EFFECT OF FINANCIAL STRUCTURE ON FINANCIAL PERFORMANCE OF FIRMS LISTED AT EAST AFRICA SECURITIES EXCHANGES

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DOCTOR OF PHILOSOPHY

(Business Administration)

JOMO KENYATTA UNIVERSITY OF

AGRICULTURE AND TECHNOLOGY

2016

Effect of Financial Structure on Financial Performance of Firms Listed at East Africa Securities Exchanges

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A Thesis Submitted in Partial Fulfillment for the Degree of Doctor of Philosophy in Business Administration in the Jomo Kenyatta University of Agriculture and Technology

2016

DECLARATION

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

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DEDICATION

This work is dedicated to all who may have contributed in one way or the other to my achievement so far. Special dedication however to my mum, wife Martha and son Levi for both financial and moral support.

ACKNOWLEDGEMENT

The reality of this enormous task could not have been achieved were it not for the almighty God and a number of persons who I honour and respect. My most sincere gratitude first goes to my supervisors Dr. Willy Muturi and Dr. Patrick Ngumi for their unquantifiable support and encouragement even in times of desperation. Second is to all my other lecturers at JKUAT for their value addition during the course. Last but not least is to my PhD colleagues who offered their moral capital through the journey.

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ABBREVIATIONS AND ACRONYMS

DSE   Dar es Salaam Securities Exchange

E   Equity to total assets

EA   East Africa

EAC   East Africa Community

EADB   East Africa Development Bank

EASE   East Africa Securities Exchanges

EBIT   Earnings before Interest and Tax

EU   European Union

FGLS   Feasible Generalized Least Squares

GDP   Gross Domestic Product

GSE   Ghana Stocks Exchange

HKSE   Hong Kong Stock Exchange

IRR   Internal Rate of Return

KCB   Kenya Commercial Bank.

KIPPRA   Kenya Institute for Public Policy Research and Analysis

LD   Long term debt to total assets

MM   Modigliani and Miller

MTP	Medium Term Plan
NASI	Nairobi All Share Index
NSE	Nairobi Securities Exchange
PCSE	Panel Corrected Standard Errors
RE	Retained earnings to total assets
ROA	Return on assets
ROE	Return on equity
RSE	Rwanda Securities Exchange
SD	Short term debt to total assets
Sh	Kenya Shilling
SMEs	Small and Medium Enterprises
SOA	Speed of Adjustment
TC	Total capital to total assets
Tsh	Tanzania Shilling
USA	United States of America
USE	Uganda Securities Exchange
Ush	Uganda Shilling
VIF	Variance Inflation Factor

DEFINITION OF KEY TERMS

Capital Structure   This refers to how a firm finances its assets with long term debt, preferred stock and common equity (Moyer, McGuigan & Kretlow, 1999). Simply put, it is the long term sources of debt and equity financing.

Financial Performance This is the process of measuring the results of a firm's policies and operations in monetary terms (Erasmus, 2008).

Financial Structure   This refers to how a firm finances its assets with all its available resources, whether short term or long term. It is therefore capital structure plus a firm's non-interest bearing liabilities like accounts payables and accruals (Moyer et. al, 1999).

Speed of Adjustment   This is the percentage of the deviation from the target capital structure that the firms remove in each period (Abdeljawad, Nor, Ibrahim & Rahim, 2013).

Working Capital Management Refers to investment in current assets and current liabilities which are liquidated within a year or less (Kesimli & Gunay, 2011).

ABSTRACT

Among other factors, the choice of financial structure and mismanagement has led to corporate failure of firms' world over particularly in East Africa. While mismanagement is being aggressively addressed through ethical code of conduct and even thresholds on managers control in firms, financial structure choice and its impact on financial performance remains a great dilemma to all stakeholders. This study therefore investigated the effect of financial structure and financial performance of listed firms at the East Africa Securities Exchanges. Specifically, it evaluated the effect of short term debt, long term debt, retained earnings and other shareholders funds on financial performance. In addition it assessed the moderating effect of gross domestic product growth rate on the effect of financial structure on the effect of financial structure on financial performance of the said firms. The study employed causal or explanatory research design with secondary panel data from the financial statements of 61 firms retrieved from the securities exchanges hand books for the period December 2006-2014. Feasible Generalized Least Squares method, random effect for models without moderator and fixed effect for models with moderator, based on Hausman specification test were used. The study found out that in isolation, short term debt, long term debt, retained earnings and external equity had insignificant negative effect on return on assets but insignificant positive effect on return on equity. While combined, financial structure had a significant positive and negative effect on return on equity and return on assets respectively. On the moderating effect of gross domestic product growth rate on the effect of financial structure on financial performance, it was found out that the coefficient of determination increased by 9.2% for return on asset model and 26.85% for return on equity model when gross domestic product growth rate was introduced. It was therefore concluded that gross domestic product growth rate had indeed a significant moderating effect. In addition, short term financing was found to be the preferred choice of financing though equity financing generally contributed more to financial performance. The study therefore concluded that pecking order theory may not be applicable in practice, at least at East Africa Securities Exchanges. The fact that different

markets demonstrated different hierarchy of preference of financial sources, it is recommended that firms should look at and evaluate the political, economic, social and technological environment within their markets before making decision on the mode of raising finance. It is also recommended that firms use shareholders' funds before borrowing, the East Africa Community fasten the integration process to tap the much needed foreign capital and aspire to expand and maintain their gross domestic products since they have contingent effect on financial structure.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The determination of a firm's optimal financial structure is a difficult one since it involves an analysis of several factors, key among them risk and profitability (Shubita & Alsawalhah, 2012). The decision becomes even more difficult, in times when the economic, social, technological and political environments in which the firm operates exhibits high degree of instability (Shubita & Alsawalhah, 2012). Therefore, the choice among ideal proportion of debt and equity can affect the value of the company, as well as financial performance. Indeed, Chiang, Chan and Hui (2002) study at Hong Kong Stock Exchange (HKSE) concluded that financial performance as measured by profitability and capital structure, a subset of financial structure, are interrelated. Many firms therefore fail for not putting proper strategies, financial among others, in place.

Factors contributing to business failure can be addressed through proper strategies to drive growth and achievement of organizational objectives (Salazar, Soto & Mosqueda, 2012). It is necessary and sufficient that proper care and attention be given while making financial structure decision option otherwise that can cause financial distress (Singh & Faircloth, 2005). Options could be several but to decide the best in firm's interest in a particular scenario needs somebody to have a deep understanding in the field of finance to critically analyse the impact of the available options on the firm's performance.

For instance while some researchers like Gill, Nahum and Neil (2011) have put it that use of more proportion of debt in capital structure can be effective as it is less costly and has a positive relationship with profitability (a proxy for financial performance) than equity others like Ishaya and Abduljeleel (2014) have argued that equity capital is preferred. This argument therefore requires that the decision maker have good finance

knowledge to be able to analyse and make prudent judgment on which way to follow or even the need to hybrid the two arguments.

1.1.1 Financial Structure

Financial structure of a firm refers to how a firm finances its assets with all its available resources (Moyer, McGuigan & Kretlow, 1999). In general, firms finance only a part of their assets with equity (ordinary, preference and retained earnings) capital , while the other part is financed by other resources such as long term financial debt or liabilities (like bonds, bank loans and other loans) and other short term liabilities for example trade payables (Moyer *et. al.*, 1999). According to Titman, Keown and Martin (2011), financial structure is capital structure plus a firm's non-interest bearing liabilities like accounts payables and accruals. Therefore, Moyer *et al.* (1999) agrees with Titman *et al.* (2011) definition of financial structure that it comprises of both all short term and long term debts.

Capital structure on the other hand refers to how a firm finances its assets with permanent short term debt, long term debt, preferred stock and common equity (Moyer *et al.*, 1999). Titman *et al.* (2011) defines capital structure as owners' equity and interest bearing debt including short term bank loans. Both definitions therefore excludes non-interest bearing short term debt. Other scholars have provided various definitions of financial and capital structure with one thing in common that it is the mix of debt and equity used by firms to finance their operations without regard to the nature of debt. The two terms have therefore been used interchangeably by scholars as inferred from their application, a concept that the researcher wishes to borrow.

According to Abor (2005), capital structure is the mix of debt and equity that the firm uses in its operation and is a mixture of different securities. Firms can choose among many alternative capital structures. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can

also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005). Dare and Sola (2010) refer to capital structure as the debt-equity mix of business finance which is used to represent the proportionate effect of debt and equity in corporate firms' finances. They suggested that capital structure can take any of the following three alternatives: 100% equity: 0% debt, 0% equity: 100% debt or X% equity: Y% debt. Worth noting in their studies is the inclusion of short term debt as a capital structure component and therefore the justification of use of the terms financial and capital structures interchangeably.

On Dare and Sola (2010), Ishaya and Abduljeleel (2014) had the following take on their proposed options. Option one is that of a purely equity financed firm that ignores leverage and its benefits in financing its activities and all the distributions goes to equity providers. This however is rare in practice. Option two is that of a firm that finances its affairs wholly on debt, again unrealistic in the real world situation too because hardly will any provider of fund invest in a business without owners. In essence, it is the equity element present in capital structure that motivates the debt providers to give their scarce resources to the business. Option three is that of a firm combining certain proportion of both equity and debt in its capital structure. It will therefore reap the benefits of combined debt and equity while the cash flows generated are appropriated between equity and debt providers.

The challenge in option three as provided is the dilution of equity ownership and therefore the likelihood of emergence of agency conflict between the equity owners and debt providers (Ishaya & Abduljeleel, 2014). Capital structure decision is therefore very critical and fundamental in the business life cycle not only to maximize shareholders wealth but also due to the impact it has both on sustainability and its ability to satisfy external objectives (Ishaya & Abduljeleel, 2014). Capital structure theory addresses the means of acquisition of finance available to a firm, the best mix of such sources that reduces the overall cost of capital while maximizing returns and the management to achieve the desired objectives (Abor, 2005).

1.1.2 Financial Performance

Financial performance is the process of measuring the results of a firm's policies and operations in monetary terms (Erasmus, 2008). It identifies the financial strengths and weaknesses of a firm by establishing relationships between the items of the financial position and income statement. As noted by Erasmus (2008), profitability, return on equity and liquidity ratios among others provide valuable tools or measures to stakeholders to evaluate the past and current financial performance of a firm. To this end, ratios relating to profitability and financial structure as shown in the data analysis model in chapter three were used.

Many empirical and theoretical studies as discussed in literature have shown that financial structure really influences firm's performance. Berger and Patti (2006) for instance posit that capital structure employed by firms influence their financial performance trends, whose empirical determination and analysis using listed firms in East Africa Securities Exchanges (EASE) is the overall objective of this study.

1.1.3 East Africa Securities Exchanges

The EASE have different histories and trading volumes but the common denominator for all is their existence to mobilize capital to support productive investment programs by firms, diversifying investors' risks, improving the allocation of funds and improve the management of firms through corporate governance standards (Irving, 2005). Securities markets in East Africa (EA) have so far not attracted a significant proportion of the global capital inflows due to challenges like political instability exposure and weak capital base (Irving, 2005).

The securities exchanges are alternative avenues to mobilize funds away from banks which have traditionally dominated the lending market (Irving, 2005).With the East Africa Community (EAC) integration socially and politically, so are the securities exchanges within the economic frontier. Indeed, many firms are currently cross listed

across the exchanges as a pace setter to accelerating integration process. Following is a brief history of the EASE and how they are fast integrating to one Exchange.

According to Nairobi Securities Exchange (NSE) (2015), trading in securities was informal, manual and was purely on a gentleman's agreement until 1950's. In 1954 the Nairobi Stock Exchange, now called NSE was constituted as a voluntary association of stockbrokers registered under the Societies Act. From the first privatization of 20% government stake in Kenya Commercial Bank (KCB) in 1988, NSE has grown in trading volumes, boosted by among others efficient settlement of deals though automated trading system introduced in in September 2006. The market capitalization of the already demutualized (on July 2014) NSE as at the last day of trading in 2014 was over sh. 2.2 Trillion with 64 firms listed. The Nairobi 20-Share Index had as at end of 2014 surpassed the 5000 points mark, an indication of the huge capital mobilization through NSE. Bonds of sh. 494 billion were issued in 2014 up from sh. 253 billion in 2013 (NSE, 2015).

A brief from the Uganda Securities Exchange (USE) (2015) notes that trading started in January 1998 following the listing of the East African Development Bank (EADB) Ush 10 Billion bond. In year 2000, the first equity issue was done by Uganda clays Ltd. USE has now grown to 17 listed firms and also trading in fixed income securities. The Dar es Salaam stock Exchange (DSE) was incorporated in September 1996 and trading started in April 1998 with issue of equity (DSE, 2015). In 1999, first bond was issued. To date, there are 21 listed companies, 5 corporate bonds and 8 government bonds. The market capitalization on 31/12/2014 was Tsh 22, 090.39 billion again signifying the huge capital mobilization at DSE.

The Rwanda Stock Exchange (RSE) started in January 2011, replacing Over the Counter Exchange in existence from 2008, with only Bralirwa stock, a brewery manufacturing firm trading. As at 31/12/2014, 6 firms are listed at RSE with three government and one corporate (Investment &Mortgages (I&M) bank) fixed income securities (RSE, 2015).

Burundi, the other EAC member is currently engaged in constituting its market (NSE, 2015).

The East African Securities Exchanges Association (EASEA) came into being in 2004, following the signing of a Memorandum of Understanding between the DSE, the USE and the NSE (African Securities Exchanges Association (ASEA), 2009). The key objective of EASEA is to oversee the creation of single or integrated and efficient market infrastructure, from the current disenfranchised markets, compatible with other markets globally. This will facilitate mobilization of the much needed capital to unlock the massive EAC development programs ranging from oil and gas exploration, transport and communication infrastructure among others. The expansion of market capitalization will also make the EAC market competitive at the global scene and possibly attract more foreign investors.

1.2 Statement of the Problem

Financing decisions result in a given financial structure and suboptimal financing decisions can lead to corporate failure (Chisti, Ali & Sangmi, 2013). A great dilemma to scholars, business managers, investors among other stakeholders is whether there exists an optimal financial structure that maximizes the stakeholders' wealth, as the core object of firms except public utility providers. Therefore, measuring the quality of any financing decision is to investigate the effect of such a decision on the firm's performance and in particular its impact on financial performance (Gill *et al.*, 2011).

To establish the impact and clear understanding on the effect of financial structure and financial performance of a firm, research has been undertaken by various researchers all over the world particularly on capital structure. For example, in examining the effect of capital structure on profitability of the American service and manufacturing firms, Gill *et al.* (2011) concluded that there exist a positive effect of short-term debt to total assets and profitability and between total debt to total assets and profitability in the service

industry. Abor (2005) investigated the effect of capital structure and profitability of listed firms at the Ghana Stock Exchange (GSE) and found a significant positive relation between the ratio of short-term debt to total assets and return on equity (ROE) and negative effect of the ratio of long-term debt to total assets and ROE.

On the contrary however, Abdul (2012) conducted a research to determine the effect of capital structure decisions and the performance of firms in Pakistan and found that financial leverage has a significant negative relationship with firm's performance, measured by return on assets (ROA). Ebaid (2009) carried out a study in Egypt to investigate the impact of choice of capital structure on the performance as measured by gross profit margin and concluded that capital structure has little or no impact on a firm's performance

In Kenya a few studies has been done and documented even as many firms keenly focus on financial restructuring to avoid delisting or even liquidation. Kaumbuthu (2011) for example carried out a study to determine the effect of capital structure and return on equity for industrial and allied firms at the NSE during the period 2004 to 2008 and found a negative effect of debt to equity ratio and ROE. His study however focused on one predictor variable (debt to equity ratio) which therefore seems simplistic.

To investigate the effect of leverage and the financial performance of listed firms in Kenya, Maina and Kondongo (2013) found a significant negative effect of debt and profitability but no effect on firm value over the period 2002 – 2011. Again, no attempt was made to separate debt into short and long term and analyse their respective contributions which are likely to be different. Like Kaumbuthu (2011), their study focused on one predictor variable too.

In summary, studies on the effect of firm's financial structure and financial performance have yielded mixed results. In EA, available studies to the researcher had not attempted to split equity so as to appreciate the contribution of the retained earnings and share

capital to financial performance separately. No attempt too that the researcher came across splitting the debt into short and long term and analyzing their statistical significance to financial performance or rank the various sources based on the specific's source contribution to financial performance that may even help to validate the pecking order theory in Kenya. Even the working capital studies that the researcher came across had focused more on cash conversion cycle which is not an objective in this study. There were no documented studies that the researcher came across that compare the financial structure and financial performance relationship of firms in EA. As highlighted in the empirical literature review, these studies had shortcomings in their methodological approaches too. It is for this reasons that this study was therefore conducted.

1.3 Research Objective

The general objective was to study the effect of financial structure on financial performance of firms listed at East Africa Securities Exchanges.

1.3.1 Specific Objectives

1. To explore the effect of short term debt on financial performance of firms listed at East Africa Securities Exchanges.
2. To find out the effect of long term debt on financial performance of firms listed at East Africa Securities Exchanges.
3. To assess the effect of retained earnings on financial performance of firms listed at East Africa Securities Exchanges.
4. To determine the effect of share capital on financial performance of firms listed at East Africa Securities Exchanges.
5. To evaluate the moderating effect of GDP growth rate on the effect of financial structure on financial performance of firms listed at East Africa Securities Exchanges.

6. To establish the preferred hierarchy of financial structure sources of firms listed at East Africa Securities Exchanges.

1.4 Research Hypotheses

$H0_1$: There is no significant effect of short-term debt on financial performance of firms listed at East Africa Securities Exchanges.

$H0_2$: There is no significant effect of long-term debt on financial performance of firms listed at East Africa Securities Exchanges.

$H0_3$: There is no significant effect of retained earnings on financial performance of firms listed at East Africa Securities Exchanges.

$H0_4$: There is no significant effect of share capital on financial performance of firms listed at East Africa Securities Exchanges.

$H0_5$: There is no significant moderating effect of GDP growth rate on the effect of financial structure on financial performance of firms listed at East Africa Securities Exchanges.

$H0_6$: There is no preferred hierarchy of financial structure sources by firms listed at East Africa Securities Exchanges.

