya Plc	2016	0.0570	166.2145	21.52	2.2831	9.21	15.49
B.O.C Kenya Plc	2017	0.0177	40.9771	21.52	1.9539	9.21	15.49
B.O.C Kenya Plc	2018	0.0306	41.9559	21.48	1.8836	9.10	15.64
Bamburi Cement Ltd	2014	0.0952	51.3553	24.44	2.2968	9.39	16.12
Bamburi Cement Ltd	2015	0.1397	97.8667	24.46	2.3571	9.39	16.12
Bamburi Cement Ltd	2016	0.1443	128.0435	24.43	2.6966	9.31	16.21
Bamburi Cement Ltd	2017	0.0418	78.9200	24.58	1.6608	9.39	16.12
Bamburi Cement Ltd	2018	0.0122	3.1168	24.64	1.3206	9.39	16.21
Barclays Bank of Kenya Ltd	2014	0.0371	2.5133	26.14	1.1888	9.31	16.76
Barclays Bank of Kenya Ltd	2015	0.0349	1.7233	26.21	1.2001	9.31	16.81
Barclays Bank of Kenya Ltd	2016	0.0285	1.4508	26.28	1.1986	9.31	10.43
Barclays Bank of Kenya Ltd	2017	0.0255	1.2898	26.33	1.2008	9.10	17.50
Barclays Bank of Kenya Ltd	2018	0.0228	1.0491	26.51	1.2040	9.31	17.28
Bk Group Plc	2014	0.0380	1.4474	24.70	1.3126	8.99	15.25
Bk Group Plc	2015	0.0365	1.4922	24.85	1.2871	8.99	15.38
Bk Group Plc	2016	0.0325	1.2537	24.97	1.2967	8.85	16.49

Bk Group Plc	2017	0.0321	1.2748	25.11	1.1266	8.99	15.54
Bk Group Plc	2018	0.0312	1.5037	25.29	1.2207	8.99	16.16
Britam Holdings Plc	2014	0.0345	7.1309	25.01	0.6814	9.10	17.32
Britam Holdings Plc	2015	(0.0130)	(1.2584)	25.08	0.6158	9.10	16.98
Britam Holdings Plc	2016	0.0297	2.1068	25.15	0.6663	9.21	17.09
Britam Holdings Plc	2017	0.0053	0.4447	25.32	0.4270	9.21	17.21
Britam Holdings Plc	2018	(0.0213)	(2.4408)	25.36	0.4636	9.21	17.33
British American Tobacco Kenya Plc	2014	0.2331	15.7730	23.63	1.2491	9.21	16.07
British American Tobacco Kenya Plc	2015	0.2664	14.6573	23.65	1.4512	9.21	16.12
British American Tobacco Kenya Plc	2016	0.2622	14.9432	23.64	1.4132	9.21	16.09
British American Tobacco Kenya Plc	2017	0.1889	6.7829	23.59	1.3238	9.21	16.09
British American Tobacco Kenya Plc	2018	0.2303	11.5905	23.60	1.6657	9.10	16.31
Car & General (K) Ltd	2014	0.0341	1.0028	22.82	1.1994	8.85	15.79
Car & General (K) Ltd	2015	0.0141	0.3444	22.92	1.0562	8.85	15.91
Car & General (K) Ltd	2016	0.0092	0.2263	23.00	1.0054	8.85	16.04
Car & General (K) Ltd	2017	0.0086	0.1959	22.95	1.0299	8.85	16.04
Car & General (K) Ltd	2018	0.0222	0.6391	23.04	0.9903	8.85	16.22
Carbacid Investments Ltd	2014	0.1937		21.65	6.2963	8.52	14.93
Carbacid Investments Ltd	2015	0.1327		21.81	4.5106	8.52	15.01
Carbacid Investments Ltd	2016	0.1219		21.85	7.0885	8.52	15.14
Carbacid Investments Ltd	2017	0.1065		21.92	7.0132	8.52	
Carbacid Investments Ltd	2018	0.0886		21.94	9.4280	8.52	
Centum Investment Co Plc	2014	0.1032	6.5097	24.11	0.5829	9.10	15.46
Centum Investment Co Plc	2015	0.1100	7.9556	25.00	1.8243	9.10	15.87
Centum Investment Co Plc	2016	0.1274	3.2331	25.08	2.7008	9.10	17.08

Centum Investment Co Plc	2017	0.0940	4.0688	25.20	1.4874	9.31	17.43
Centum Investment Co Plc	2018	0.0290	1.0848	25.29	1.7548	9.21	17.87
CIC Insurance Group Ltd	2014	0.0459	7.2563	23.89	1.5129	9.39	15.68
CIC Insurance Group Ltd	2015	0.0456	1.7486	23.94	1.4293	9.39	16.07
CIC Insurance Group Ltd	2016	0.0070	0.2895	24.01	1.2539	9.47	16.15
CIC Insurance Group Ltd	2017	0.0157	0.7361	24.14	1.2143	9.39	16.58
CIC Insurance Group Ltd	2018	0.0190	0.9621	24.22	0.5454	9.39	16.81
Crown Paints Kenya Plc	2014	0.0051	0.2243	22.07	1.1464	8.85	16.04
Crown Paints Kenya Plc	2015	0.0068	0.1977	22.24	1.1065	8.85	16.16
Crown Paints Kenya Plc	2016	0.0261	0.6284	22.34	1.1635	8.85	16.18
Crown Paints Kenya Plc	2017	0.0380	1.0674	22.49	1.1905	8.85	16.21
Crown Paints Kenya Plc	2018	0.0336	0.6683	22.42	1.0129	8.70	16.22
Deacons (East Africa) Plc	2014	0.0313	1.0187	21.40	2.8984	8.70	15.70
Deacons (East Africa) Plc	2015	0.0458	1.4325	21.63	2.9022	8.70	15.62
Deacons (East Africa) Plc	2016	(0.1211)	(3.1040)	21.55	1.6445	8.70	15.44
Deacons (East Africa) Plc	2017	(0.5419)	(9.4549)	21.16	0.8003	8.85	15.51
Deacons (East Africa) Plc	2018	0.0312	0.8495	26.08	1.2232	8.85	16.57
Diamond Trust Bank Kenya Ltd	2014	0.0237	0.6503	26.33	1.2718	9.31	16.60
Diamond Trust Bank Kenya Ltd	2015	0.0248	0.6102	26.52	1.2194	9.39	16.68
Diamond Trust Bank Kenya Ltd	2016	0.0191	0.4951	26.62	1.1994	9.39	16.78
Diamond Trust Bank Kenya Ltd	2017	0.0188	0.4967	26.66	1.1992	9.39	16.93
Diamond Trust Bank Kenya Ltd	2018						
E.A.Cables Ltd	2014	0.0432	11.2176	22.79	1.1679	8.99	15.83
E.A.Cables Ltd	2015	(0.0884)	(5.9284)	22.85	0.9334	8.99	15.86
E.A.Cables Ltd	2016	(0.0772)	(2.2507)	22.74	0.6717	8.99	15.90
E.A.Cables Ltd	2017	(0.0942)	(1.2435)	22.67	0.4379	8.99	15.80
E.A.Cables Ltd	2018	(0.0861)	(1.1129)	22.61	0.2577	9.10	16.97
E.A.Portland Cement Co. Ltd	2014	(0.0246)	(1.2270)	23.48	0.9464	8.70	15.85
E.A.Portland Cement Co. Ltd	2015	0.3097	20.7995	23.86	0.8385	8.85	15.88

E.A.Portland Cement Co. Ltd	2016	0.1489	8.0523	24.05	0.4262	8.85	16.00
E.A.Portland Cement Co. Ltd	2017	(0.0538)	(2.6531)	24.03	0.3146	8.85	16.00
E.A.Portland Cement Co. Ltd	2018	0.2051	14.4755	24.36	0.2484	8.99	15.98
Eaagads Ltd	2014	(0.0935)		19.92	0.8699	8.29	