1.5 Justification of Research.

This study was primarily motivated by the reasons advanced in the problem statement. Its findings also provide theorists, empirical researchers, investors, investment advisors and executives with pertinent information on financial structure and financial performance which will enable them to completely refocus on the concept and its value to the firm as follows:

To theorists and researchers, it provides them with more insights on the effect of financial structure elements and financial performance. It also assist them as a basis in pursuing further research on the same issue particularly with different variables analyzing their economic plausibility and hence eliminating spurious relationships.

To the managers, if a positive effect of financial structure source and financial performance or shareholders value exist, then they might be encouraged to dedicate more time and effort in sourcing and managing such finances. They may also be interested to investigate the underlying causes of the relationship so as to form the basis of resource allocation too.

To the investors, potential and existing, it will assist them make informed decisions on the choice of their investments in an attempt to maximize their returns on their investment portfolios. It will also act as a good way of evaluating the performance of the respective managers and make decisions on their retention. To investment advisors (brokerage firms, investment banks and other professionals), they will enrich their knowledge and understanding in financing decisions to equip them better in advising their clients to make prudent investment decisions that maximizes their returns while minimizing risks.

To the EAC secretariat, it will be in a position to align its economic treaty with reality of the findings and strategize on best way forward in realizing a win-win position to the membership. This is particularly important especially where some countries perceive disadvantaged due to their economic status may renege on ratifying the protocols thereby slowing down the pace for achievement of the much needed single social, economic and political block.

Other existing and emerging economic zones or treaties like European Union (EU) will use the findings as a bases of determining the capital mobilization capability of the

EASE thereby facilitating their informed decisions when trading in the EA region, for instance in times of cross listing their stocks.

1.6 Scope of the Study

The study focused on the listed companies that have traded for at least three consecutive years at the NSE, RSE, DSE and USE for the period December 2006-December 2014. As at closure of business in December 2014 as shown in appendix III, there were 64 listed firms at the NSE (NSE, 2015), 17 listed firms at USE (USE, 2015), 21 listed firms at DSE (DSE, 2015) and 6 listed firms at RSE (RSE, 2015), making a total of 108. The study however targeted the 63 non-financial listed companies from the 108. The choice of listed firms is necessitated by the authenticity of data while the financials are excluded since their financial structure is subject to regulatory requirements (Santos, 2001).

1.7 Limitations of the Study

The only constraint encountered during the study was obtaining data from NSE and specific firms' websites due to slow response rate by the NSE staff and internet downtime. This was overcome by continuous follow up through physical attendance, emails and phone calls to the NSE secretariat and working late at night when the internet was free from many users and therefore more efficient.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In an attempt to explain how firms finance their assets and the factors that influence these funding decisions, a number of theories and models of capital structure have been proposed over the years by different theorists. These theories and models try to explain the percentage of debt and equity in a firm that not only maximize firms' value, but also the impact on the firms' capability to face the competition in the ever changing market. This chapter reviews both the theoretical and empirical literature related to the study variables, how they are related and develops a conceptual framework. In addition, it offers a positive critique to the literature therefore identifying the research gaps with a probable take by the researcher on the various empirical findings.

2.2 Theoretical Literature Review

A theory is a systematic generalized explanation of a phenomena that offers a guide to the research (Thomas, 1997). Therefore as put by Smyth (2004), one should be familiar with the theories applicable to his area of study. This study is underpinned by capital structure theories that provide the basis of study variables choice. In particular, capital structure irrelevance, relevance, agency, signaling theory, trade off and pecking order theories are reviewed since all of them support both the dependent and predictor variables as shown in the conceptual framework.

2.2.1 Modigliani and Miller Capital Structure Irrelevance Theory

This proposition was advanced by Modigliani and Miller (1958) who said that without taxes and under assumptions of perfect markets, with no capital market frictions (no transaction costs, asset trade restrictions or bankruptcy costs), symmetric access to credit

markets (firms and investors can borrow or lend at the same rate and firm financial policy reveals no information), each firm belonging to a risk class set with common earnings, a firm's debt-equity ratio does not affect its market value. Therefore the value of the levered firm is equal to the value of the unlevered firm and hence capital structure financing decision is therefore irrelevant.

They argued that if two firms are identical in all respects but only differ in their total market value and in the way that they are financed, investors will sell shares of the overvalued firm, buy shares of the undervalued firm and continue this process until the two firms command the same value through a process referred to as arbitrage. In essence, Modigliani and Miller (MM) theorized that a company with a particular set of expected cash flows simply divides them up among investors according to the proportion of debt and equity it uses to finance its assets (Luigi & Sorin, 2009). Dividing up those cash flows among investors has no effect on the company's value (Brigham & Ehrhardt, 2010).

With regard to cost of capital, MM argued that the cost of equity of a levered firm is equal to the cost of equity of an unlevered firm plus a financial risk premium, which depends on the degree of financial leverage. It is a therefore a linear function of the company's debt to equity ratio. According to them, as debt increases, the cost of equity of the levered firm also increases. Using more debt in the capital structure will not increase the value of the firm because the benefits of cheaper debt will be exactly offset by an increase in the riskiness of the equity and hence it's cost to keep the value of the firm constant.

Indeed, MM are considered as the pace setters for explaining the capital structure, although it was later proved that their 1958 proposition was theoretical model without a solid empirical foundation (Ross, Westerfield & Jaffe, 1993). Generally however, according to Ross *et al.* (1993), their theorems are a cornerstone of finance for two reasons. The first is substantive and stems from their nature of irrelevance propositions.

These propositions help us understand when these decisions may affect the value of firms and why. Indeed, the entire subsequent development of corporate finance can be described essentially as exploring the consequences of relaxing the MM assumptions. The second reason is methodological, that is, by relying on an arbitrage argument; they set a precedent not only within the realm of corporate finance but also within that of asset pricing.

The MM irrelevance theory has been largely criticized due to the assumptions held which are unlikely to hold in practice at least in the long run. Empirical works has shown that the MM irrelevance theorem fails under a variety of circumstances with the most commonly used elements including consideration of taxes, transaction costs, bankruptcy costs, agency conflicts, adverse selection, time-varying financial market opportunities, and investor clientele effects (Luigi & Sorin, 2009). This has also triggered the emergence of other theories. Again, with both debt and firm value driven by other factors such as profits, collateral and firms growth opportunities, it is difficult to conduct a structural test of the theory by regressing value on debt (Luigi & Sorin, 2009). To cap it all, as put by Breuer, Gürtler and Schuhmacher (2008), MM irrelevance theory does not take into consideration any kind of objections resting on the imperfections of capital markets. The assumption of same risk class and hence borrowing rate by firms is practically not true unless by sheer coincidence. Empirically, using the USA Electric Utilities and Oil companies for the period 1990-1998 with a retention policy, Kouki (2011) found that the relationships between leverage and firm value are significantly affected by the firm's payout ratio, contradicting the MM's view.

2.2.2 Modigliani and Miller Capital Structure Relevance Theory

This proposition incorporates taxes and MM (1963) therefore modified their irrelevance theory and argued that capital structure indeed matter in determining the value of a firm. The theory was based on the fact that in many jurisdictions interest on debt is an

allowable expense hence tax shield. Based on this assertion, firms could borrow up to a 100% to reduce their taxes to zero if possible.

In practice however, company tax system and personal tax system interact in complex ways. Miller (1977) suggested that the presence of taxes on personal income may reduce the tax advantage associated with debt financing. This is because firms could save corporate taxes by raising the debt to equity ratio, but investors would pay additional personal tax and, therefore, require higher returns to compensate for this fact and the higher associated risks. MM proposition was therefore modified in 1977 to incorporate personal taxes but with the same argument that capital structure indeed matters. Graham and Harvey (2001) also posit that a typical firm could double tax benefits by issuing debt until the marginal tax benefit begins to decline. It is not therefore possible for a firm to have a 100% debt financing.

According to Breuer and Gürtler (2008), since different countries have different tax laws, the entire proposition on tax shield relevance could lose its validity if for instance a country changes its tax laws to deny advantage on interest on debt. A case in point is Kenya where firms are subject to thin capitalization status. A firm is said to be thinly capitalized if it is predominantly foreign controlled or where the debt outweighs equity by over three times (Blouin, Huizinga, Laeven & Nicodème, 2014). Multinational groups in particular are often able to structure their financing arrangements to establish a tax-efficient mixture of debt and equity designed to evade tax through loopholes in international transfer pricing rules (Blouin, Huizinga, Laeven & Nicodème, 2014). To deter this illegality, any interest on excess debt does not enjoy tax shield implying that debt has obviously a maximum limit of tax advantage in a financial structure. The assertion of 100% debt financing is therefore not true.

In conclusion, MM demonstrates that showing what does not matter can also show, by implication, what does matter (Miller, 1988). By implication, if capital structure does in fact matter, then taxes and default risk could be good places to look for reasons why it

matters (Miller, 1988). An understanding of the MM propositions also helps to distinguish between logical and illogical reasons for particular financing decisions. The fundamental MM message is that any combination of finance sources is as good as another. No matter how many sources of finance are used, the resulting capital structure is just another way of dividing the net cash flow between the people who have contributed the capital that sustains the company's operations (Myers, 2001). MM assertion is however only true in theory since in practice there exists bankruptcy and agency costs which will even increase as debt increases in a firm (Brigham & Gapenski, 1996).

2.2.3 The Static Trade-Off Theory

This theory looks at the tradeoff between tax benefit of debt and the costs of bankruptcy. It argues that while investment decision and firm assets are held constant, an optimal capital structure is attained when the tax benefit of debt equals to leverage associated costs which include financial distress, bankruptcy and agency (Myers, 2001). Firms will use debt as much as possible but watch out for any disadvantage that may arise as a result of a bankruptcy. This is the point at which the tax saving from any additional unit of debt exactly equal to the cost which arises from an increase in the financial distress probability (Sheikh & Wang, 2011). The theory assumes the existence of different target leverage for different firms due to firm's specific factors and also believe that firms are already at their presumed targets (Myers, 2001).

According to Luigi and Sorin (2009), trade-off theory grew out of the debate over the MM irrelevance theorem when corporate income tax was added, this created a benefit for debt in that it served to shield earnings from taxes implying a 100% debt financing. In terms of profitability, trade-off theory asserts that more profitable firms have more debt-serving capacity thus a higher debt ratio and vice versa (Luigi & Sorin, 2009). High profitability firms with tangible assets that are relatively safe will use more debt than firms with low profitability as well as those with risky intangible assets.

In practice however, firms do not operate with a 100% debt financing due to distress, bankruptcy and agency costs hence the need to match the costs and benefits. In addition, the target capital structure is not directly observable and that the tax code is much more complex than that assumed hence different conclusions regarding the target can be reached depending on which features of the tax code are included (Graham & Harvey, 2001). Moreover, while the theory predicts that there is a positive effect of the tax rate and leverage due to allowable financial expenses against taxable income, it does not specify the effect of tax rate and leverage (Karadeniz, Kandir, Balcilar & al, 2009). Hennessy and Whited (2005) in their study on debt dynamics show several empirical findings inconsistent with the static trade-off theory to disapprove the existence of target leverage ratio. They argue that firms can be savers or heavily levered, that leverage is path dependent, decreasing in lagged liquidity and varies negatively with an external finance weighted average.

2.2.4 Dynamic Trade-Off Theory

This theory recognize the role of time and other aspects that are typically ignored in a single-period model, particularly the roles of expectations and adjustment costs (Luigi & Sorin, 2009). In this model, the correct financing decision depends on the financing margin that the firm anticipates in the next period. Some firms expect to pay out funds in the next period, while others expect to raise funds hence if funds are to be raised, they may take the form of debt or equity (Luigi & Sorin, 2009).

This theory therefore propose that firms may deviate from their target capital structure but they will exhibit an adjustment behavior towards that target (Abdeljawad, Nor, Ibrahim & Rahim, 2013). The existence of a presumed target requires that any deviation from that target leverage be adjusted. This deviation could be due to a number of reasons for instance time value which may create uncertainty. Prudently, adjustments should be done when the cost of deviation from the target exceeds the cost of adjustment toward the target (Fischer, Heinkel & Zechner, 1989).

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Such deviations are gradually removed over time for a firm to converge to the target capital structure at a certain speed of adjustment (SOA) but the magnitude of this SOA is different for different firms (Frank & Goyal, 2007). According to Abdeljawad *et al.* (2013), SOA is the percentage of the deviation from the target capital structure that the firms remove in each period. The theory however assumes that there exist an observable target which in practice is difficult to determine.

Dynamic trade-off models are useful in considering the option values embedded in deferring leverage decisions to the next period. For instance, Goldstein, Ju and Leland (2001) observed that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions that EBIT is invariant to changes in capital structure and separation of investment and financing policy, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. This assumption that the EBIT-generating machine, which is the source of firm value, runs independently of how the EBIT flow is distributed among its claimants is at times false in practice. An assumption that any shilling pay out, whether to taxes, interest payments or dividends affects the firm in the same way is also false in reality.

According to Luigi and Sorin (2009), the first dynamic models to consider the tax savings versus bankruptcy cost trade-off was Brennan and Schwartz (1984). Both analyzed continuous time models with uncertainty, taxes, and bankruptcy costs, but no transaction costs. They observed that since firms react to adverse shocks immediately by rebalancing costlessly, they therefore maintain high levels of debt to take advantage of the tax savings. This view has however may not hold in practice since firms will always incur transaction costs which were ignored in their model.

2.2.5 Pecking Order Theory

According to Kishore (2009) the theory was first suggested by Donaldson in 1961 and further developed by Myers and Majluf (1984). It argues that firms have a preferred

hierarchy for financing decisions with the highest preference being to use internal financing before resorting to any form of external funds. This is because internal funds incur no flotation costs and require no additional disclosure of financial information that may lead to a possible loss of competitive advantage in the market (Kishore, 2009). Castro, Tascón and Tapia (2011) also contend that this hierarchy is necessary in order to minimize adverse selection costs of security issuance as a result of the existence of asymmetric information.

In Myers and Majluf model (1984), investors rationally discount the firm's stock price when managers issue equity instead of riskless debt since to them, it shows the firm's stock is overvalued. To avoid this discounting resulting to low price, managers avoid equity whenever possible. The model therefore predicts that managers use internal funds first, then use debt and finally resort to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future (Kishore, 2009). In one of their works, Frank and Goyal (2007) confirmed that the greatest support for the pecking order is found among larger firms since are least risky and most likely to issue public bonds than small firms.

The theory however assumes that firm's managers know more about the company's current earnings and future growth opportunities than outside investors and they will act in the best interests of the company's existing shareholders (Sheikh & Wang, 2011). There is a strong desire to keep such information proprietary as the use of internal funds precludes managers from having to make public disclosures about the company's investment opportunities and potential profits to be realized from investing in them (Liesz, 2001). In safeguarding the interest of the existing shareholders, managers may even forgo a positive-NPV project if it would require the issue of new equity, since this would give much of the project's value to new shareholders (Myers & Majluf, 1984). It is also assumed that there is asymmetry of information about the true firm value between existing and potential shareholders (Upneja & Dalbor, 2001). This may not necessarily be true in practice.

It also ignores the problems that can arise when a firm's managers accumulate so much financial slack that they become immune to market discipline (Kishore, 2009). In their work, Upneja and Dalbor (2001) posit that only profitable firms can generate the necessary funds to use internal funds hence failure of theory holding in practice. Empirically too, using data from 114 non-financial Jordanian firms, Zurigat (2009) concluded that equity is not the last resort for financing as the pecking order theory suggests. According to (Viviani, 2008), firms leverage reflects both the past profitability as well as the investment opportunities of the firm, implying that if a firm have no available opportunities, it may prefer equity than debt contrary to the pecking order dictate.

Preference for equity over debt contrary to this theory has also been supported by Fama and French (2005). They argue that firms can avoid the information costs or the adverse selection by issuing the equities which are less subject to asymmetric information such as equity issues to employees in their compensation plan or to existing stock holders through rights issue. According to them, that kind of issue does not change the ownership structure and involve low costs of asymmetric information such that the grip of the information asymmetries approach is broken hence the need for issuing debt to finance new investment projects is reduced at the expense of equity.

2.2.6 Agency Cost Theory

These theory by Jensen and Meckling (1976) argue that an optimal capital structure is attainable by reducing the costs resulting from the conflicts between the managers, owners and debt holders. In other words, the optimal financial structure results from a compromise between various funding options (own funds or loans) that allow the reconciliation of conflicts of interests between the capital suppliers (shareholders and creditors) and managers (Grigore & Stefan-Duicu, 2013).

Indeed, Jensen and Meckling (1976) argued that debt can be used to control the managers' behaviour by reducing the free cash flows within the firm by ensuring prompt payment of interest payments. This minimizes the cash at the disposal of managers likely to be misappropriated through personal interests or still waste the cash in organizational inefficiencies at the expense of the firm's objectives. Key among the objectives is maximization of shareholders wealth by maximizing profitability, a measure of financial performance.

According to Grigore and Stefan-Duicu (2013), indebtedness attracts agency costs of three types, that is, control and justification costs, high risk investments remuneration costs demanded by the creditors and bankruptcy costs. Firms thus have interest to indebt until the point at which the increase of its value owed to the financed investments will be equal to the marginal costs generated by the indebtedness. Therefore, the optimal level of indebtedness is the one that allows the minimization of overall agency costs, consistent with Jensen and Meckling (1976).

In addition, conflicts can be reduced by firms with high growth opportunities relying on lower leverage and using a greater amount of long-term debt than firms in more mature industries or issue convertible debt or debt with warrants than plain debt since convertible debt will have lower agency costs than plain debt (Jensen & Meckling, 1976). The high growth opportunities imply likelihood of high profitability and hence financial performance to hedge against high long term debt cost (Jensen & Meckling, 1976). Fast growing firms may also imply possibilities of high levels of fixed assets investment. Such firms obtain debt easily as they can pledge the fixed assets as collateral and thereby reduce agency costs which are usually associated with the use of debt (Karadeniz *et al.,* 2009).

Indebtedness allows shareholders and managers to adhere to same objective of maximizing financial performance and hence shareholders wealth (Luigi & Sorin, 2009). For managers, the indebtedness has the power to incite them to perform since the more

the company is indebted, the higher its bankruptcy risk and the higher the risk of losing their jobs, remunerations and other advantages. This is considered to be a sufficient threat in coercing them to down their inefficient management styles and in return yield maximum cash-flow to reward the debt (Grigore & Stefan-Duicu, 2013). For the shareholders, debt has a leverage effect over the financial return due to interest tax shield coupled with the advantage of non-dilution of the share capital (Zhang & Li, 2008).