Eaagads Ltd	2015	0.0138		19.88	9.1442	8.29	
Eaagads Ltd	2016	0.0006		20.45	5.7284	8.29	
Eaagads Ltd	2017	(0.0690)		20.62	8.7744	8.29	13.80
Eaagads Ltd	2018	0.0028	2.4808	20.66	6.9825	8.29	13.79
East African Breweries Ltd	2014	0.1091	1.5789	24.86	0.7213	9.39	17.19
East African Breweries Ltd	2015	0.1470	2.1696	24.90	1.0229	9.31	17.40
East African Breweries Ltd	2016	0.1663	2.1492	24.85	0.7707	9.62	17.33
East African Breweries Ltd	2017	0.1277	2.6156	24.92	1.0069	9.39	17.49
East African Breweries Ltd	2018	0.1018	2.2092	24.99	0.8349	9.47	17.49
Equity Group Holdings Plc	2014	0.0498	2.7731	26.57	1.3053		17.11
Equity Group Holdings Plc	2015	0.0405	1.8734	26.78	1.1518	9.21	17.53
Equity Group Holdings Plc	2016	0.0350	1.6558	26.88	1.0424	9.21	17.58
Equity Group Holdings Plc	2017	0.0361	1.7450	26.99	1.3036	9.21	17.62
Equity Group Holdings Plc	2018	0.0346	1.6789	27.07	1.2603	9.21	17.67
Eveready East Africa Ltd	2014	(0.1909)	(4.3700)	20.65	1.3339	8.99	14.44
Eveready East Africa Ltd	2015	(0.1511)	(4.0088)	21.01	0.8696	8.99	14.42
Eveready East Africa Ltd	2016	(0.1907)	(2.8535)	20.80	0.4538	8.99	14.51
Eveready East Africa Ltd	2017	0.3458	27.4418	20.47	2.6948	8.70	
Eveready East Africa Ltd	2018	(0.2029)	(255.8132)	20.17	2.5325	8.85	
Express Kenya Ltd	2014	(0.0383)	(1.3190)	19.98	0.5926	8.52	14.50
Express Kenya Ltd	2015	(0.1360)	(3.5675)	19.91	1.1256	8.52	14.47
Express Kenya Ltd	2016	(0.2554)	(5.6915)	19.75	0.8521	8.52	14.47
Express Kenya Ltd	2017	(0.2510)	(7.2745)	19.70	0.5974	8.52	14.37
Express Kenya Ltd	2018	(0.2171)	(6.5444)	19.59	0.6187	8.29	14.37
Flame Tree Group Holdings Ltd	2014	0.1452	3.1307	20.78	1.5540	8.52	14.87

Flame Tree Group Holdings Ltd	2015	0.1348	6.0279	21.01	1.6410	8.52	15.29
Flame Tree Group Holdings Ltd	2016	0.0953	2.7766	21.14	1.5305	8.52	15.26
Flame Tree Group Holdings Ltd	2017	0.0237	0.7978	21.24	1.2907	8.52	15.56
Flame Tree Group Holdings Ltd	2018	0.0184	0.5712	21.33	1.1436	8.52	15.47
HF Group Plc	2014	0.0160	0.2919	24.83	1.0755	9.10	16.10
HF Group Plc	2015	0.0167	0.2668	25.00	1.3215	8.85	16.28
HF Group Plc	2016	0.0126	0.1938	25.00	1.2609	9.10	16.35
HF Group Plc	2017	0.0051	0.0750	24.83	1.1283	9.10	16.37
HF Group Plc	2018	(0.0095)	(0.1700)	24.94	1.1173	9.21	16.42
Home Afrika Ltd	2014	0.0024	0.7121	22.04	1.1845	9.55	15.09
Home Afrika Ltd	2015	(0.1010)	(2.9392)	22.07	0.9777	8.85	15.09
Home Afrika Ltd	2016	(0.0429)	(1.3886)	22.09	0.8052	8.85	15.09
Home Afrika Ltd	2017	(0.0405)	(2.1044)	22.22	0.7873	8.85	15.55
Home Afrika Ltd	2018	(0.0769)	(2.1547)	22.23	0.6881	8.85	12.65
I&M Holdings Plc	2014	0.0381	0.7867	25.65	1.0009	9.10	16.19
I&M Holdings Plc	2015	0.0373		25.98	1.2575	9.10	
I&M Holdings Plc	2016	0.0357	0.7922	25.93	1.3060	9.10	
I&M Holdings Plc	2017	0.0283	0.7147	26.03	1.2511	9.21	16.17
I&M Holdings Plc	2018	0.0267	0.7212	26.24	1.2082	9.31	16.02
Jubilee Holdings Ltd	2014	0.0417	62.3913	25.03	0.8718	9.31	16.80
Jubilee Holdings Ltd	2015	0.0379	89.5296	25.13	0.9246	9.31	17.12
Jubilee Holdings Ltd	2016	0.0406		25.23	0.9596	9.31	16.96
Jubilee Holdings Ltd	2017	0.0403	1,484.8403	25.38	0.9681	9.21	17.26
Jubilee Holdings Ltd	2018						
Kakuzi Plc	2014	0.0415	20.3694	22.07	6.6570	8.99	15.57
Kakuzi Plc	2015	0.1158	425.8975	22.24	4.1442	8.99	15.64
Kakuzi Plc	2016	0.1113	412.3350	22.34	4.8936	8.99	15.68
Kakuzi Plc	2017	0.1030	428.7268	22.47	3.9021	8.99	15.57
Kakuzi Plc	2018	0.0811		22.51	5.9414	8.99	15.62
Kapchorua Tea Co. Ltd Ord	2014	0.0653	145.9919	21.38	5.1013	8.85	14.41
Kapchorua Tea Co. Ltd Ord	2015	(0.0115)	(4.4502)	21.41	5.6295	8.99	14.24
Kapchorua Tea Co. Ltd Ord	2016	0.1006	483.1381	21.57	4.2218	8.85	14.24
Kapchorua Tea Co. Ltd Ord	2017	(0.0255)	(212.1680)	21.43	3.4628	8.85	14.26
Kapchorua Tea Co. Ltd Ord	2018	0.0669	200.9722	21.64	2.9197	8.85	14.26
KCB Group Plc	2014	0.0344	1.4617	26.92	1.0416	9.39	17.37
KCB Group Plc	2015	0.0352	1.1443	27.05	1.1884	9.39	17.48
KCB Group Plc	2016	0.0331	1.2500	27.11	1.2156	9.21	17.55
KCB Group Plc	2017	0.0305	1.2889	27.20	1.1926	9.21	17.55
KCB Group Plc	2018	0.0336	1.3751	27.29	1,194.8012	9.21	17.62

Kengen Co. Plc	2014	0.0113	1.0923	26.25	1.0966	9.55	15.45
Kengen Co. Plc	2015	0.0336	3.8255	26.56	0.9506	9.47	15.60
Kengen Co. Plc	2016	0.0184	2.1530	26.63	1.2049	9.47	15.79
Kengen Co. Plc	2017	0.0239	2.6354	26.65	1.4751	9.47	15.89
Kengen Co. Plc	2018	0.0208	2.5977	26.66	1.5044	9.47	15.89
Kenolkobil Ltd	2014	0.0456	0.8998	23.90	0.9502	8.70	16.99
Kenolkobil Ltd	2015	0.1160	3.0936	23.58	1.2374	8.70	17.12
Kenolkobil Ltd	2016	0.0997	6.8037	23.91	1.2576	8.70	16.53
Kenolkobil Ltd	2017	0.1023	7.2342	23.91	1.4404	8.70	16.66
Kenolkobil Ltd	2018						
Kenya Airways Ltd	2014	(0.0228)	(1.3952)	25.72	0.4648	9.39	16.30
Kenya Airways Ltd	2015	(0.1414)	(5.4379)	25.93	0.5021	9.55	16.38
Kenya Airways Ltd	2016	(0.1684)	(3.7257)	25.77	0.4073	9.21	16.45
Kenya Airways Ltd	2017	(0.0698)	(1.3925)	25.71	0.3751	9.21	16.52
Kenya Airways Ltd	2018	(0.0553)	(1.4931)	25.64	0.2160	9.47	16.52