In practice however, managers still misappropriate funds even with debt obligation negating the argument advanced by the theory. Empirically, using 323 United Kingdom public Companies, while the general effect of leverage and agency costs was found to be significantly negative, results from the univariate tests showed that this relationship no longer holds in an extremely high level of leverage (Zhang & Li, 2008). Agency theory too remains insufficiently studied with empirical verification difficulties mainly due to difficulty of measuring the agency costs (Grigore & Stefan-Duicu, 2013).

2.2.7 Information Signaling Theory

According to Zhao, Barry and Katchova (2008), the concept of signaling was first studied in the context of job and product markets in 1970 by Akerlof and Arrow and later developed into signal equilibrium theory in 1973 by Michael Spence. The concept stated that a good firm can distinguish itself from a bad firm by sending a credible signal about its quality to capital markets. The signal will be credible only if the bad firm is unable to mimic the good firm by sending the same signal. This will happen if the cost of the signal is higher for the bad type firm than that of the good type firm, making it worthless to mimic by the bad firm (Zhao *et al.,* 2008).

This theory argue that the choice of firm's capital structure signals to the outside investors the information that the insiders possess. It further argue that due to the problem of information asymmetry, it makes it difficult for lenders and prospective common stock investors to accurately assess their level of risk and hence the reliance on

what is communicated by the insiders (Ross, 1977). The presumption is that managers are likely to be better informed about the profitability and cash-flow prospects of their firm than outside investors (Ross, 1977). According to Ross (1977), the market may not be able to distinguish firms with rosy prospects from those with less prosperous outlooks due to lack of reliable data on the differences among firms hence it will price firms almost equally, to the detriment of high-quality companies and their shareholders. This therefore justifies the concept of the theory.

In sum, two hypothesis emerge from the theory. First is by Ross (1977) who argue that a firm signals an increase in the firm's asset value by increasing its leverage since it has the confidence of meeting the debt obligation. Second is by Leland and Pyle (1977) who argue that a firm signals the increase in firm's value by reducing it leverage since it has enough retention to finance its future growth.

In practice however especially in fierce competition market, some signals are less or not reliable and can be imitated by those who wish to give the impression of having the quality, without actually possessing it (Smith & Harper, 2003). Smith and Harper (2003) analogizes such firms to an unmarried woman who may choose to wear a ring to signal that she is married to forestall unwanted attention. The theory does not cater for such events. Empirically too, using data for 1419 farms in Illinois Zhao, Katchova and Barry (2004) found that unlike corporate firms which use high leverage as signals, farming concerns mainly depend on their large size and good historical operation records, invalidating Ross (1977) generalization.

2.2.8 Life Cycle Theory

The theory argue that firms use different types of financial structure at different stages of life cycle. According to Anil and Zenner (2005), corporate life cycle theory which argue that organizations get conceived/introduction, grow into adulthood and then die, was proposed by Disiboshi, an American in 1989. He argues that while aware of the benefits

of debt, firms use personal guarantors and savings at introduction stage since most of them are likely to make losses. Not many debt providers are keen to lend to them too, in any case there are no assets to act as collateral mostly.

The growth stage has similar characteristics to the introduction stage. Fast growing firms hardly want to borrow significantly as this would affect flexibility to take up projects. At maturity stage however, borrowing is significant and affordable as firms have grown a substantial asset base to act as collateral. Indeed, Anil and Zenner (2005) observed that companies with large and stable profits should make greater use of debt to take advantage of interest tax shields. Evidence shows that larger, more liquid, and more profitable firms with less expected distress costs use debt conservatively, while those firms with unique products, low asset collateral or large future growth opportunities, presumably at introduction or growth stages, tend to show lower levels of leverage (Castro *et al.*, 2011).

At decline stage, firms they do not have much investment needs and therefore tend to retire most of their debt and rely more on retained earnings. In addition, firms are likely to suffer a decrease in earnings and consequently a decrease in the tax shield benefit from using debt hence the support for lower use of debt (Castro *et al.*, 2011).

While works have been done in this area, the criteria for classifying life cycle stages is not precise and hence varied stages (Castro *et al*., 2011). This varied number of stages is one of the reasons for lack of consistence in results across studies, despite the wide number of works performed. In addition, there is very little theory to explain the differences in the financing choices across the stages (Fluck, 2000). For this reasons, empirical evidence show different leverage patterns when firms are mature, as the maturity effect is related to debt capacity or affordability (Bulan & Yan, 2010).

2.3 Conceptual Framework

A conceptual framework refers to a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for the integration, presentation and interpretation of information (Cooper & Schindler, 2006). As noted by Smyth (2004), a well presented conceptual framework helps to explain the possible connections between the variables.

The conceptual framework as depicted in figure 2.1 below shows the effect of short term debt, long term debt, retained earnings and other equities as independent variables, gross domestic product (GDP) growth rate as moderating variable and profitability as dependent or response variable. Kothari (2004) defines an independent variable as a variable that is manipulated by the researcher to cause an effect or change on another variable called dependent variable. Indeed, Chandran (2004) refers to dependent variable as a variable that is measured, predicted, or otherwise monitored and is expected to be affected by manipulation of an independent variable, conquering with Kothari (2004). To both Chandran (2004) and Kothari (2004), a moderating variable is an independent variable that is included in the original independent-dependent variables relationship since it is believed to have a significant or contingent effect.

Firms Financial Structure   **Firms Financial Performance**

| Short term debt: |
| -Short term debt: Total assets |

| Long term debt |
| - Long term debt: Total assets |

| • Return on assets   • Return on |

| Retained earnings: |
| Retained earnings: Total assets |

| Share capital: |
| -Ordinary capital, Preference capital and Reserves: Total assets |

| GDP growth rate |
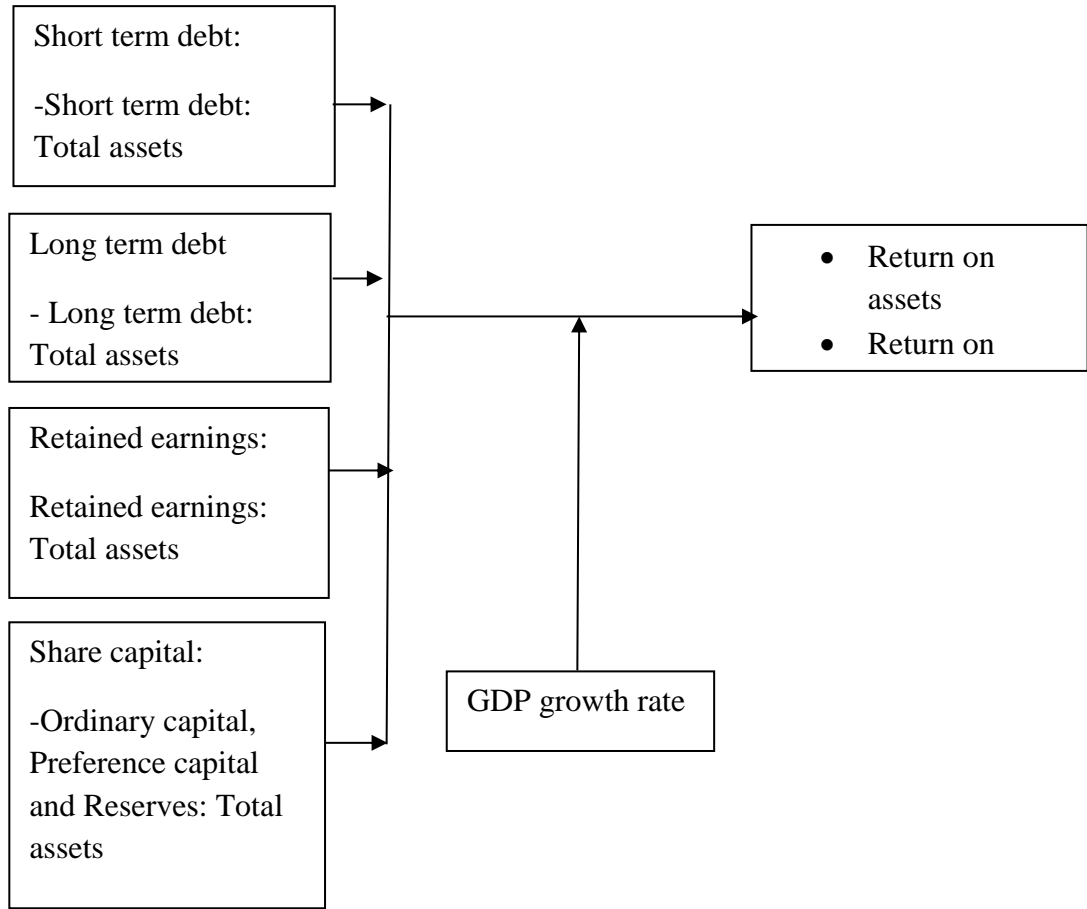
Independent variables   Moderating variable   Dependent variable

Figure 2.1 Conceptual Framework

2.3.1 Long and Short Term Debts

Long term debt refers to obligations which are payable beyond one year like bonds and mortgages. Such long term loans are used to measure the gearing extent of a firm. Short term debt, referred to as current liabilities in the financial position statement, are obligations payable within a year like overdraft facilities and are good indicators of liquidity and performance of a firm when compared with current assets. When the current liabilities outweigh current assets, the firm has a poor liquidity performance. Long term debt is also referred to as non-current liabilities and is at times preferred by firms since it gives them time to make profits to indemnify it or pay immediate expenses like research and development for startup businesses. A firm which is highly indebted, whether by short or long term, is likely to suffer distress and dilute the return hence poor financial performance.

Businesses however use debt because it offers them potential to increase the volume of their operations and increase the average ROE and ROA through tax savings since in many jurisdictions, interest on debt is an allowable deduction. The use of debt will have this effect only if the rate of return on the investment or assets is greater than the rate of return on the debt (Watkins, 2002). Firms which therefore exhibit higher variability in income will have lower leverage (Viviani, 2008). To reduce the volatility of profits, firms with an operating risk that is high should reduce the level of debt. Financial leverage is beneficial if the rate of interest charged to the firm is lower than the internal rate of return (IRR) of the firm, in which case the firm will be making enough to pay the interest charged and the principal repayment and retain the surplus or profits for the shareholders in form of distributable dividends (Madan, 2007).

On the other hand the firm may experience a financial leverage risk such that the returns of the business are not enough to cover the principal amount and interest charged. This occurs when the rate of interest exceeds the IRR of the firm. To avoid liquidation, the firm will have to use part of the shareholders' funds to repay the interest and principal. If

this is prolonged, the firm could eventually be faced with financial distress, erosion of the equity and subsequently winding up (Madan, 2007).

The simplest way to assess whether borrowing has increased the ROE or ROA is to contrast the ROE or ROA with the loan interest rate. When the returns are higher than the loan interest rate, there is positive leverage, that is, the ROA and ROE increases with borrowing (Watkins, 2002). This augments the MM (1963) capital structure relevance theory and Ross (1977) view on information signaling theory. Many scholars have suggested on various approaches of measuring debt financing and financial performance in a business.

On debt financing, relevant to this study is suggestion by Bierman (1999) that the proportion of debt, both short and long term, to the total capital or debt to the sum of debt and common stock, using their book values. Scholars such as Nivorozhkin (2004) however expresses concern with the use of book values versus market value data, in the measurement of indebtedness and prefers to use market values, as they provide a more accurate description of future cash flows and their risks. Market prices however fluctuate frequently which creates a problem of measurement persuading Nivorozhkin (2004) to conclude that the final and perhaps best measure of leverage is using the book values. To this end, the study adopts the Bierman (1999) approach.

In view of the shareholder, a firm's financial performance is measured by how better off the shareholder is at the end of a period than at the beginning and this can be determined using ratios derived from financial statements, mainly the balance sheet and income statement, or using data on stock market prices (Berger & Patti, 2006). The ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier by reporting profits, and can be used to compare a firm's ratios with other firms or to find trends of performance over time (Berger & Patti, 2006). To this end, the study will use ROA and ROE as measures of financial performance.

2.3.2 Equity

Equity capital is that part of capital which is free of debt and represents ownership interest in a firm (Moyer *et al.,* 1999). It is therefore that amount contributed by the owners and normally includes ordinary share capital, preferential capital, retained earnings and reserves. Like debt providers, equity providers also earn returns inform of dividends from the profits generated by the firm (Titman *et al.*, 2011). Preference shareholders receive their dividends at an agreed rate before the ordinary shareholders and any unappropriated profit is retained for firm's expansion programs (Titman *et al.,* 2011).

Unless the dividend payout ratio is high, when a firm report high net profits, it is expected to have high retained earnings. Suffice to say that a good financial performance leads to a high retention. The converse may however not be true and this validation forms part of the objectives. If a firm reports a loss, then it has a retained loss which reduces the shareholders' funds. In terms of measurement of equity (preference stock, ordinary stock and retained earnings), Bierman (1999) proposal on the use of book values is adopted, that each component's proportion to total debt and equity can be determined henceforth.

2.3.3 Gross Domestic Product Growth rate

The GDP is the total market value of all final goods and services produced in a country in a given year, which equals total consumption, investment and government spending, plus the value of exports, minus the value of imports (Costanza, Hart, Posner & Talberth 2009). Changes in the GDP on an annual basis provide a measure of economic growth (Costanza *et al.*, 2009). GDP is commonly used for macroeconomic analysis and for global comparison and research on international effect of countries (Liu, 2006). To this end, it is the researcher's view that GDP growth rate is a good moderator for it is affected by almost all factors in the economy and that it is a common denominator in all

the EA countries. It has been used as a moderating variable by Visser, Gesthuizen and Scheepers (2014) while analyzing the impact of macro-economic circumstances and social protection expenditure on economic deprivation in Europe too.

The GDP Growth rates in the EA region has been relatively strong with Rwanda and Tanzania being the fastest-growing economies in the region with 7.7% and 6.9% respectively in 2012 (KIPPRA, 2013). Kenya's growth rebounded in 2012 supported by improved agricultural performance and macroeconomic stability to record 4.6% up from 4.4% in 2011 (KIPPRA,2013). In Uganda the GDP growth rate, 2.2% in 2012 has been slow, partially explained by the tight monetary policy by the Central Bank of Uganda (KIPPRA, 2013). Regional economies are projected to continue growing strongly due to the exploitation of the emerging natural resources like oil and gas and regional integration (International Monetary Fund (IMF), 2013)

2.4 Empirical Literature Review

According to Zikmund, Babin, Carr and Griffin (2010), empirical literature review is a directed search of published works, including periodicals and books that discuss theories and present empirical findings by other scholars that are relevant to the research topic under study. It therefore provides a platform for analyzing the variables, their relationships and to critique the findings where necessary. This section therefore provides a review of such empiricals.

2.4.1 Debt and Financial Performance

Empirical findings on the effect of debt and profitability have been reported by various researchers. For instance, to investigate the effect of capital structure and profitability of conglomerate, consumer goods, and financial services firms quoted in Nigeria Stock Exchange, Babatunde, Akinwunmi, Khadijah and Yusuf (2014) showed that the effect of capital structure and ROA is not significant across all firms except for 7up and Nestle. The study also showed an insignificant effect of ROE and debt asset ratio. However,

there was a significant relationship in almost all firms between ROE and debt to equity ratio. They concluded that highly geared firms have significant relationship with ROE and insignificant relationship with ROA. In addition, highly geared firms tends to have high profitability and that the nature of the industry also determines the effect of capital structure on their profitability.

The sample size was 120 obtained using random sampling covering the period 2000 to 2011. ROA and ROE were used as performance proxies while debt equity ratio and debt asset ratio were used as capital structure proxies. The effect of the performance and capital structure proxies were analysed using correlation coefficient and regression techniques. This findings are consistent with Anil and Zenner (2005) view on life cycle theory that companies with large and stable profits should make greater use of debt to take advantage of interest tax shields. It would have been imperative though for the study to separate short and long term debt and analyse their implications separately. Stratified sampling would have been better than simple random since it would have given a better representation on the overall sample.

To analyse on how firms choose their capital structure under pecking order and trade-off theories particularly when they have leverage target Zurigat (2009) concluded that leverage is positively related to profitability. They used data from 114 non-financial Jordanian firms (of which 62 are industrial firms and the remaining are services firms) for the period 1997-2005. Panel data analysis was employed. While the study disagree with the pecking order theory hypothesis, it supported both the Agency cost and MM capital structure relevance as both provides that profitability increase with debt capacity. The study did not discuss in depth the proxy for profitability.

To study the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009), Shubita and Alsawalhah (2012) found a significantly negative relation between debt and profitability. This suggests that profitable firms depend more on equity than debt. The study sample

consisted of 39 randomly selected companies with correlations and multiple regression analysis as techniques of analysis. The findings contravene Myres and Majluf (1984) pecking order hypothesis that debt is preferred to equity. It would have been good for the study to separate the retained earnings from other equity and assess its impact on profitability and span beyond manufacturing sectors for generalizations of the results. This are some of the objectives of this study.

To analyse the impact of capital structure on profitability of listed companies in India, Chisti *et al*. (2013) found that capital structure have a statistically significant impact on the profitability of firms. This invalidates the MM (1958) theory of capital irrelevance. The study used secondary data of ten automobile companies for the 2007-2012 and used ratios analysis. GP margin, NP margin ROCE, return on investments were used as profit proxies while debt to equity, debt to assets and interest cover were used as capital structure proxies. Like Shubita and Alsawalhah (2012) study, it would have been good for the study to separate the retained earnings from other equity and assess its impact on profitability and span beyond automobile industry for generalizations of the results since 10 firms are too few to make sound generalized conclusions. The time scope was also narrow.

To test the predictions of pecking order theory using data from the Chinese market Tong and Green (2005) found a significant negative effect of leverage and profitability and a significant positive effect of leverage and past dividend. They argue that their findings support the pecking order theory over trade-off theory and will be capable of explaining the financing behaviour of Chinese companies. The sample size was 42 firms. This study however considered a small sample size in a wide market. Possibly results would have been different if the sample size was improved.