Kenya Orchards Ltd	2014	0.5032	476.6415	17.73	1.7737	8.29	12.01
Kenya Orchards Ltd	2015	0.3673	146.7817	18.18	2.0757	8.29	
Kenya Orchards Ltd	2016	0.0422	9.1114	18.31	2.0214	8.29	
Kenya Orchards Ltd	2017	0.0530	10.8208	18.50	1.7132	8.29	
Kenya Orchards Ltd	2018	0.0776	9.8079	18.56	2.1139	8.29	
Kenya Power & Lighting Co	2014	0.0338	1.8574	26.12	1.0320	9.39	16.45
Kenya Power & Lighting Co	2015	0.0273	1.4969	26.33	1.4488	9.31	16.62
Kenya Power & Lighting Co	2016	0.0254	1.3003	26.42	0.9850	9.31	16.69
Kenya Power & Lighting Co	2017	0.0159	0.8742	26.53	0.7776	9.21	16.54
Kenya Power & Lighting Co	2018	0.0057	0.2457	26.54	0.5140	9.31	16.57
Kenya Re Insurance Corporation Ltd	2014	0.0975		24.19	2.2427	8.99	15.69
Kenya Re Insurance Corporation Ltd	2015	0.0955		24.31	2.0112	9.31	15.77
Kenya Re Insurance Corporation Ltd	2016	0.0878		24.37	1.9981	9.47	16.23
Kenya Re Insurance Corporation Ltd	2017	0.0882		24.48	2.2932	9.39	15.99

Kenya Re Insurance Corporation Ltd	2018	0.0498		24.52	2.3649	9.31	16.27
Kurwitu Ventures Ltd	2014						
Kurwitu Ventures Ltd	2015						
Kurwitu Ventures Ltd	2016						
Kurwitu Ventures Ltd	2017	(0.0771)		18.76	3.0100	8.85	
Kurwitu Ventures Ltd	2018	(0.0390)		18.74	0.6385	8.85	
Liberty Kenya Holdings Ltd	2014						
Liberty Kenya Holdings Ltd	2015						
Liberty Kenya Holdings Ltd	2016	0.0180		24.28	0.3583	8.85	16.91
Liberty Kenya Holdings Ltd	2017	0.0228		24.34	0.3101	8.85	17.05
Liberty Kenya Holdings Ltd	2018	0.0150		24.32	0.3702	8.70	16.96
Longhorn Publishers Plc	2014	0.1261		20.44	1.7404	8.99	14.95
Longhorn Publishers Plc	2015	0.1041		20.35	1.5002	9.10	15.04
Longhorn Publishers Plc	2016	0.0557	3.2039	21.35	1.4880	9.10	15.66
Longhorn Publishers Plc	2017	0.0721	2.2867	21.34	1.3700	9.10	15.90
Longhorn Publishers Plc	2018	0.0763	2.3414	21.60	1.2090	9.31	16.28
Mumias Sugar Co. Ltd	2014	(0.1149)	(4.4263)	23.88	0.4093	9.31	15.72
Mumias Sugar Co. Ltd	2015	(0.2276)	(5.5361)	23.74	0.1865	9.39	15.53
Mumias Sugar Co. Ltd	2016	(0.1775)	(5.2224)	24.01	0.1807	9.39	15.65
Mumias Sugar Co. Ltd	2017	(0.2812)	(4.6775)	23.91	0.1093	9.55	15.46
Mumias Sugar Co. Ltd	2018	(0.9622)	(19.6994)	23.48	0.0290	9.31	
Nairobi Business Ventures Ltd	2014	0.0978	5.1260	18.19	1.9766	8.52	11.00
Nairobi Business Ventures Ltd	2015	0.0245	0.2430	18.53	1.9839	8.52	11.00
Nairobi Business Ventures Ltd	2016	0.0285	0.3950	18.86	2.7346	8.52	11.00
Nairobi Business Ventures Ltd	2017	(0.2286)	(7.3832)	18.78	2.9902	8.52	11.00
Nairobi Business Ventures Ltd	2018						