In testing the applicability of the pecking order and the signaling theories for farm businesses Zhao *et al.* (2004), found that farm businesses follow both the pecking order and signaling theories. They demonstrated that, unlike corporate firms who can choose

high leverage as financing signals, farm businesses mainly use their large size and good historical operation records as financing signals. The analysis utilized data from the Illinois Farm Business and Management system for farms that received continuous annual balance sheet certification during the 1995-2002. The study focused on sample farms with at least 2 years of continuous operation giving a total of 1419 farms. The proxy for profitability as response variable was cash flows and hence the negative coefficients in the model against leverage was interpreted as an inverse effect of leverage and profitability and hence support for pecking order theory. It would have been imperative to enlarge the scope in other jurisdictions too for generality.

To determine the effect of capital structure and financial performance for industrial and allied sectors in the NSE during the period 2004 to 2008, Kaumbuthu (2011) found a negative effect of debt to equity ratio and ROE. The findings therefore suggest that industrial firms prefer equity to debt again invalidating the pecking order theory. The proxies for capital structure and financial performance were debt to equity ratio and ROE respectively with regression as the technique of analysis. Again, it would have been imperative for the study to span beyond one sector for generalization of findings which is what this study seeks to do. No serious diagnostics were performed which would have had an implication on the findings.

In investigating the influence of working capital management on performance of small medium enterprises in Pakistan, Gul, Khan, Rehman, Khan, Khan and Khan (2013) found out that debt ratio had an inverse relation with profitability. Data used in the study was taken from SME data base, Karachi Stock Exchange, tax offices and firms themselves over the period 2006 to 2012. The proxy for the dependent variable (profitability) was ROA and Short term debt to total debt among others as independent variables. Regression analysis was used. While the study is informative, of concern is the validity of data since most SMEs are not listed and hence not obligated by law to provide audited information which is more realistic due to public scrutiny. The study did not address long term debt and retained earnings to on their relationship with

performance which is key in the current study. The study however had a strong support for pecking order theory.

In analysing working capital management and its impact on financial performance in Slilanka, Yogendrarajah, and Thanabalasingam (2014) found out that the high investment in inventories and receivables is associated with lower financial performance (ROA). Else put, lower investment in accounts payables result into lower financial performance. They further observed that corporate profitability might decrease with the cash conversion cycle when the cost of working capital rise faster than the benefits of holding more inventories and/or granting more trade credit to customers. A Sample of 9 companies listed at Colombo stock exchange for the period of 2004 to 2009 was used.

In evaluating the effects of working capital management on firm's performance in Turkey, Vural,, Sökmen and Çetenak (2012) found that firms can increase profitability measured by gross profit by shortening the collection period and cash conversion cycle. Leverage as a control variable had a significant negative relationship with firm profitability too. Dynamic panel data analysis was used with secondary data from 75 manufacturing firms listed on Istanbul Stock Exchange Market for the period 2002-2009.

To investigate the effect of working capital management on the performance of non-financial companies listed in the NSE, Mwangi *et al*. (2014) concluded that an aggressive financing policy had a significant positive effect on ROE and ROA. Explanatory non-experimental research design with secondary panel data of 42 non-financial firms for the period 2006-2012 was used. Makori and Jagongo (2013) while investigating the effect of working capital management and profitability of manufacturing and construction firms listed at the NSE concluded a negative effect of profitability and number of day's accounts receivable and cash conversion cycle, but a positive effect of profitability and number of days of inventory and number of day's payable. Pearson's correlation and ordinary least squares regression models were used

for analysis using data for the period 2003-2012. The studies by Yogendrarajah, and Thanabalasingam (2014), Vural, Sökmen and Çetenak (2012), Mwangi *et al.* (2014) and Makori and Jagongo (2013) dwelled largely on cash conversion cycle which is not the objective of this study.

In conclusion, while trade off theory suggests that there is a positive effect of profitability and debt, pecking order theory has implied that there is a negative effect of profitability and leverage for highly profitable firms will use retained earnings accumulated from past profits, which is an internal financing and not depend on external financing (Amidu, 2007). Information signalling theory postilates a positive effect of debt and financial performance (Zhao *et al*., 2008). Agency cost theory suggest a positive relatioship between debt and financial performance as debt can reduce agency costs of equity by reducing the amount of free cash available to managers misappropriation (Jensen, 1986)

2.4.2 Equity and Financial Performance

To examine capital structure and profitability of the Nigerian listed firms from the agency cost theory perspective Ishaya and Abduljeleel (2014) found that debt is negatively related with profitability but equity is directly related with profitability. A sample of 70 out of population of 245 firms listed at the Nigerian securities Exchange was used for the period 2000 – 2009. Panel data for the firms were generated and analyzed using fixed-effects, random-effects and Hausman Chi Square estimations. The findings are consistent with Shubita and Alsawalhal (2012) survey and also provide evidence against the agency cost theory.

To find out the effect of capital structure on the financial performance of SMEs in South Africa and Ghana, Abor (2007) found that that long-term debt and gross profit margin are positively related; whereas short-term debt has significant and negative relationship with gross profit margin in both South African and Ghana. It is also observed that the

total debt ratio is also significantly and negatively related with gross profit margin. In Ghana, ROA had significant and negative relationship with all the measures of capital structure. The study used secondary data through random sampling with regression as the technique of analysis. It however did not hive off retained earnings from equity to analyze its impact on either ROA or gross profit margin, which is part of what this study address. Stratifying the SMEs based on some measure would have yielded better results than simply randomizing the selection.

To analyse on how firms choose their capital structure under pecking order and trade-off theories particularly when they have leverage target Zurigat (2009) concluded that equity is not the last resort for financing as the pecking order theory. They report evidence suggesting that equity issues track the financing deficit relatively more closely. They used data from 114 non-financial Jordanian firms (of which 62 are industrial firms and the remaining are services firms) for the period 1997-2005. Panel data analysis was employed. While the study disagree with the pecking order theory hypothesis, it would have been appropriate to do a similar study in close markets or even Africa markets just to compare the results and possibly generalize the findings. At least the current study seek to capture several markets in EA and not just NSE to overcome that shortcoming.

To determine the impact of choice of capital structure on the performance of firms in Egypt, Ebaid (2009) carried out a study of listed firms in Egypt and found that capital structure has little or no impact on a firm's performance. ROE, ROA, and gross profit margin were used as proxies for performance while short-term debt to asset ratio, long-term debt to asset ratio, and total debt to total assets were used as proxies for capital structure. Multiple regression was used to analysis the data. The results were consistent with Berger and Patti (2006) findings.

To evaluate the effect of leverage and the financial performance of listed firms in Kenya, Maina and Kondongo (2013) found a significantly negative effect of debt and profitability but no effect on firm value. Data for the period 2002 – 2011 was analysed

using descriptive, regression and correlation. Tobin's Q was used as proxy for firm value while ROE and ROA were used as proxies for financial performance. Debt to equity, debt to assets and long term debt to equity were used as proxies for leverage. This results present contradicting and interesting findings. While they validate MM (1958) irrelevance theory through Tobin Q, they negate the same since debt had a negative relationship with profitability, implying that ultimately, it affects the firm value somehow since a firm value is sum of its debt and equity (which includes retained profits).

In conclusion, while trade off theory suggests that there is a negative effect of profitability and equity, pecking order theory has implied that there is a positive effect of profitability and equity for highly profitable firms will use retained earnings accumulated from past profits, which is an equity component and not depend on external financing (Amidu, 2007). Life cycle theory on the other hand support a positive effect of equity and firm's growth and decline phase and a negative relationship with debt in the same phases. A converse relationship is true at maturity stage where firms have stable earnings and strong asset base to act as collateral against any debt provision (Anil & Zenner, 2005).

2.4.3 Gross Domestic Product (GDP) Growth

To investigate the impact of macroeconomic variables on the profitability of listed commercial banks in Pakistan, Kanwal and Nadeem (2013) found that real GDP have an insignificant positive effect on ROA but an insignificant negative impact on ROE. The study analysed secondary data of 18 commercial banks in Pakistan for years 2001-2011 using pooled ordinary least square method. Capturing commercial banks would have been value adding for generalization purposes.

In a study to determine the impact of bank specific, industry specific and macroeconomic determinants (measured by GDP) on the profitability during

international financial crisis in Tunisia, Rachdi (2013) found that Tunisian banking sector was slightly exposed to the effects of the international financial crisis because of its low integration in international financial markets. Secondary data of 10 banks before (2000 -2006) and during (2007-2010) was analysed using generalized moments method. Proxies for explanatory variables were inflation, GDP, interest rate among others while ROA and ROE were proxies for response variable. The dependent variable was lagged once to detect autocorrelation but question arises as to the criteria used for one lag and not more. Visser *et al*. (2014) while analyzing the impact of macro-economic circumstances and social protection expenditure on economic deprivation in 25 European countries over the period 2007–2011 found that GDP growth rate had a moderating effect on the relationship. They used linear multilevel regression analyses so as to take care of the hierarchical structure of the data from 148383 respondents.

2.5 Critique of the Existing Literature

It is apparent from the existing literature that many surveys are either deficient of adequate variables or the scope of study is wanting. For instance Chisti *et al*. (2103), Kaumburhu (2011) and Shubita and Alsawalhal (2012) used one sector of the capital market which therefore limits generalization of their findings to cater for other sectors. Other surveys like Anil and Zenner (2005), Kaumbuthu (2011), Shubita and Alsawalhal (2012), Babatunde *et al*. (2014), Chisti *et al*. (2013), Zurigat (2009), Maina and Kodongo (2013) and Ishaya and Abduljeleel (2014) did not split debt into short and long term in their analysis. It would have been imperative to split debt since there is a possibility that the two contributes differently to their response variable proxies.

Again, in almost all the surveys, no attempt is made to split equity into its constituents and analyse them differently. Rachdi (2013) too in testing for autocorrelation lagged the data once and question arises on the validity of the test suppose one was to have more than one lag. Several reviewed surveys also have used simple random sampling even where the population could have been stratified to yield better results, or do census when

the population is not large. In view of the foregoing, this study therefore tried to address some of this deficiencies.

2.6 Research Gaps

From the reviewed literature, it is evident that the results of the studies conducted are conflicting. It is also evident in all surveys that equity capital has not been separated so as to analyse in isolation the impact of retained earnings, ordinary and preference capital on financial performance. The working capital studies available to the researcher has analysed more on cash cycle and not current liabilities effect on financial performance. Moreover, no literature available to the researcher compares the effect of financial structure on financial performance in EASE. This are therefore pertinent gaps that this study aspired to fill.

2.7 Summary

The above chapter reviews both the theoretical and empirical literature related to the study variables and their underlying relationships. The review then provided a basis for developing a conceptual framework that facilitates a quick understanding of the connection between the response, explanatory and moderating variables by the reader. This connection is particularly important in ascertaining the economic plausibility of variables so that only the variables that have logical and defensible relationship are related. Failure to do a background check on variables is likely to result to spurious relations or relations that do not make business sense. In addition, the chapter provides a positive critique to the literature that forms the basis of identifying the research gaps as also discussed in the chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Methodology is the systematic, theoretical analysis of the methods applied to a field of study, or the theoretical analysis of the body of methods and principles associated with a branch of knowledge (Kothari, 2004). It is therefore an analysis of the principles of methods and rules employed by a discipline. It does not set out to provide solutions but offers the theoretical underpinning for understanding which method or set of methods or so called best practices can be applied to a specific case (Kothari, 2004). Research method is a systematic procedure, technique, or mode of inquiry for attaining a certain objective, (Cooper& Schindler, 2003). This chapter therefore explores methodological issues including design, population, sampling, instruments, data collection, analysis and presentation.

3.2 Research Design

The most important issue after defining research problem is preparation of research design since it facilitates the smooth conduct of the various stages of research (Kothari, 2004). It helps to decide upon issues like what, when, where, how much, by what means, with regard to an enquiry or a research study (Kothari, 2004). Cooper and Schindler (2003) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings.

Research design has also been defined as the conceptual structures within which research is conducted and constitutes the blueprint for collection, measurement and analysis of data by Kothari (2004). It is therefore an arrangement of conditions for collection and analysis of data in a manner relevant to the research purpose. A good research design depends on the purpose, skills of researcher, funds and nature of the

research problem such that while a particular design may be good for one problem, it may not be equally good to other problems (Bryman & Bell, 2011).

Causal or explanatory research design was used due to the nature of problem and availability of data. This is a design that show the effect of a variable(s) towards another variable(s) and attempts to explain the causes of such changes (Kerlinger & Lee, 2000). It is conducted when researchers want to explore the extent to which changes in one variable are reflected in changes in the other variable (Creswell & Garrett, 2008). Tashakkori and Teddlie (2010) posit that explanatory research is intended to explain, rather than to simply describe the phenomena studied. This design does not involve manipulation of the independent variables in making inferences about causality (Kerlinger & Lee, 2000).

Explanatory design is preferred in situations where some key information is available about the phenomenon of the study (Cooper& Schindler, 2003). It uses quantitative data in most cases as is the case is in this study. This design have also been used by Mwangi *et al.* (2014) in analyzing the effect of capital structure and performance of non-financial companies listed at the NSE and Molavi and Jamalzade (2015) in analyzing the correlation between financial ratios and capital adequacy across banking network in Iran. In view of the foregoing, since sufficient data and which cannot be manipulated for ease of validity check was used, the application of the design is justified.

3.3 Target Population

A research population is a well-defined collection of individuals or objects known to have similar characteristics or trait that the researcher wishes to study (Kumar, 2005). Target population refers to all members of a real or hypothetical set of people, events or objects from which the researcher wishes to generalize the results of their research while accessible population is all the individuals who realistically can be included in the sample (Gall, Gall & Borg, 2007). The study targeted the non-financial listed companies

that have traded for at least three years at the NSE, RSE, DSE and USE for the period December 2006-2014.The exclusion of financial institutions is to remove anomalies associated with regulation like liquidity levels, core capital and bad debt provision (Santos, 2001).

This choice of listed firms is due to their huge capital raising potential and are also more accountable not only to their shareholders but also to the public by way of information provision, since they are required by law to be audited, and therefore the data is bound to be available and reliable. In addition, being in the same market, the firms have almost the same reporting pattern, design and the bare minimum disclosures as required by the regulator. As noted by Kothari (2004), a population of study must have common characteristics conforming to a given specification. Accessible population were those firms whose data was available. As at closure of 31st December of 2014 as shown in appendix III, there were 64 listed firms at the NSE (NSE, 2015). Forty three non-financial firms qualified the criteria of inclusion with Umeme Ltd and all firms under investment services and Growth Enterprise Market Segment excluded for listing after 2011. With 17 listed firms at USE (USE, 2015), 7 were to be studied as the rest are in financial sector.

From 21 listed firms at DSE (DSE, 2015), 7 financials together with Swara Gas and Uchumi Supermarkets, listed after 2011 were to be excluded. With 6 listed firms at RSE (RSE, 2015), 3 financial together with Uchumi Supermarkets and Nation Media were to be excluded for listing after 2011. The target population was therefore 63 firms from a population of 108 firms. Sixty one firms were however studied as data for two firms (Swara oil & Gas from DSE & Abauman from NSE) which were suspended from the market at varied dates was not available. This translates to approximately 56.5% of the population or 96.8% of target population, which is good representation. Indeed, Gay, Mills and Airasian (2006) posit that a sample size of 20% of the target population is regarded as adequate for small population with less than a 1000 units.

3.4 Sample and Sampling Technique

A sample is a portion of the target population from which data is collected, summarised, analysed and inferences about the target population from which the sample is drawn is done (Kumar, 2005). A good sample should be logical and practicable (representative) and have regard for time, costs, validity and accuracy of the data (Kumar, 2005). To this end therefore, a census on accessible population was done due to its small size. Census is the study of whole population and as such, it enhances validity of the data and results by including all information for all the elements in the study (Saunders, Lewis & Thornhill, 2009). In addition, it eliminates sampling error (Watson, 2001).

3.5 Data and Data Collection Procedures

After getting clearance and a research introductory letter from the university, panel data was gathered from the hand books of EASE and specific companies' websites. Panel data is a series of multidimensional data where behaviours of entities are observed over time. It allows the researcher to control for variables that are not observable or measurable like culture, fiscal policies and management practices over time but not across entities (Wooldridge, 2002). Specifically, total assets, total liabilities, current liabilities, retained earnings, other shareholders' funds and profit after tax were obtained through the data collection sheet in the annexure.

3.6 Data Analysis, Interpretation and Presentation

After data was collected, it was analysed using correlations, descriptive statistics and multiple regression with the aid of STATA 12. The regression coefficients were tested for significance using t-statistic at 5% level of significance and conclusions drawn. Multiple regression is preferred in situations where the number of independent variables is more than one (Faraway, 2002), like in this study.

In addition, regression methods are integral components of any data analysis concerned with describing the effect of a response variable and one or more explanatory variables (Hosmer & Stanley, 2000). A 5% level of significance has been used in many studies like Maina and Kondongo (2013), Chisti *et al.* (2013) and Abor (2007) in the past hence a good benchmark. The 5% level of significance was compared with the p-value and significance of the predictor variable(s) concluded if the latter is less than 5% (Castillo, 2009). P-value is the exact lowest probability of rejecting the null hypothesis when it is true (Gujarati, 2003). This survey therefore well fits the technique and test.

The coefficient of determination (R^2) was used to rank explanatory variables contribution to the response variable in an attempt to validate or invalidate the pecking order theory. R^2 is the proportion of variation of the response variable that is explained by the variation of the predictor variable(s) and as such the higher it is the better (Kumar, 2005).

The regression models used for the analysis are.

1. $Rit = \beta_0 + \beta_1 SDit + \beta_2 LDit + \beta_3 RE_{it} + \beta_4 Eit + e_j$

2. $Rit = \beta_0 + \beta_1 SDit + \beta_2 LDit + \beta_3 RE_{it} + \beta_4 Eit + \beta_5 GDPR + GDPR (\beta_6 SDit + \beta_7 LDit + \beta_8 RE_{it} + \beta_9 Eit) + e_j$ [Baron & Kenny, 1986].

3. $Rit = \alpha_0 + \alpha_1 SDit + e_3$

4. $Rit = \lambda 0 + \lambda_1 LDit + e_4$

5. $Rit = a_0 + a_1 RE_{it} + e_5$

6. $Rit = b_{0+} b_1 E_{it} + e_6$

Where Rit is ROA and ROE for each firm i and year t;

ROA is net profit after tax/total assets

ROE is net profit after tax/total equity

SD is current liabilities/total assets

LD is non-current liabilities/total assets.