Nairobi Securities Exchange Plc	2014	0.1899	22.3962	21.25	6.1325	8.99	14.46
Nairobi Securities Exchange Plc	2015	0.1593		21.37	7.0334	8.99	15.00
Nairobi Securities Exchange Plc	2016	0.0914		21.42	7.3292	9.31	15.22
Nairobi Securities Exchange Plc	2017	0.1026		21.47	12.0482	9.31	15.23
Nairobi Securities Exchange Plc	2018	0.0860		21.52	9.4962	9.31	15.27
Nation Media Group Ltd	2014	0.2060	212.1121	23.20	2.3651	9.68	16.93
Nation Media Group Ltd	2015	0.1751	267.7952	23.26	2.0954	9.68	14.65
Nation Media Group Ltd	2016	0.1387	804.2381	23.22	2.0727	9.80	17.03
Nation Media Group Ltd	2017	0.1158		23.15	2.0176	9.80	17.07
Nation Media Group Ltd	2018	0.0998		23.14	1.9536	9.80	17.06
National Bank of Kenya Ltd	2014	0.0071	0.2233	25.54	1.0609	9.10	16.10
National Bank of Kenya Ltd	2015	(0.0092)	(0.1972)	25.55	1.0444	8.99	16.19
National Bank of Kenya Ltd	2016	0.0006	0.0165	25.44	0.9920	8.99	
National Bank of Kenya Ltd	2017	0.0037	0.1262	25.42	1.0031	8.99	
National Bank of Kenya Ltd	2018	0.0001	0.0024	25.47	0.9942	8.99	
New Gold Etf	2014						
New Gold Etf	2015						
New Gold Etf	2016						
New Gold Etf	2017	0.0028		24.55	1.0031	8.52	13.74
New Gold Etf	2018	0.0030		24.32	1.0032	8.52	13.76
NIC Group Plc	2014	0.0282	0.7206	25.71	1.3215	9.39	16.39
NIC Group Plc	2015	0.0271	0.6168	25.83	1.3044	9.47	16.91
NIC Group Plc	2016	0.0256	0.6320	25.86	1.3770	9.39	16.97
NIC Group Plc	2017	0.0201	0.5423	26.05	1.2919	9.55	17.20
NIC Group Plc	2018	0.0203	0.4851	26.06	1.2696	9.10	16.82
Olympia Capital Holdings Ltd	2014	0.0293	1.6231	21.15	1.1689	9.10	15.21
Olympia Capital Holdings Ltd	2015	(0.0193)	(1.0994)	21.15		9.10	15.43
Olympia Capital Holdings Ltd	2016	0.0092	1.3234	21.20	2.3857		15.04
Olympia Capital Holdings Ltd	2017	0.0241	1.6253	21.20	1.7464	8.52	15.19
Olympia Capital Holdings Ltd	2018	(0.0021)	(0.1720)	21.22	1.7807	8.52	15.06
Safaricom Plc	2014	0.1710	15.3980	25.63	0.7663	9.31	17.37
Safaricom Plc	2015	0.2031	29.7005	25.78	0.6245	9.31	17.48
Safaricom Plc	2016	0.2394	45.4620	25.79	0.6517	9.39	17.58

Safaricom Plc	2017	0.2996	52.9452	25.81	0.4642	9.31	17.69
Safaricom Plc	2018	0.3302	84.6692	25.84	0.6309	9.31	17.71
Sameer Africa Plc	2014	(0.0174)	(1.2734)	22.07	2.5238	8.70	15.59
Sameer Africa Plc	2015	(0.0042)	(0.3802)	22.05	2.2050	8.70	15.65
Sameer Africa Plc	2016	(0.1982)	(15.3259)	21.91	1.5805	8.85	15.86
Sameer Africa Plc	2017	0.0044	0.2656	21.81	1.5485	8.99	15.63
Sameer Africa Plc	2018	(0.2045)	(7.6257)	21.67	0.9038	8.99	15.76