RE is the retained earnings/total assets

E is reserves, preference and ordinary capital/total assets

GDPR is gross domestic product growth rate

β_i, α_i, λ_i, a_i and b_i ($i=0,1\ldots,5$) are the associated regression coefficients.

E_j is the error term ($j=1,2\ldots,6$)

3.6.1 Diagnostic Tests

3.6.1.1 Multicollinearity

Variance inflation factors (VIFs) and correlation coefficients were used to test any multi-collinearity. This is a situation where there is a high degree of association between independent variables (Kothari, 2004). It is a problem that distorts the regression coefficients, making them unstable, difficult to interpret and hence invalid significance tests (Cooper & Schindler, 2006). VIF is the extent of inflation of standard errors of slopes due to presence of multicollinearity. The coefficients were be compared with 0.8 or VIF of 5 and presence of multi-collinearity concluded for those variables with at least 0.8 coefficients or VIF of at least 5 as recommended by Gujarati (2003).

3.6.1.2 Serial Correlation

Serial correlation was tested using Wooldridge F-statistic. Serial or auto correlation is a situation where the error terms for different time periods are correlated (Gujarati, 2003). This is a problem that affect the efficiency of the estimators such that the standard errors are distorted affecting the test statistic hence invalid significance test and conclusions (Gujarati, 2003). A p value of less than the 5% level of significance indicate presence of serial correlation (Wooldridge, 2002).

3.6.1.3 Heteroscedasticity

This was also tested using Whites test and conclusions drawn. Heteroscedasticity is lack of constant error variance (Gujarati, 2003). This is a problem that make the standard errors biased leading to bias or invalid test statistics and confidence intervals (Wooldridge, 2002). The results are therefore misleading. The choice of White test was necessitated by its applicability to both nonlinear models and non-normal error terms (Berry & Feldman 1985). It is a chi square test of the form nR^2 where n is the sample size and R^2 is the unadjusted coefficient of determination of the auxiliary regression (a regression equation between lagged squared error terms and predictor variables) with m (number of independent variables) degrees of freedom (df). Unless it is severe, heteroscedasticity should not be a bother since it does not result to biased parameter estimates (Gujarati, 2003).

3.6.1.4 Stationarity

Stationarity is a situation where the mean, variance and autocorrelation of data structure do not change over time (Gujarati, 2003). Stationarity test is necessary to ensure that regression results are not spurious such that there is a high coefficient of determination between variables (due to non stationarity) even if there is no cause and effect relationship (Wooldridge, 2012). Non stationarity also distort t-ratios to yield invalid significance tests (Gujarati, 2003). The augmented Dickey Fuller (ADF) unit root test

was used with the null hypothesis (b=k-1≥0) of non stationarity and if the test statistic is more negative (since it is a one sided test) than the critical value at 5% level of significance, the null is rejected to imply stationarity (Gujarati, 2003). The DF test statistic is $\frac{b}{se(b)}$ (Gujarati, 2003), where b=k-1 from the model Y_t= a+kY_{t-1}+u_t with a as the drift, Y_t the variable value at time t, Y_{t-1} the variable lagged value and u_t the error term.

3.6.1.5 Normality

The test was done to ascertain whether the variables and by extension the regression residuals were mesokurtic and non-skewed. Kurtosis refers to lopsidedness of the data while skewness is the biasness of data towards one side of the center than the other (Gujarati, 2003). Normal distribution should not be too steep (leptokurtic) or too flat (platykurtic) neither should it be positively or negatively skewed (Gujarati, 2003). While non-normality of data does not affect the consistency of the estimators, it affects their efficiency and may possibly distort the statistical tests to make them invalid (Green, 2008). This is especially so for small sample sizes. Non-normality of data however should not be a bother for big sample sizes (at least 50) like in this study, due to the central limit theory (Green, 2008).

In this study, Shapiro-Wilk test was used to test whether the regression residuals followed a normal distribution with a null hypothesis that the residuals are normally distributed. This test was preferred over the other tests since through monte carlo simulation, Razali and Wah (2011) found that it has the best power for a given significance when comparing it with Kolmogorov–Smirnov, Lilliefors, and Anderson–Darling tests. It is a test of the form

$$w = \frac{(\sum_{i=1}^{n}(a_i x_i)^2}{\sum_{i=1}^{n}(x_i - m)^2}$$

Where

x_i is the *i*th-smallest number in the sample

m is the sample mean

a_i is given by $(a_1,....,a_n)=\dfrac{v^{-1}k^t}{(kv^{-1}k^tv^{-1})^{\wedge}0.5}$

where $k=(k_1,....,kn)^t$

and $k_1,....,kn$ are the expected values of the order statistics of independent and identically distributed random variables sampled from the standard normal distribution, and V is the covariance matrix of those order statistics.

3.6.1.6 Hausman

To cater for the unobserved variables in the model and which may or may not have effect on the predictors included in the model, Hausman specification test at 5% level of significance was conducted to determine the suitability of application of random or fixed effect model (Green, 2008). The null hypothesis for this Chi square test was that the random effect model is preferred to fixed effect model and was to be rejected if the p-value is less than 5% to imply that fixed model is preferred (Green, 2008).

The key argument under fixed model is that if the unobserved variable does not change over time, then any change in the response variable must be due to influences other than these fixed characteristics (Stock & Watson, 2003). It is therefore possible to remove or hold constant the effect of those time-invariant characteristics and assess the effect of the predictors on the response variable (Stock & Watson, 2003). To the contrary, in random effects model, the variation across entities is assumed to be random and uncorrelated with the predictor variables in the model enabling time-invariant characteristics to be included in the model as predictors (Stock & Watson, 2003).

The equation for the fixed effects model therefore becomes

$Y_{it} = \beta_{1\,X_{it}} + \alpha_i + u_{it}$

Where

− α_i ($i=1\ldots$n) is the unknown intercept for each entity (n entity-specific intercepts).

− Y_{it} is the dependent variable where i = entity and t = time.

− X_{it} represents one independent variable

− β_1 is the coefficient

− u_{it} is the error term, whose covariance with $X \neq 0$

The random effects model is

$Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$

β is the coefficient

α is the intercept

ε_{it} within-entity error

u_{it} between-entity error, whose covariance with $X=0$.

While the fixed effect model restricts inferences only on the sample used, random effect model allows generalization beyond the sample to a larger population (Vicente, 2001).

3.6.1.7 Granger Causality

A variable is said to granger cause the other if it helps to make a more accurate prediction of the other variable than if only the past data of the latter was used as predictor (Zou, Ladrou, Guo, & Feng, 2010). Granger causality between two variables cannot be interpreted as a real causal relationship but merely shows that one variable can help to predict the other one better (Zou *et al.*, 2010).

Therefore, to assess the reverse cause and effect relationship between financial structure and financial performance, that is, to ascertain whether it is the financial structure which affect financial performance or vice versa, Granger causality test at 5% level of significance was undertaken. The null hypotheses was that financial structure does not granger cause financial performance with a null rejection if the p-value was less than 5%.

The models used were

$$Y_t = a_0 + a_1 Y_{t-1} + ... + a_p Y_{t-p} + b_1 X_{t-1} + ... + b_p X_{t-p} + u_t \quad .... (1)$$

$$X_t = c_0 + c_1 X_{t-1} + ... + c_p X_{t-p} + d_1 Y_{t-1} + ... + d_p Y_{t-p} + v_t \quad ....(2)$$

Where

Y is either ROA or ROE

X is SD, LD, E or RE

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the research findings and a discussion of the same in line with the objectives of the study as guided by the techniques mentioned in chapter three. It starts with a discussion on the descriptive statistics, then diagnostic tests performed to validate the use of the techniques as appropriate and inferential statistics coupled with their interpretations.

As explained in chapter three, the study targeted all the 63 non-financial listed companies that have traded for at least three years at the NSE, RSE, DSE and USE for the period December 2006-2014. Of the 63, 43 were from NSE, 7 from USE, 12 from DSE and one from RSE. 61firms were however studied as data for two firms (Swara oil & Gas from DSE and Abauman from NSE) was not available since the two firms were suspended from their markets at varied dates during the period under study. This translates to approximately 96.8% of target population, which is good representation as supported by Gay, Mills and Airasian (2006) who posit that a sample size of 20% of the target population is adequate for small population with less than a 1000 units.

4.2 Summary Statistics

As shown in table 4.1, for all firms in EASE the average ROE over the period was 20.85% with a minimum value of -10.18, maximum value of 19.94 and a standard deviation of 1.19928. This shows that though on average firms had a positive return on equity, the majority of firms ROE are to the right of the distribution just like ROA. The mean ROA was 10.76% with a standard deviation of 0.15793 and a minimum and maximum of -0.54 and 1.64 respectively. This shows that firms were generally

profitable to reward the investment in assets. The fluctuation of returns in ROE were however higher than ROA as shown by standard deviations.

The average short term and long term debts to total assets are 28.89% and 16.97% respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The maximum borrowings also reaffirms this position as shown in table 4.1 with short term debt to total assets ratio being 1.11 and long term to total assets ratio being 0.82. This could imply that short-term debt financing was easily available compared to the long term debt which is usually associated with high value collateral and at times restrictive covenants to make it unattractive. All firms however reported positive skewness on their debts to show that majority lied on the right tail of the distribution. This findings contradict Mwangi *et al*. (2014) who concluded that majority of firms at the NSE use long term debt to finance their assets.

The average retained earnings to total asset over the period was 18.94%, minimum of -0.84 and maximum of .82 with a negative skewness of -0.424. This implies that majority of firms were utilizing their retained earnings above average usage and therefore lied on the left tail of the distribution. The mean equity to total assets ratio is 35.2% with a minimum of -0.11, maximum of 1.05 and a positive skewness of 0.61. This show that though generally firms raised capital through shares, majority were to the right tail. Finally, the average GDP growth rate over the period was 5.4525%, minimum of 0.2% and maximum of 10.4% with a negative skewness of -0.886.

At the NSE, the average ROE over the period was 192.08% with a minimum value of -0.65, maximum value of 7.13 and a standard deviation of 1.524. This shows that though on average firms had a huge positive return on equity, the majority of firms ROE are to the right of the distribution just like ROA. The mean ROA was 134.95% with a standard deviation of 1.349 and a minimum and maximum of -6.36 and 5.04 respectively. This shows that firms were generally highly profitable towards their investment in assets. The fluctuation of returns in ROE were however marginally higher than ROA as shown by

standard deviations. This results are supported by Mwangi *et al.* (2014) who concluded that firms at NSE have a higher ROE than ROA with a higher variability in ROE too.

The average short term and long term debts to total assets are 28.54% and 17.88% respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The maximum borrowings also reaffirms this position with short term debt to total assets ration being .88 and long term to total assets ratio being 0.82. This could imply that short-term debt financing was less costly compared to the long term debt which is usually associated with high value collateral and at times restrictive covenants to make it unattractive. A positive skewness by all firms at NSE on their short and long term debts show that majority lied on the right tail of the distribution. This findings contradict Mwangi *et al.* (2014) who concluded that majority of firms at the NSE use long term debt to finance their assets.

The average retained earnings to total asset over the period was 16.03%, minimum of - 0.84 and maximum of .65 with a negative skewness of -0.915. This implies that majority of firms were utilizing their retained earnings above average usage and therefore lied on the left tail of the distribution. The mean equity to total assets ratio is 37.56% with a minimum of -0.11, maximum of .99 and a positive skewness of 0.484. This show that though generally firms raised capital through shares, majority were to the right tail. Finally, the average GDP growth rate over the period was 5.094%, minimum of 0.2% and maximum of 8.4% with a negative skewness of -0.779. This shows that the GDP for majority of the periods under study were above the country average.

At the RSE, the average ROE over the period was 38.28% with a minimum value of .16, maximum value of .57 and a standard deviation of .17964. This shows that though on average firms had a relative positive return on equity, the majority of firms ROE are to the left of the distribution just like ROA. The mean ROA was 249% with a standard deviation of .47392 and a minimum and maximum of 1.69 and 2.85 respectively. This shows that firms were generally highly profitable towards their investment in assets. The

fluctuation of returns in ROA were however higher than ROE as shown by standard deviations. This results contrasts the NSE findings on the same variables.

The average short term and long term debts to total assets are 56.2% and 3.6% respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The maximum borrowings also reaffirms this position with short term debt to total assets ration being .59 and long term to total assets ratio being 0.08. This could imply that like at the NSE, short-term debt financing was less costly and perhaps easily available compared to the long term debt. A positive skewness by all firms at RSE on their short and long term debts show that majority lied on the right tail of the distribution.

The average retained earnings to total asset over the period was 35.2%, minimum of .34 and maximum of .37 with a positive skewness of .541. This implies that fewer firms were utilizing their retained earnings above average usage and therefore lied on the right tail of the distribution. The mean equity to total assets ratio is 5.2% with a minimum of .03, maximum of .07 and a negative skewness of -0.052. This show that few firms raised capital through shares perhaps due to the fact that RSE is relatively new and not developed to attract huge capital raisers. Finally, the average GDP growth rate over the period was 7.15%, minimum of 4.6% and maximum of 82% with a negative skewness of -1.899. This shows that the GDP for majority of the periods under study were above the country average. It worth noting that the average GDP was higher at RSE than NSE. This could be due to high donor interest in the Rwanda economy to rebuild it after overcoming the perhaps one of the worst genocide in the region.

At the USE, the average ROE over the period was 1.1926 with a minimum value of 0 maximum value of 3.43 and a standard deviation of .90029. This shows that though on average firms had a high positive return on equity, the majority of firms ROE are to the right of the distribution like ROA. The mean ROA was 1.3016 with a standard deviation of 1.69 and a minimum and maximum of -1.53 and 6.58 respectively. This shows that

firms were generally able to generate high returns. The fluctuation of returns in ROA were however higher than ROE as shown by standard deviations.

The average short term and long term debts to total assets are .4158 and .1553 respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The minimum borrowings also reaffirms this position with short term debt to total assets ration being .01and long term to total assets ratio being 0. This could imply that like at the NSE, RSE and DSE, short-term debt financing was less costly and perhaps easily available compared to the long term debt. Worth noting is that there were firms that operated without long term borrowing too like at DSE. A positive skewness by all firms at DSE on their short and long term debts show that majority lied on the right tail of the distribution.

The average retained earnings to total asset over the period was .2171, minimum of -.19 and maximum of .7 with a positive skewness of .669. This implies that many firms were utilizing their retained earnings below the average usage and therefore lied on the right tail of the distribution. The mean equity to total assets ratio is .2105 with a minimum of 0, maximum of .55 and a positive skewness of .686. This show that firms financed their assets through retained earnings more than shares. The average GDP growth rate over the period was 5.94%, minimum of 3.6% and maximum of 107.4% with a positive skewness of .828. This shows that the GDP for majority of the periods under study were below the country average.

At the DSE, the average ROE over the period was 2.34 with a minimum value of .02 maximum value of 7.23 and a standard deviation of 2.64. This shows that though on average firms had a high positive return on equity, the majority of firms ROE are to the right of the distribution unlike ROA. The mean ROA was 2.137 with a standard deviation of 2.71 and a minimum and maximum of -5.3 and 5.75 respectively. This shows that firms were generally highly profitable towards their investment in assets. The fluctuation of returns in ROA were however higher than ROE as shown by standard

deviations. This results partly agree with those of NSE on average returns but differ on skewness.

The average short term and long term debts to total assets are .1415 and .205 respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The minimum borrowings also reaffirms this position with short term debt to total assets ration being .01and long term to total assets ratio being 0. This could imply that like at the NSE, short-term debt financing was less costly and perhaps easily available compared to the long term debt. Worth noting is that there were firms that operated without long term borrowing. A positive skewness by all firms at DSE on their short and long term debts show that majority lied on the right tail of the distribution.

The average retained earnings to total asset over the period was .3115, minimum of -.83 and maximum of .82 with a negative skewness of -.638. This implies that many firms were utilizing their retained earnings above average usage and therefore lied on the left tail of the distribution. The mean equity to total assets ratio is 34.18% with a minimum of 0, maximum of 1.05 and a positive skewness of .653. This show that firms raised capital through shares more than retained earnings may be since DSE is relatively developed to attract huge capital raisers. The average GDP growth rate over the period was 6.857%, minimum of 6% and maximum of 7.4% with a negative skewness of -1.041. This shows that the GDP for majority of the periods under study were above the country average. It worth noting that the average GDP was higher at DSE than NSE but lower than RSE.

Table 4.1 Summary Statistics

		N	Minimum	Maximum	Mean	Std. Deviation	Skewness
EASE	GDP(%)	418	0.2	10.4	5.4525	2.20671	-0.886
	SD	418	0	1.11	0.2889	0.20904	1.032
	LD	418	0	0.82	0.1697	0.16119	1.507
	E	418	-0.11	1.05	0.352	0.25056	0.61
	RE	418	-0.84	0.82	0.1894	0.26588	-0.424
	ROA	418	-0.54	1.64	0.1076	0.15793	2.67
	ROE	418	-10.18	19.94	0.2085	1.19928	8.999
NSE	GDP	315	0.2	8.4	5.094	2.3002	-0.779
	SD	315	0	0.88	0.2854	0.18754	0.673
	LD	315	0	0.82	0.1788	0.16462	1.474
	E	315	-0.11	0.99	0.3756	0.21915	0.484
	RE	315	-0.84	0.65	0.1603	0.23151	-0.915
	ROA	315	-6.36	5.04	0.7861	1.34958	-0.686
	ROE	315	-0.65	7.13	1.9208	1.52446	0.884
RSE	GDP	5	4.6	8.2	7.15	1.47394	-1.899
	SD	5	0.54	0.59	0.562	0.01924	0.59
	LD	5	0.02	0.08	0.036	0.02608	1.714
	E	5	0.03	0.07	0.052	0.01789	-0.052
	RE	5	0.34	0.37	0.352	0.01304	0.541
	ROA	5	1.69	2.85	2.49	0.47392	-1.7
	ROE	5	0.16	0.57	0.382	0.17964	-0.364
DSE	GDP	60	6	7.4	6.857	0.3855	-1.041
	SD	60	0.01	0.66	0.205	0.1495	1.128
	LD	60	0	0.66	0.1415	0.14962	2.21
	E	60	0	1.05	0.3418	0.38461	0.653
	RE	60	-0.83	0.82	0.3115	0.3975	-0.638
	ROA	60	-5.3	5.75	2.137	2.719	-0.577
	ROE	60	0.02	7.23	2.3452	2.63629	0.66
USE	GDP	38	3.6	10.4	5.984	2.1295	0.828
	SD	38	0.01	1.11	0.4158	0.34695	0.634
	LD	38	0	0.52	0.1553	0.15074	0.627
	E	38	0	0.55	0.2105	0.15985	0.686
	RE	38	-0.19	0.7	0.2171	0.23371	0.669
	ROA	38	-1.53	6.58	1.3016	1.6946	1.32
	ROE	38	0	3.43	1.1926	0.90029	0.722

4.3 Diagnostic Tests Results

This are tests performed on the data variables to ensure conformity with the requirements of the multiple regression technique used and to ensure that the results are more robust and valid.

4.3.1 Multicollinearity

As shown in table 4.2 all the VIFs were less than 5 and correlation coefficients between variables (in absolute form) were less than 0.8 indicating that there was no multicollinearity (Gujarati, 2003). This is an assurance that the regression coefficients were stable hence valid significance tests as put by Cooper and Schindler (2006). The correlation coefficients were determined to ascertain the pairwise association between explanatory variables and perhaps identify those could have been severely related but their severity is reduced by interaction with the others.

Table 4.2 Correlations Coefficients and VIFs

	SD	LD	E	RE	GDP	VIFs
SD	1					1.354
LD	-0.2979	1				1.110
E	-0.4267	0.0384	1			1.238
RE	-0.2032	-0.4077	-0.6299	1		0.000
GDP	0.0091	0.0093	-0.0401	0.025	1	1.002

Source: Researcher

4.3.2 Serial (Auto Correlation) Correlation

As shown in tables 4.3, F statistics for the models with and without moderation of GDP rate were 12.063 and 63.232 with ROA as the response variable and 12.016 and 127.57 with ROE as the response variable respectively. The p value for both ROA and ROE models without moderation was 0.0000 and 0.001 for both with moderation. The test

statistics were therefore significant in all cases at 5% level of significance to indicate presence of first order serial correlation in the data.

To remedy this problem, feasible generalized least squares (FGLS) method was therefore used. This method also guarantee the efficiency and consistency of the estimators for valid significance tests. FGLS is preferred to GLS since the true values of the variances and covariances for the disturbance terms as used by the GLS estimator are unknown in reality and therefore the GLS estimator is not a feasible estimator (Wooldridge, 2002). The FGLS procedure by Wooldridge (2002) is as follows

1. Regress Y on X_t and obtain the residuals U_t
2. Regress the residuals agaist lagged residuals, U_{t-1} to obtain the coefficients (p) of U_{t-1}
3. Use OLS equation on the following equation
   $y_t = \beta_0 x_{to} + \beta_1 x_{t1} + \beta_2 x_{t2} + \ldots + \beta_k E\ x_{tk}\ it + e_t$
   where
   $x_{to} = (1-p)$ for $t \geq 2$ and

$x_{1o} = (1-p^2)^{1/2}$

The resulting slopes (β_j) are consistent and efficient.

Table 4.3 Wooldridge Test for Autocorrelation

Dependent variable	Model	F(1, 56)	Prob>F
ROA	1	63.232	0
	2	12.063	0.001
ROE	1	127.57	0
	2	12.016	0.001

Model 1: With moderator; Model 2: Without moderator

Source: Researcher

4.3.3 Heteroscedasticity

The null hypothesis was no heteroscedasticity for all models with or without moderator. For a regression model with ROA as the response variable, the test yielded a chi-square value of 342.45 with a p-value of 0.000 with moderation as shown in table 4.4 and a chi-square value of 54.27 with a p-value of 0.000 without moderation. The chi-square values were in both cases statistically significant at 5% significance level and hence the null hypotheses were rejected to signify the existence of heteroscedasticity. To overcome the problem so as to make the standard errors unbiased leading to valid test statistics and hence significance tests as advocated by Wooldridge (2002), FGLS method was used.

For a regression model with ROE as the response variable, the test yielded a chi-square value of 342.02 with a p-value of 0.0000 with moderation as shown in table 4.4 and a chi-square value of 71.05 with a p-value of 0.0000 without moderation. The chi-square values were again in both cases statistically significant at 5% significance level and hence the null hypotheses were rejected to signify the existence of heteroscedasticity. Subsequently, FGLS method was employed to overcome the problem.

Table 4.4 Heteroscedasticity Test Statistics

Response Variable	Model	Chi Square	Degree of freedom	p value
ROA	1	342.45	54	0.0000
	2	54.27	14	0.0000
ROE	1	342.02	54	0.0000
	2	71.05	14	0.0000

Source: Researcher

4.3.4 Stationarity

As shown in table 4.5, the null hypotheses that all panels contain unit roots for all variables were rejected at 5% significance level since the p values were less than 5%. This therefore implies that all the variables were stationary (no unit roots) and hence robust regression results even without lags (at level).

Table 4.5 Unit Root Test Statistics

Variable			Statistic	p-value
SD	Inverse chi-squared (108)	P	353.2237	0
	Inverse normal	Z	-12.3446	0
	Inverse logit t (274)	L*	-12.8585	0
	Modified inv. chi-squared	Pm	16.6854	0
LD	Inverse chi-squared(106)	P	260.3673	0
	Inverse normal	Z	-8.2288	0
	Inverse logit t(269)	L*	-8.3283	0
	Modified inv. chi-squared	Pm	10.602	0
E	Inverse chi-squared(108)	P	321.4414	0
	Inverse normal	Z	-11.0973	0
	Inverse logit t(274)	L*	-11.5332	0
	Modified inv. chi-squared	Pm	14.5228	0
RE	Inverse chi-squared(106)	P	315.9907	0
	Inverse normal	Z	-11.3668	0
	Inverse logit t(269)	L*	-11.5713	0
	Modified inv. chi-squared	Pm	14.4222	0
GDP	Inverse chi-squared(108)	P	388.2542	0
	Inverse normal	Z	-14.0129	0
	Inverse logit t(274)	L*	-14.4548	0
	Modified inv. chi-squared	Pm	19.0689	0

Source: Researcher

4.3.5 Hausman Specification

As shown in tables 4.6 for ROA and ROE models without moderator, the nulls were failed to be rejected since the p values, 0.0933 and 0.2159 respectively were greater than 5% level of significance. This implies that random effects models were preferred. When GDP growth rate was incorporated, the nulls for both ROA and ROE were rejected since the p values 0.0109 and 0.011 respectively were less than 5% level of significance implying that fixed effects models were preferred. This in in tandem with Green (2008) recommendations.

Table 4.6 Hausman Test Statistics

Variable	Model		(b) fixed	(B) -	(b-B) Difference	sqrt (diag (V_b-V_B)) S.E.
			---- Coefficients ----			
ROA	1	SD	-6.162088	-4.393691	-1.768397	1.915281
		LD	-6.528829	-4.180188	-2.348641	1.857392
		E	-6.082275	-4.344404	-1.737871	1.8665
		RE	-.4575947	1.666928	-2.124523	1.883982
			Chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)=7.95			
			Prob>Chi2 = 0.0933			
	2	SD	-4.741669	-3.459543	-1.282126	1.102641
		LD	-3.157973	-1.362379	-1.795594	1.070211
		E	-7.145676	-5.58271	-1.562965	1.069112
		RE	-1.317371	.3380434	-1.655414	1.08247
		GDP	.4279934	.4113402	.0166532	.0090357
		SDG	-.3260188	-.1522648	-.173754	.0844924
		LDG	-.0146397	-.020199	.0055593	.0020513
		EG	-.7781545	-.734535	-.0436196	.0263641
		REG	-.4149003	-.3786205	-.0362799	.0151331
			Chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)=21.43			
			Prob>Chi2 = 0.0109			
ROE	1	SD	1.672594	.7052451	.9673489	2.650566
		LD	2.824922	.694811	2.130111	2.561379
		E	7.42026	6.303197	1.117063	2.576494
		RE	1.226081	.5777347	.6483459	2.604077
			chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)=5.78			
			Prob>chi2 = 0.2159			
	2	SD	4.724216	3.450914	1.273302	1.104022
		LD	3.141511	1.355923	1.785589	1.071575
		E	7.127501	5.573268	1.554233	1.070465
		RE	1.296285	-.3494023	1.645688	1.083829
		GDP	.5721146	.5887092	-.0165945	.0090464
		SDG	.3297956	.1550654	.1747301	.0845912
		LDG	.0147709	.020347	-.0055761	.0020536
		EG	-.2222397	-.2659737	.0437339	.0263943
		REG	-.5859053	-.6220038	.0360985	.0151517
			chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)=21.39			
			Prob>chi2 = 0.0110			

Model 1 is without moderator; Model 2 is with moderator

Source: Researcher

4.3.6 Normality

The Shapiro Wilk results for all regression models (with and without the moderator) were a $w=0.861$ with a p value of 0.000. This therefore indicated that the null was rejected at 5% level of significance to imply that the residuals were not normally distributed. To overcome this problem that may distort the significance tests, robust standard errors were used instead of the normal standard errors (Gujarati, 2003). Robust standard errors generally improves the efficiency of the estimators (Green, 2008).

4.4 Granger Causality

As shown in table 4.7, the p-values for all lagged financial structure components in isolation against ROA are greater than 5% level of significance implying that the null hypotheses that financial structure does not granger cause financial performance are not rejected. When all lagged values of financial structure are run against ROA, the p values are zero, which are less than 5% level of significance hence the null hypothesis that financial structure does not granger cause financial performance is rejected. This results contradict Dragota, Dragota, Obreja and Semenescu (2008) who concluded that the null hypothesis of capital structure as measured by leverage does not Granger cause profitability, measured by EBIT, cannot be rejected. The same results are replicated when financial structure components are run against ROE.

The p-values for all lagged values of ROA and ROE regressed against SD, LD, E, RE and all combined are all greater than 5% level of significance hence the null hypotheses that financial performance does not granger cause financial structure is not rejected. This is in agreement with Dragota *et al.* (2008) who observed that profitability does not Granger cause capital structure of listed firms in Romania.

In summary, the tests imply that while a single component of financial structure does not granger cause financial performance, a mixture of the same does. Financial performance does not however granger cause financial structure. This results fully agree with

Skopljak and Luo (2012) who concluded that the quadratic term (1/2ECAP^2) of capital structure of listed Australian Firms between 2005-2007 granger-cause profit efficiency but profit efficiency does not Granger-cause the quadratic term of capital structure (1/2ECAP^2) at 10% level of significance. Capital structure (ECAP) was measured by equity/total assets while profit efficiency was measured by ROE. Both Dragota *et al.* (2008) and Skopljak and Luo (2012) studies used two lags in the test models, the minimum available to them as data was stationery just like in this study.

Table 4.7 Granger Causality Test

VARIABLE			
Dependent	**Independent(Lagged)**	**F-statistic**	**p- value**
ROA	SD	2.07	0.1275
	LD	1.82	.1647
	E	2	.1372
	RE	2.2	.1128
	SD,LD	2.3	0.0588
	SD,LD,E	1.72	0.1172
	SD,LD,E,RE	5.46	0
	SD,LD,E,RE,ROA	52.33	0
ROE	SD	2.22	0.1107
	LD	1.95	.1447
	E	1.72	.1810
	RE	2.13	.1202
	SD,LD	1.69	0.1529
	SD,LD,E	18.33	0
	SD,LD,E,RE	14.7	0
	SD,LD,E,RE,ROE	38.04	0
SD	ROA	.04	.9632
	ROA,SD	117.97	0
	ROE	.37	.6917
	ROE,SD	118.08	0
LD	ROA	.89	.4108
	ROA,LD	180.41	0
	ROE	2	.1375
	ROE, LD	179.05	0
E	ROA	.12	.8856
	ROA, E	112.74	0
	ROE	.5	.6097
	ROE,E	113.16	0
RE	ROA	1.43	.2405
	ROA,RE	133.28	0
	ROE	.49	.6111
	ROE,RE	131.31	0
TC	ROA	1.44	.2388
	ROA,TC	.97	.4249
	ROE	.82	.4406
	ROE,TC	.66	.6208

4.4 Regressions Statistics

Several regression models were run in line with the objectives of the study having properly accounted for all diagnostic tests.

4.4.1 Effect of Short Term Debt on Financial Performance of Firms Listed at EASE

As shown in table 4.8, results on the effect of financial structure on ROA show that the coefficient of SD was -6.76 hence SD had a negative impact on ROA. The p value was 0.153 which is greater than 5% level of significance. This indicate that SD had an insignificant inverse effect on ROA. With regard to ROE, the coefficient of SD was 2.644 hence SD had a positive relationship on ROE. The p value was 0.709 which is greater than 5% level of significance implying an insignificant impact of SD on ROE.

This findings were consistent with MM (1963) capital structure irrelevance theory that the amount of debt in the capital structure does not affect the performance and the value of the firm. The negative effect of debt on the firm performance tends to support the pecking order theory too. The results also agree with Ebaid (2009) who concluded that capital structure has little or no impact on a firm's performance in Egypt. They are also consistent with Afza and Nazir (2007) who concluded that aggressive financing policy and firm's profitability are negatively related. However, the findings contradict those of Abdul (2012) who found that financial leverage has a significant negative relationship with firm's performance, measured by ROA in Pakistan. This indicate that SD had a statistically insignificant positive relationship with ROE.

Table 4.8 FGLS Regression Results of SD as Independent Variable-Random Effects Model

SD	Coefficient.	Std. Err.	Z	P>z
ROA	-6.760795	4.73033	-1.43	0.153
ROE	2.644535	7.08732	0.37	0.709

Source: Researcher

4.4.2 Effect of Long Term Debt on Financial Performance of Firms Listed at EASE

In table 4.9, results show that the coefficient of LD with respect to ROA was -6.13 hence LD had a negative effect on ROA. The p value was 0.162 which is greater than 5% level of significance. This indicate that LD had an insignificant inverse impact on ROA. With regard to ROE, the coefficient of LD was 2.617 hence LD had a positive relationship with ROE. The p value was 0.712 which is greater than 5% level of significance. This indicate that LD had an insignificant positive effect with ROE.

This findings were consistent with MM (1953) capital structure irrelevance theory that the amount of debt in the capital structure does not affect the performance and the value of the firm. While the results agreed with Abor (2005) on SD and ROE, they contradict his findings on LD since he concluded a negative relationship. The findings also differ with Mumtaz, Rauf, Bashir and Noreen (2013) on the significance of the relationship since he found out that financial performance of firms in Pakistan is significantly affected by their capital structure. In terms of the nature of the relationship, this study complement Mumtaz *et al.* (2013) who also found a negative relationship.

Table 4.9 FGLS Regression Results of LD as Independent variable-Random Effects Model

LD	Coefficient.	Std. Err.	Z	P>z
ROA	-6.760795	4.73033	-1.43	0.153
ROE	2.616849	7.092413	0.37	0.712

Source: Researcher

4.4.3 Effect of RE on Financial Performance of Firms Listed at EASE

As shown in table 4.10, the coefficients of RE were -1.14 and 2.45 with regard to ROA and ROE respectively. This showed that RE had a negative effect with respect to ROA and a positive effect with respect to ROE. The p values were 0.809 and 0.729 with

regard to ROA and ROE respectively. This implied that RE had an insignificant inverse effect on ROA but insignificant positive effect on ROE.

Table 4.10 FGLS Regression Results of RE as Independent Variable-Random Effects Model

RE	Coefficient.	Std. Err.	Z	P>z
ROA	-1.14242	4.73269	-0.24	0.809
ROE	2.452277	7.089415	0.35	0.729

Source: Researcher

4.4.4 Effect of E on Financial Performance of Firms Listed at EASE

As shown in table 4.11, the coefficients of E were -6.750 and 7.931728 with regard to ROA and ROE respectively. This demonstrated a negative effect of E on ROA but a positive effect on ROE. The p values were 0.154 and 0.263 with respect to ROA and ROE respectively showing insignificant effect of E on both ROA and ROE.

Overall, the ROA model results agreed with Abor (2007) who concluded a negative effect of all capital structure sources but contradicts Ishaya and Abduljeleel (2014) who concluded that a positive effect of equity and profitability exist. In addition, the model is significant and strong with a p value of 0.0000 of being greater than the Wald Chi-square of 2447.24 and a coefficient of determination of 82.9%. This implies that financial structure components are able to explain to the extent of 82.9% of ROA with only 17.1% left to other variables not in the model or by chance.

It is interesting to note that while all individual predictors are insignificant at 5% level of significance, the overall model is significant and even the coefficient of determination is high. There is nothing inconsistent between this relationships, it's simply because the coefficient of determination never decreases when you add variables to the model but multicollinearity between predictors changes (Paul, 2006). Slight multicollinearity

makes confidence intervals to be much wider, leading to the acceptance of the null hypothesis more easily due to relatively large standard error (Gujarati, 2003). Paul (2006) posit that although the t ratio of one or more of the coefficients is more likely to be insignificant with multicollinearity, the coefficient of determination for the model can still be relatively high, like exhibited in this analysis. This possibility may have been due to -0.6 correlation between RE and E and 0.4 correlation between E and SD which are close to 0.8 as a benchmark for concluding multicollinearity.

The ROE model results contradict Abor (2007) who concluded a negative effect of all capital structure sources and ROE but agree with Ishaya and Abduljeleel (2014) who concluded that a positive effect of equity on profitability exists. Overall model is however significant and strong with a p value of 0.0000 of being greater than the Wald Chi-square of 799.65 and a coefficient of determination of 69.73%. This implies that financial structure components are able to explain to the extent of 67.19% of ROE with only 32.81% left to other variables not in the model or by chance. The overall models were

ROA= 6.64 -6.76SDit-6.61LDit -1.14RE$_{it}$-6.75Eit

ROE= 2.648 +2.645SDit+2.617+LDit +2.45RE$_{it}$+7.932Eit

Table 4.11 FGLS Regression Results of E as Independent variable-Random Effects Model

ROA	Coefficient.	Std. Err.	Z	P>z
ROA	-6.750107	4.73323	-1.43	0.154
ROE	7.931728	7.08775	1.12	0.263
Overall model				
ROA-cons	6.645838	4.7299	1.41	0.16
Prob > Chi	.0000	R2=82.9		Wald Chi 2(4)=2447.24
ROE-cons	-2.647566	7.0866	-0.37	0.709
Prob > Chi	.0000	R2= 0.6719		Wald chi2(4)=799.65

Source: Researcher

4.4.5 Moderating Effect of GDP Growth Rate on the Effect of Financial Structure on Financial Performance of Firms Listed at the EASE

As shown in table 4.12, results on the effect of financial structure on ROA while GDP is incorporated in the model show that the coefficient of SDG was -0.303 hence SD had a negative impact on ROA as GDP growth increased. The p value was 0.029 which is less than 5% level of significance. This indicate that the moderating effect of GDP growth rate on SD was statistically significant on ROA's contribution. The coefficient of LDG was -0.0059 hence LD had a negative effect on ROA as GDP growth rate increased. The p value was 0.762 which is greater than 5% level of significance. This indicate that the moderating effect of GDP growth rate on LD was statistically insignificant on ROA's contribution.