Sanlam Kenya Plc	2014	0.0354		23.93	1.1471	9.74	15.56
Sanlam Kenya Plc	2015	0.0010		24.02	1.0586	9.10	16.07
Sanlam Kenya Plc	2016						
Sanlam Kenya Plc	2017	0.0018		24.12	0.2478	8.99	16.28
Sanlam Kenya Plc	2018	(0.0680)	(10.3169)	24.09	0.2561	8.99	16.44
Sasini Plc	2014	0.0030	3.4982	23.43	2.3280	9.21	15.86
Sasini Plc	2015	0.0686	157.6313	23.50	4.4016	8.99	15.92
Sasini Plc	2016	0.0453	251.6017	23.55	4.8829	9.10	16.11
Sasini Plc	2017	0.0257	30.8580	23.30	4.2407	9.21	16.30
Sasini Plc	2018	0.0226	56.8182	23.29	5.7625	9.10	16.37
Stanbic Holdings Plc	2014	0.0314	1.7880	25.92	1.2160	9.47	16.54
Stanbic Holdings Plc	2015	0.0237	0.8555	26.01	1.1928	9.47	16.38
Stanbic Holdings Plc	2016	0.0216	0.5356	26.05	1.1739	9.31	16.42
Stanbic Holdings Plc	2017	0.0181	0.7226	26.20	1.1542	9.21	16.84
Stanbic Holdings Plc	2018	0.0220	0.8617	26.36	1.1470	9.31	16.85
Standard Chartered Bank Kenya Ltd	2014	0.0469	2.3494	26.13	1.1876	9.10	16.51
Standard Chartered Bank Kenya Ltd	2015	0.0271	1.2667	26.18	1.1817	9.10	16.51
Standard Chartered Bank Kenya Ltd	2016	0.0361	1.3613	26.25	1.1894	9.39	16.54
Standard Chartered Bank Kenya Ltd	2017						
Standard Chartered Bank Kenya Ltd	2018						
Standard Group Plc	2014	0.0538	1.8622	22.13	1.2192	8.99	15.26
Standard Group Plc	2015	(0.0665)	(1.7698)	22.19	0.9537	8.99	15.35
Standard Group Plc	2016	0.0451	0.8494	22.21	1.1693	8.99	15.44
Standard Group Plc	2017	(0.0473)	(1.1645)	22.22	0.8469	9.31	15.53
Standard Group Plc	2018	0.0559	1.5568	22.27	0.9120	9.10	15.55

Stanlib Fahari I-Reit	2014						
Stanlib Fahari I-Reit	2015						
Stanlib Fahari I-Reit	2016	0.0285	4.5350	22.04	9.8500	8.99	16.52
Stanlib Fahari I-Reit	2017	0.0455		22.05	13.5940	8.99	13.30
Stanlib Fahari I-Reit	2018	0.0502		22.07	3.4332	8.99	
The Co-Operative Bank of Kenya Ltd	2014	0.0281	0.9924	26.38	1.2172	9.39	16.42
The Co-Operative Bank of Kenya Ltd	2015	0.0342	0.8615	26.56	1.2118	9.39	16.57
The Co-Operative Bank of Kenya Ltd	2016	0.0360	0.9928	26.59	1.2554	9.39	16.66
The Co-Operative Bank of Kenya Ltd	2017	0.0295	0.9296	26.68	1.2893	9.39	16.74
The Co-Operative Bank of Kenya Ltd	2018	0.0308	1.0402	26.75	1.2592	9.39	16.86
The Limuru Tea Co. Plc	2014	(0.0010)		19.64	8.0832	8.29	
The Limuru Tea Co. Plc	2015	0.0081		19.56	5.8029	8.29	12.17
The Limuru Tea Co. Plc	2016	(0.0676)		19.46	5.1654	8.29	11.70
The Limuru Tea Co. Plc	2017	(0.0845)		19.38	3.5568	8.85	12.51
The Limuru Tea Co. Plc	2018	0.0095		19.41	3.5021	8.85	14.19