Similarly, the coefficients of EG and REG were also negative at -0.698 and -0.37 respectively showing that E and RE had a negative effect on ROA too when GDP growth increased. The p values were 0 for both hence the moderating effect of GDP growth rate on E and RE was significant on ROA's contribution at 5% level of significance. The overall moderating effect of GDP growth rate on explanatory variables towards ROA was 9.2% since the proportion of variation of ROA due to the variation in the explanatory variables when the moderator was incorporated was 92.1%, compared with 82.9% without the moderator.

It is worth noting that this coefficients of determination were determined using the regression with panel corrected standard error (PCSE) approach, as an alternative to FGLS (Beck & Katz, 1995). According to Beck & Katz (1995), like FGLS, PCSE is used when the disturbances are assumed to be either heteroscedastic across panels or heteroscedastic and contemporaneously correlated across panels. The disturbances may also be assumed to be autocorrelated within panel, and the autocorrelation parameter

may be constant across panels or different for each panel like in this study. While both approaches yield consistent and very close estimators, FGLS estimators are more efficient. Indeed, the standard errors for the FGLS model are 50%−100% smaller than those of PCSE model (Beck & Katz, 1995). This in essence implies that the coefficient of determination determined by PCSE is smaller than but close to FGLS. Since FGLS does not provide the coefficient of determination, PCSE was therefore used as an alternative to approximate the coefficients of determination.

Indeed, Akinlo and Egbetunde (2010) in examining the long run causal effect of financial development and economic growth for 10 countries in Sub Saharan Africa found that financial development is co-integrated with economic growth and in particular a bidirectional effect of financial development and economic growth in Kenya existed, supporting this findings. Visser *et al.* (2014), in analyzing the impact of macroeconomic circumstances and social protection expenditure on economic deprivation in Europe found that indeed GDP growth rate had an interaction effect with social protection on economic strain. This study too found GDP growth rate to have an interaction effect with financial structure and hence supported by Visser *et al.* (2014).

To determine the average marginal effect of financial structure components on ROA and ROE, the regression model 2 in data analysis section is differentiated partially with respect to each component and then the average GDP is incorporated in the differentiated models as below.

$$\frac{\partial Rit}{\partial SDit} = \beta_1 + \beta_6 \text{GDPR} = -5.807 + 5.45 = -0.357$$

$$\frac{\partial Rit}{\partial LDit} = \beta_2 + \beta_7 \text{GDPR}) = -3.936 + 5.45 = 1.514$$

$$\frac{\partial Rit}{\partial REit} = \beta_3 + \beta_8 \text{GDPR} = -2.138 + 5.45 = 3.312$$

$$\frac{\partial Rit}{\partial Eit} = \beta_4 + \beta_9 \text{GDPR} = -7.76 + 5.45 = -2.31$$

This marginal changes show how much ROA increased or decreased with an increase in one unit of the relevant financial structure component when the average moderator value was incorporated. When this values are compared with the coefficients of ROA model without the moderator, they are different further supporting the fact that GDP growth rate has indeed a moderating effect on the relationship.

Table 4.12 FGLS Regression Results of ROA as Dependent Variable with Moderator-Fixed Effects Model

ROA	Coef.	Std. Err.	Z	P>z
SD	-5.807451	3.109566	-1.87	0.062
LD	-3.935761	3.109666	-1.27	0.206
E	-7.760367	3.108278	-2.5	0.013
RE	-2.137549	3.107341	-0.69	0.492
GDP	0.403187	0.021985	18.34	0
SDG	-0.3025945	0.138365	-2.19	0.029
LDG	-0.0059448	0.019643	-0.3	0.762
EG	-0.6984889	0.067313	-10.38	0
REG	-0.3704068	0.04203	-8.81	0
_cons	5.577779	3.103793	1.8	0.072
Prob >Chi	.0000	$R^2 = 0.921$		Wald chi2(9)=5681.27

Source: Researcher

As shown in table 4.13, results on the effect of financial structure on ROE while GDP growth rate is incorporated in the model show that the coefficient of SDG was 0.305 hence SD had a positive effect on ROE as GDP growth rate increased. The p value was 0.028 which is less than 5% level of significance. This indicate that the moderating effect of GDP growth rate on SD was significant on ROE's contribution. The coefficient of LDG was 0.006 hence a positive relationship between LD and ROE when GDP increased. The p value was 0.761 which is greater than 5% level of significance. This indicate that moderating effect of GDP growth rate on LD was insignificant on ROE's contribution.

The coefficients of EG and REG were negative at -0.302 and -0.63 respectively showing a negative impact of E and RE towards ROE too just like when there is no moderator. The p values were 0 for both hence the moderating effect of GDP growth rate on E and RE was significant on ROE's contribution at 5% level of significance. The overall moderating effect of GDP growth rate on the financial structure towards ROE was 26.85% since the proportion of variation of the ROE due to variation in the explanatory variables when the moderator is incorporated was 94.04%, compared with 67.19% without the moderator. Kanwal and Nadeem (2013) using the real GDP as independent variable found that it had an insignificant impact on ROE and ROA, to suggest that it may have impact on the financial structure in an insignificant manner as has been observed in this study.

To determine the average marginal effect of financial structure components on ROA and ROE, the regression model 2 in data analysis section is differentiated partially with respect to each component and then the average GDP is incorporated in the differentiated models as below.

$$\frac{\partial Rit}{\partial SDit} = \beta_1 + \beta_6 GDPR = 5.77 + 5.45 = 10.22$$

$$\frac{\partial Rit}{\partial LDit} = \beta_2 + \beta_7 GDPR = 3.9 + 5.45 = 9.35$$

$$\frac{\partial Rit}{\partial REit} = \beta_3 + \beta_8 GDPR = 2.1 + 5.45 = 7.55$$

$$\frac{\partial Rit}{\partial Eit} = \beta_4 + \beta_9 GDPR = 7.72 + 5.45 = 13.17$$

This marginal changes show how much ROE increased with an increase in one unit of the relevant financial structure component when the average moderator value was incorporated. When this values are compared with the coefficients of ROE model without the moderator, they are different further supporting the fact that GDP growth rate had indeed a moderating effect on the relationship.

Table 4.13 FGLS Regression Results of ROE as Dependent Variable with Moderator-Fixed Effects Model

ROE	Coef.	Std. Err.	Z	P>z
SD	5.768252	3.110715	1.85	0.064
LD	3.898061	3.110653	1.25	0.21
E	7.721012	3.109442	2.48	0.013
RE	2.09508	3.108464	0.67	0.5
GDP	0.5967804	0.022006	27.12	0
SDG	0.3047437	0.138402	2.2	0.028
LDG	0.0059859	0.019663	0.3	0.761
EG	-0.3018437	0.06734	-4.48	0
REG	-0.6299905	0.04208	-14.97	0
_cons	-5.537366	3.104953	-1.78	0.075
Prob>Chi	.0000	R^2=.9404		Wald chi2(9)=5855.78

Source: Researcher

4.4.6 Effect of Financial Structure on Financial Performance among EASE

As shown in table 4.14, regression results of ROA as dependent variable without GDP growth rate moderation show that the effect of financial structure on financial performance in USE and DSE were the same in all respects since all the coefficients of SD, LD, E and RE were negative showing that any increase in any of the component of financial structure had an inverse effect on ROA though with different magnitudes. The highest negative in DSE is -6.288 for LD and -27.488 for E in USE. At the NSE, SD, LD and E had negative effect on ROA while RE had a positive effect.

In contrast to all other markets, RSE had a positive effect of all components of financial structure on financial performance. This results show that the effect of financial structure on ROA amongst securities exchanges are different. However, while the components of financial structure contribute differently in magnitude to ROA, such contributions are all not significant at 5% level of significance since all their p-values are greater than 5%.

Table 4.14 FGLS Regression Results of ROA as Dependent Variable without Moderator for Different Securities Exchanges

	ROA	Coef.	Std. Err.	Z	P>z
NSE	SD	-4.93178	5.531613	-0.89	0.373
	LD	-5.17752	5.528463	-0.94	0.349
	E	-4.912	5.536577	-0.89	0.375
	RE	0.18720	5.532934	0.03	0.973
	_cons	4.92039	5.532074	0.89	0.374
RSE	SD	623	.0000161 3.9e+07	0	623
	LD	500.5	.0000126 4.0e+07	0	500.5
	E	608	.0000156 3.9e+07	0	608
	RE	665	.0000182 3.7e+07	0	665
	_cons	-631.35	.0000167 -3.8e+07	0	-631.35
DSE	SD	-6.09276	3.676177	-1.66	0.097
	LD	-6.28832	3.699295	-1.7	0.089
	E	-6.1692	3.694331	-1.67	0.095
	RE	0.637215	3.687961	0.17	0.863
	_cons	6.184027	3.688321	1.68	0.094
USE	SD	-26.202	18.23031	-1.44	0.151
	LD	-26.0551	18.36362	-1.42	0.156
	E	-27.4877	18.26676	-1.5	0.132
	RE	-19.1258	18.26598	-1.05	0.295
	_cons	26.20207	18.23049	1.44	0.151

Source: Researcher

As shown in table 4.15, regression results of ROA as dependent variable with GDP growth rate moderation show that the effect of financial structure on financial performance in NSE and DSE were the same in all respects since all the coefficients of SDG, LDG, EG and REG were negative showing that any increase in GDP growth rate had an adverse effect on all components of financial structure though with different magnitudes. At the USE, SDG and LDG had a positive relationship with ROA while EG and REG had a negative relationship. This show that GDP growth rate had a positive moderating effect on debt capital and negative effect on equity capital towards ROA.

At RSE all the coefficients of SDG, LDG, EG, and REG were almost zero demonstrating that GDP growth rate had no moderating effect on financial structure. The p-values of EG and REG at NSE and USE were zero showing that the moderating effects of GDP on E and RE were significant, similar to SDG at NSE whose p-value was 0.011. This results show that the effect of financial structure on ROA amongst securities exchanges are different even with moderation of GDP growth rate.

Table 4.15 FGLS Regression Results of ROA as Dependent Variable with Moderator for Different Securities Exchanges

	ROA	Coef.	Std. Err.	Z	P>z
NSE	SD	-5.94108	3.579559	-1.66	0.097
	LD	-4.14641	3.571297	-1.16	0.246
	E	-7.26148	3.589909	-2.02	0.043
	RE	-2.02935	3.585526	-0.57	0.571
	GDP	0.349172	0.024679	14.15	0
	SDG	-0.558	0.21981	-2.54	0.011
	LDG	-0.0044	0.020881	-0.21	0.833
	EG	-0.63903	0.071239	-8.97	0
	REG	-0.26634	0.052147	-5.11	0
	_cons	5.51519	3.579747	1.54	0.123
RSE	SD	623	.0000161 3.9e+07	0	623
	LD	500.5	.0000126 4.0e+07	0	500.5
	E	608	.0000156 3.9e+07	0	608
	RE	665	.0000182 3.7e+07	0	665
	_cons	-631.35	.0000167 -3.8e+07	0	-631.35
DSE	SD	-2.2588	3.649102	-0.62	0.536
	LD	1.24919	4.512659	0.28	0.782
	E	-5.81543	2.962325	-1.96	0.05
	RE	1.030977	2.955778	0.35	0.727
	GDP	0.549647	0.1125	4.89	0
	SDG	-0.04487	0.110945	-0.4	0.686
	LDG	-0.04783	0.067591	-0.71	0.479
	EG	-1.04948	0.647996	-1.62	0.105
	REG	-0.48818	0.347927	-1.4	0.161
	_cons	2.057026	2.935626	0.7	0.483
USE	SD	-7.87473	4.910298	-1.6	0.109
	LD	-6.50363	4.875532	-1.33	0.182
	E	-11.9403	4.842789	-2.47	0.014
	RE	-6.03928	4.768217	-1.27	0.205
	GDP	0.713972	0.034071	20.96	0
	SDG	0.020573	0.414846	0.05	0.96
	LDG	0.021634	0.048222	0.45	0.654
	EG	-0.91456	0.108257	-8.45	0
	REG	-0.73377	0.047707	-15.38	0
	_cons	7.837954	4.837507	1.62	0.105

As shown in table 4.16, regression results of ROE as dependent variable without GDP growth rate moderation show that the effect of financial structure on ROE at NSE and RSE were the same in all respects since all the coefficients of SD, LD, E and RE were positive showing that any increase in any of the component of financial structure had positive effect on ROE though with different magnitudes. Effect of financial structure and ROE at DSE and USE were similarly the same since all the coefficients of SD, LD and RE were negative and positive for E. This show that an increase in SD, LD or RE had an adverse effect on ROE while an increase in E had a positive effect though with different magnitudes. This results show that the effect of financial structure on ROE amongst securities exchanges were different. However, while the components of financial structure contribute differently in magnitude to ROE, such contributions were all not significant at 5% level of significance since all their p-values were greater than 5%.

Table 4.16 FGLS Regression Results of ROE as Dependent Variable without Moderator for Different Securities Exchanges

	ROE	Coef.	Std. Err.	Z	P>z
NSE	SD	3.787578	9.493676	0.4	0.69
	LD	3.915798	9.502633	0.41	0.68
	E	8.814839	9.502491	0.93	0.354
	RE	3.569408	9.503224	0.38	0.707
	_cons	-3.75559	9.497816	-0.4	0.693
RSE	SD	91.5	688.5155	0.13	0.894
	LD	72.75	538.6718	0.14	0.893
	E	96	665.7446	0.14	0.885
	RE	96.5	777.0872	0.12	0.901
	_cons	-92.62	714.2614	-0.13	0.897
DSE	SD	-3.98398	3.097412	-1.29	0.198
	LD	-3.66357	3.122843	-1.17	0.241
	E	3.018707	3.118036	0.97	0.333
	RE	-3.77172	3.111566	-1.21	0.225
	_cons	3.82094	3.110689	1.23	0.219
USE	SD	-4.56197	11.14641	-0.41	0.682
	LD	-5.00633	11.18875	-0.45	0.655
	E	0.43961	11.19986	0.04	0.969
	RE	-4.44253	11.13769	-0.4	0.69
	_cons	4.696852	11.14117	0.42	0.673

Source: Researcher

As shown in table 4.17, regression results of ROE as dependent variable with GDP growth rate moderation at USE show that the coefficients of SDG, LDG, EG and REG were negative showing that any increase in GDP growth rate had an adverse moderating effect on all components of financial structure though with different magnitudes. At the NSE the coefficients of SDG and LDG were positive while of EG and REG were negative showing that an increase in GDP growth rate had a positive moderating effect on SD and LD and negative effect on E and RE. At DSE, apart from REG, all the other coefficients were positive implying that GDP growth rate had a positive moderating effect on SD, LD and E but a negative interaction effect on RE towards ROE.

At RSE, all the coefficients were almost zero and hence GDP growth rate had almost zero moderating effect on financial structure on ROE contribution. Apart from SDG, EG and REG at NSE and REG at USE, all the others had p-values of greater than 5% implying that apart from SD, E and RE at NSE and REG at USE, the moderating effect of GDP growth rate for all the other sources towards ROE were not significant. This results further show that the effect of financial structure on ROE amongst securities exchanges are different even with moderation by GDP growth rate. This results were expected to be so since different EA countries had different economic performance over the period of study that impacted differently on their respective markets (KIPPRA, 2013)

Table 4.17 FGLS Regression Results of ROE as Dependent Variable with Moderator for Different Securities Exchanges

Market	ROE	Coef.	Std. Err.	z	P>z
NSE	SD	5.894288	3.581373	1.65	0.1
	LD	4.101855	3.57313	1.15	0.251
	E	7.208945	3.591862	2.01	0.045
	RE	1.974871	3.587503	0.55	0.582
	GDP	0.651076	0.024719	26.34	0
	SDG	0.56622	0.220203	2.57	0.01
	LDG	0.004258	0.020907	0.2	0.839
	EG	-0.36181	0.071328	-5.07	0
	REG	-0.73484	0.052275	-14.06	0
	_cons	-5.46456	3.581672	-1.53	0.127
RSE	SD	91.5	688.5155	0.13	0.894
	LD	72.75	538.6718	0.14	0.893
	E	96	665.7446	0.14	0.885
	RE	96.5	777.0872	0.12	0.901
	_cons	-92.62	714.2614	-0.13	0.897
DSE	SD	2.490514	3.666884	0.68	0.497
	LD	-1.43727	4.557211	-0.32	0.752
	E	5.943964	2.98853	1.99	0.047
	RE	-0.90206	2.981879	-0.3	0.762
	GDP	0.446627	0.112511	3.97	0
	SDG	0.045277	0.112377	0.4	0.687
	LDG	0.048949	0.068572	0.71	0.475
	EG	0.09483	0.652191	0.15	0.884
	REG	-0.52646	0.346675	-1.52	0.129
	_cons	-2.16168	2.962152	-0.73	0.466
USE	SD	8.165157	4.880567	1.67	0.094
	LD	6.799505	4.84241	1.4	0.16
	E	12.23008	4.811952	2.54	0.011
	RE	6.319211	4.737044	1.33	0.182
	GDP	0.287011	0.0338	8.49	0
	SDG	-0.00906	0.41204	-0.02	0.982
	LDG	-0.02152	0.04806	-0.45	0.654
	EG	-0.08749	0.107508	-0.81	0.416
	REG	-0.26808	0.047435	-5.65	0
	_cons	-8.12727	4.806434	-1.69	0.091

4.4.7 Financial Structure Preferred Hierarchy

The results in table 4.18 show that when ROA was used as response variable, the coefficients of determination for RE, E, LD and SD were 86.54%, 34.35%, 13.19% and 4.06% respectively without GDP growth rate moderator. This show that firms would prefer to utilize retained earnings followed by external equity and then debt based on their contribution to ROA. The same results are replicated even with GDP growth rate moderation except that the interaction effect of GDP growth rate makes SD more preferred to LD with 24.51% and 19.76% respectively.