Total Kenya Ltd Ord	2014	0.0438	5.2292	24.21	1.4882	9.31	15.62
Total Kenya Ltd Ord	2015	0.0472	40.9608	24.26	1.5252	9.31	15.60
Total Kenya Ltd Ord	2016	0.0617	83.2635	24.31	1.6470	9.31	15.70
Total Kenya Ltd Ord	2017	0.0720	50.2241	24.36	1.7341	9.21	15.78
Total Kenya Ltd Ord	2018	0.0589	20.0137	24.39	1.7697	9.21	15.83
Tps Eastern Africa Ltd	2014	0.0064	0.5594	23.49	0.8038	9.47	16.62
Tps Eastern Africa Ltd	2015	0.0147	1.3517	24.21	1.0404	9.31	16.67
Tps Eastern Africa Ltd	2016	0.0044	0.4029	23.56	1.6400	9.39	16.80
Tps Eastern Africa Ltd	2017	0.0097	1.1396	23.58	1.0788	9.39	16.68

Tps Eastern Africa Ltd	2018	0.0021	0.2902	23.59	0.4338	9.39	16.73
Trans-Century Plc	2014	(0.1170)	(8.1945)	23.69	1.5950	8.99	17.43
Trans-Century Plc	2015	(0.1110)	(3.0618)	23.81	0.6298	8.52	17.51
Trans-Century Plc	2016	(0.0457)	(1.3955)	23.66	0.5036	8.99	17.61
Trans-Century Plc	2017	(0.0403)	(9.9179)	23.65	0.4049	8.99	
Trans-Century Plc	2018	(0.0108)	(2.2247)	23.54	0.2531	8.99	
Uchumi Supermarket Plc	2014	0.0527	5.6361	22.66	0.5740	8.85	16.79
Uchumi Supermarket Plc	2015	(0.5574)	(10.4601)	22.56	0.3431	9.39	16.59
Uchumi Supermarket Plc	2016	(0.5671)	(6.9000)	22.33	0.2587	9.39	16.56
Uchumi Supermarket Plc	2017						
Uchumi Supermarket Plc	2018						
Umeme Ltd	2014	0.0582	3.1420	23.22	1.0341	9.21	15.61
Umeme Ltd	2015	0.0596	1.9203	23.60	1.0141	8.99	15.68
Umeme Ltd	2016	0.0455	1.4393	23.81	0.8113	9.47	15.85
Umeme Ltd	2017	0.0151	0.3636	23.88	0.6027	9.21	15.94
Umeme Ltd	2018	0.0539	2.2336	23.93	0.4468	9.21	15.99
Unga Group Ltd	2014	0.0591	18.2477	22.81	2.2713	8.99	16.21
Unga Group Ltd	2015	0.0717	2.7438	22.88	2.3685	8.99	16.16
Unga Group Ltd	2016	0.0553	9.0350	22.94	2.2986	9.10	16.30
Unga Group Ltd	2017	(0.0031)	(0.4197)	23.05	1.6392	8.99	16.43
Unga Group Ltd	2018	0.0780	8.5293	23.02	2.1418	9.10	16.49
Williamson Tea Kenya Ltd	2014	0.0866	65.8887	22.87	8.4679	8.99	15.91
Williamson Tea Kenya Ltd	2015	(0.0266)	(11.4823)	22.87	8.5849	8.99	15.91
Williamson Tea Kenya Ltd	2016	0.0796	37.5189	22.95	4.9084	8.85	15.91
Williamson Tea Kenya Ltd	2017	(0.0313)	(16.6556)	22.85	3.4721	8.85	15.99
Williamson Tea Kenya Ltd	2018	0.0529	43.1673	22.98	2.9855	8.85	15.72
Wpp Scangroup Plc	2014	0.0471		23.31	2.4602	8.70	17.08
Wpp Scangroup Plc	2015	0.0384		23.25	2.7557	8.70	17.35
Wpp Scangroup Plc	2016	0.0341		23.32	2.3779	8.85	17.32
Wpp Scangroup Plc	2017	0.0347		23.34	2.2816	8.85	17.25
Wpp Scangroup Plc	2018	0.0424		23.39	2,069.7755	9.10	17.31