Table 4.18 Specific Sources Contributory Ranks Based on Coefficient of Determination for EASE

Variable		Model 1		Model 2	
Dependent	Independent	%	Rank	%	% Change
ROA	SD	4.06	4	24.51	20.45
	LD	13.19	3	19.76	6.57
	E	34.35	2	52.95	18.6
	RE	86.54	1	91.92	5.38
ROE	SD	11.93	3	34.65	22.72
	LD	0.09	4	18.42	18.33
	E	69.71	1	90.95	21.24
	RE	28.46	2	72.64	44.18

Model 1 is without moderator; Model 2 is with moderator

Source: Researcher

However, as shown in table 4.19, the proportion of assets financed by the various sources were external equity 35.2%, SD 28.89%, RE 18.94% and LD 16.97%. This contradicts the results based on the contributory effects to ROA as highlighted above. Results based on contributory effects to ROA partially agree with the pecking order theory on the use of internal financing as the first source before resorting to any form of external funds but differ on external equity as the last source. The findings of the

proportionate usage of finance to fund the assets however show that external equity was mostly used and LD was least used. Indeed, Kishore (2009) concluded that since internal funds incur no flotation costs and require no additional disclosure of financial information that may lead to a possible loss of competitive advantage in the market, firms would prefer it first before other sources. The findings also agree with Zurigat (2009) who concluded that equity is not the last resort for financing as the pecking order theory suggests using data from 114 non-financial Jordanian firms.

When ROE was used as response variable, the coefficients of determination for E, RE, SD and LD were 69.71%, 28.46%, 11.93% and 0.09% respectively without GDP growth rate moderation. This show that firms would prefer to utilize external equity followed by retained earnings and then debt. The same results are replicated even with GDP growth rate moderation but with different coefficients of determination. The findings of the proportionate usage of finance towards the assets however show that external equity was mostly used followed by SD, RE and LD as the least used. The results concur with Shubita and Alsawalhah (2012) findings on preference of equity than debt but contravene Myres and Majluf (1984) pecking order hypothesis on equity as the last preferred choice. In Nigeria, Olokoyo (2013) found out that firms were either majorly financed by equity capital or a mix of equity capital and short-term financing, in total agreement with this study findings.

Table 4.19 Specific Source Asset Financing for EASE firms

Source	Proportion	Rank
SD	.2889	2
LD	.1697	4
E	.3520	1
RE	.1894	3

Source: Researcher

Table 4.20 show the results of individual market's preference to financial source based on the coefficient of determination. At the NSE, DSE and USE, retained earnings had the highest coefficient of determination when ROA was used as the dependent variable showing that firms would have preferred that hierarchy of financing sources. However, when ROE was used as the dependent variable, all the EASE demonstrate their preference for external equity as E had the highest coefficient of determination in all markets. At RSE, firms seem to prefer debt than equity when ROA was used as the dependent variable since the coefficient of determination of SD was highest at 66.65%, meaning that SD explains to the extent of 66.65% of variation in ROA.

At RSE, DSE and USE, when ROA was used as the response variable, firms seem to least prefer LD since the coefficient of determination for the same was lowest. Even at the NSE, LD ranked at position three with a 20.31% contribution. When ROE was used instead of ROA, LD ranks last at the NSE, DSE and USE and third at RSE close to SD being the last one. This findings therefore show that while different markets show different preferential hierarchy to different sources of finance based on the their contributory effects to returns, all markets seem to generally prefer equity to debt since the contributions of E and RE are generally higher than those of SD and LD to both ROA and ROE.

Table 4.20 Specific Sources Contributory Ranks Based on Coefficient of Determination for Individual Market

	Variable		Model 1		Model 2	
	Dependent	Independent	%	Rank	%	% change
NSE	ROA	SD	0.63	4	6.58	5.95
		LD	20.31	3	25.89	5.58
		E	29.07	2	55.28	26.21
		RE	79.89	1	87.51	7.62
	ROE	SD	12.72	3	47.84	35.12
		LD	1	4	31.66	30.66
		E	55.63	1	89.01	33.38
		RE	23.78	2	73.55	49.77
RSE	ROA	SD	66.65	1	99.52	32.87
		LD	0.01	4	99.7	99.69
		E	6.73	4	99.41	92.68
		RE	37.82	3	100	62.18
	ROE	SD	34.17	4	83.29	49.12
		LD	52.37	3	96.31	43.94
		E	83.99	1	99.99	16
		RE	69.67	2	71.53	1.86
DSE	ROA	SD	9.28	3	11.96	2.68
		LD	5.72	4	4.75	-0.97
		E	66.88	2	86.86	19.98
		RE	99.48	1	99.68	0.2
	ROE	SD	2.95	3	3.78	0.83
		LD	5.2	4	7.81	2.61
		E	99.39	1	99.68	0.29
		RE	66.61	2	85.02	18.41
USE	ROA	SD	44.17	2	61.41	17.24
		LD	0.94	4	5.95	5.01
		E	3.75	3	4.82	1.07
		RE	84.07	1	92.04	7.97
	ROE	SD	43.34	3	49.37	6.03
		LD	0.27	4	5.45	5.18
		E	81.38	1	93.24	11.86
		RE	10.54	3	47.43	36.89

In table 4.21, NSE and DSE firms financed most of their assets using external equity and least using LD, while in RSE and USE firms financed assets mostly through SD. The moderating effect of GDP growth rate seem to be generally higher for equity than debt too as shown in the last column of table 4.20.

Generally, the results based on coefficient of determination partially agree with the pecking order theory on the use of internal financing as the first source before resorting to any form of external funds when ROA was used but differ on external equity as the last source, consistent with Zurigat (2009). In addition, the results correlate with Leland and Pyle (1977) hypothesis that a firm signals the increase in firm's value by reducing its leverage since it has enough retention to finance its future growth, indicating preference for retained earnings. It is interesting to note that firms at DSE, RSE and USE used LD as a last option. It is only at the NSE where LD was used as a second last source. When ROE was used as the dependent variable, the coefficient of determination results for all EASE contradict the dictate of pecking order theory since external equity was the preferred choice across board. This was also true for firms at the NSE and DSE since they used E mostly in financing their assets.

Table 4.21 Specific Source Asset Financing in Individual Markets

Market	Source	Proportion	Rank
NSE	SD	0.2854286	2
	LD	0.1788254	3
	E	0.3755556	1
	RE	0.160254	4
RSE	SD	0.562	1
	LD	0.036	4
	E	0.052	3
	RE	0.352	2
DSE	SD	0.205	3
	LD	0.1415	4
	E	0.3418333	1
	RE	0.3115	2
USE	SD	0.4157895	1
	LD	0.1552632	4
	E	0.2105263	3
	RE	0.2171053	2

Source: Researcher

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study and draw conclusions which form the basis of recommendations. It further provides suggestions for further study in line with the shortcomings identified in the study. The conclusions as discussed are aligned to the seven study objectives with their corresponding hypotheses.

5.2 Summary

The overall objective was to study the effect of financial structure on financial performance of firms listed at EASE. The findings indeed supported the overall relationship with an explanation of 86.6% with regard to ROA and 69.73% with regard to ROE. Both ROA and ROE models were found to be significant at 5% level of significance too. The study employed both causal and explanatory research designs with a census of 61 firms or 96.8% of target population. Diagnostic tests were performed in support of the application of the FGLS method used to analyse the nature and the degree of the relationships. Conclusions on the statistical significance between the various components of financial structure on financial performance, measured by ROA and ROE were drawn. The moderating effect of GDP growth rate on the effect of financial structure on financial performance was also looked into in addition to preferential hierarchy of financing sources. The summary of each is itemized based on the specific objectives of the study.

5.2.1 To Explore the Effect of SD on Financial Performance of Firms Listed at EASE

The study found out that that SD had an insignificant inverse effect on ROA and an insignificant positive effect on ROE by listed firms in EASE. This findings indeed agree with MM (1958) capital structure irrelevance theory that the amount of debt in the capital structure does not affect the performance and the value of the firm. However, while the findings of ROA contradict agency theory which provide that financial leverage hedge against the agency problem to improve returns, the ROE findings support it.

5.2.2 To Find Out the Effect of LD on Financial Performance of Firms Listed at EASE

The study revealed that LD had an insignificant inverse impact on ROA and an insignificant positive effect with ROE at 5% level of significance. Again the findings were consistent with those of SD. It therefore implies that borrowings by firms within EASE does not significantly impact on the financial performance of the firms. The findings also show that that a large portion of firms' assets were financed by short term debt than long term debt.

5.2.3 To Assess the Effect of RE on Financial Performance of Firms Listed at EASE

With regard to RE, the study found that it had an insignificant negative effect on ROA and an insignificant positive effect on ROE at 5% level of significance since in both cases the p-values were greater than 5%. This implies that firms should therefore raise capital through retained earnings without much worry of negative impact on returns. In any case, retained earnings are almost costless save for the opportunity cost associated with holding it.

5.2.4 To Determine the Effect of E on Financial Performance of Firms Listed at EASE

With respect to E, the study revealed that it had an insignificant negative effect on ROA and an insignificant positive impact on ROE at 5% level of significance since in both cases the p-values were less than 5%. Firms should therefore not shy away from equity capital for its adverse consequence on ROA and ROE is not huge. This is supported by the results of descriptive statistics which show that firms generally preferred raising capital through equity to finance their assets.

As to the effect of financial structure on ROA or ROE amongst securities exchanges, the study revealed that such relationships are different. This is expected since different markets have different dynamics as dictated by country's specific political, social, economic and technological factors. Kenya where NSE is for example is generally agreed to be the hub of business and information technology in the EA region with Rwanda, which hosts RSE lagging behind the rest for its short life since independence. The differences amongst EA countries has been one of the key setbacks in realizing the EAC protocol as countries fear to lose sovereignty.

5.2.5 To Evaluate the Moderating Effect of GDP Growth Rate on the Effect of Financial Structure on Financial Performance of Firms Listed at EASE

To determine the moderating effect of GDP growth rate on the effect of financial structure on financial performance of firms listed at EASE, the study revealed that indeed GDP growth rate had some significant moderating effect since the proportion of variation of ROE and ROA due to variations in financial structure increased with its inclusion in the models.

5.2.6 To Establish the Preferred Hierarchy of Financial Structure by firms listed at EASE

On the establishment of the preferred hierarchy of financial structure by firms listed at EASE, this study held that there is no preferred hierarchy. Various markets had their own preferred choices, a demonstration that different markets are responsive to their country's economic or otherwise performance. The fact that firms are listed at different times too and at different life stages could explain the observation which is strongly supported by the life cycle theory assertion that firms use different types of financial structure at different stages.

5.3 Conclusions

Based on the findings of the study, it is worth concluding that financial structure indeed affects the financial performance of firms listed at the EASE, though differently based on the source. Overall, there exist a strong effect of financial structure on both ROA and ROE. These effect is also significant at 5% level of significance. In addition, results on the effect of SD on ROA or ROE suggest that agency theory is applicable based on the investors return on investment since while ROE model support the agency theory dictate, ROA model does not. The huge proportion of asset financing through SD could imply that short-term debt financing was less costly and therefore available compared to the long term debt which is usually associated with high value collateral and at times restrictive covenants making it unattractive. Generally on debt financing, it is prudent to conclude that firms should borrow to finance their growth without fear of adverse effect on profitability since it is insignificant.

It is also evident from the findings that equity financing seem to be the preferred choice by majority of firms except in RSE. Firms are therefore at liberty to raise capital through equities since they have marginal negative impact on returns. In addition, the general preference of external equity over retained earnings and debt clearly negates the

provision of the pecking order theory implying that it may not be applicable in practice, at least at EASE. The fact that different markets have demonstrated different hierarchy of preference of financial sources, it is worth concluding too that firms should look at and evaluate the political, economic, social and technological environment within their markets before making decision on the mode of raising finance. This however should be looked into together with the firms' internal environment ranging from opportunities available, management potential and industry threats among others.

On the moderating effect of financial structure by the GDP growth rate, on the effect of financial structure on financial performance of firms at the EASE, the study concluded that indeed GDP growth rate had significant moderating effect. This is realistic since as expected, the GDP of a country dictates a lot on the behavior of not only investors at the securities market but even elsewhere hence a change in GDP is bound to affect the amounts available for consumption and savings for investment.

5.4 Recommendations

From the conclusions, it is recommended that firms should use shareholders' funds as much as practical before they result to borrowing so as to minimize the risks related to debt financing. This risks that include huge interest payments on the debt to erode the returns, restrictive debt covenants, are likely to lead the firms to financial distress and eventual collapse. Firm managers must therefore be encouraged to raise equity by listing at the securities exchanges. The capital market regulators on the other hand should create the necessary infrastructure and regulatory framework that entice the firms to list. The managers, professional firms and regulators too should together develop training programs and manuals to educate and sensitize the shareholders and other stakeholders the benefits of listing.

It is also recommended that if firms have to borrow, they should borrow in the short term first before long term since it was concluded that much of firms' assets are financed

by short term debts. To this end, the regulators are encouraged to create more short term financial instruments to offer many alternatives that may even help to reduce borrowing cost due to competition. Moving forward however, it is crucial that the governments of EA countries be able to creatively, without compromise to demand and supply forces, regulate the financial market in an attempt to reduce the cost of long term debt to enhance its uptake by firms. If this was to happen, the appetite for long term borrowing would be high since repayments will be spread over time thereby granting businesses enough time to make returns against their borrowings and even to absorb short term financial shocks.

This study established that in isolation, some financial structure sources contribute insignificantly to financial performance but when combined with others, the contribution is significant. It is therefore recommended that firms combine both debt and equity in their financial structure. It is therefore incumbent on firms' managers and financial advisors to continuously study the market and advice on the appropriateness of the proportions of the various sources of finance based on market circumstances at any given time.   This way, their decisions shall boost firm's competitiveness and consequently financial performance.

To the EAC secretariat, it is recommended that it aggressively lobby to the EAC membership for each to meet its mandate so as to ensure improved infrastructure to simplify and rationalize cross border trading. It is upon it to increase sensitization and awareness on the EAC protocols, address reported trade barriers towards securing a single securities exchange. It should also work to strengthen the institutional and regulatory framework for dispute resolution. This measures as recommended will foster the growth of the much anticipated single EASE, boost its capital base to attract the much needed foreign capital. It is also recommended that the EA governments grow and maintain their GDPs trends since GDP was found to have a contingent effect on the financial structure.

5.5 Suggestions for Further Research

This study focused on non-financial firms listed at EASE. It is therefore the researcher's view that further research be done on non-listed firms and compare their results with those of this study. It is also imperative to undertake similar studies on larger scope like Africa or European Union or United States of America or Asia markets and compare their findings with the current findings.

REFERENCES

Abdeljawad, I., Mat-Nor, F., Ibrahim, I., & Abdul-Rahim, R. (2013). Dynamic Capital Structure Trade-off Theory: Evidence from Malaysia. *International Review of Business Research Papers*, *9*(6).

Abdul, G .K. (2012). The Relationship of Capital Structure Decisions with Firm Performance: A Study of the Engineering Sector of Pakistan. *International Journal of Accounting and Financial Reporting, 2*(1), 2162-3082.

Abor, J. (2007). Debt policy and performance of SMEs. *The Journal of Risk Finance, 8*(4), 64- 379.

Abor, J. (2005). The effect of capital structure on profitability: empirical analysis of listed firms in Ghana. *Journal of Risk Finance, 6*(5), 438-45.

African Securities Exchanges Association (ASEA). (2009). African Securities Exchanges Association Yearbook 2009. Retrieved February 10 2015 from http://www.africansea.org.

Afza, T., & Nazir, M. S. (2007). Is it Better to be Aggressive or Conservative in Managing Working Capital, *Journal of Quality and Technology Management*, *3*(2), 11-21.

Akinlo, A. E., & Egbetunde, T. (2010). Financial development and economic growth: The experience of 10 Sub-saharan African Countries Revisited. *The Review of Finance and Banking*, *2*(1), 17-28.

Amidu, M. (2007). Determinants of capital structure of banks in Ghana: an empirical approach. *Baltic Journal of Management*, *2*(1), 67-79.

Anil, S., & Zenner, M. (2005). How to choose a capital structure: navigating the debt-equity decision. *Journal of Applied Corporate Finance*, *17*(1), 26-35.

Babatunde, Y., Akinwunmi, O., Khadijah, I., & Yusuf, S. (2014). Capital Structure and Profitability of Quoted Firms: The Nigerian Perspective. http://Proceedings.Iises.Net/Index.Php?Action=Proceedingsindexconference&Id=2&Page=1.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. *American political science review*, *89*(03), 634-647.

Bengtsson, A., & Wagner, M. (2013). A Theoretical and Empirical Study of how Capital Structure influences the Performance and Enterprise Value-A study of the Norwegian shipping industry.

Berger, A. N., & Patti, E. B. D. (2006). Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. *Journal of Banking & Finance*, *30*(4), 1065-1102.

Berry, W. D., & Feldman, S. (1985). *Multiple regression in practice* (No. 50). Newbury Park, CA: Sage Publications.

Bierman, H. (1999).*Corporate Financial Strategy and Decision Making to Increase Shareholder Value*, , Pennsylvania, USA: Frank J. Fabozzi Associates.

Blouin, J., Huizinga, H., Laeven, M. L., & Nicodème, G. (2014). *Thin capitalization rules and multinational firm capital structure*. International Monetary Fund.

Brennan, M. J., & Schwartz, E. S. (1984). Optimal financial policy and firm valuation. *The journal of finance*, *39*(3), 593-607.

Breuer, W., Gürtler, M., & Schuhmacher, F. (2008). *Portfolio management II: Weiterführende Anlagestrategien* (Vol. 2). Verlag: Springer.

Brigham, E., & Ehrhardt, M. (2010). Financial management theory and practice (13th ed.). Mason: McGraw-Hill.

Bulan, L. T., & Yan, Z. (2010). Firm maturity and the pecking order theory. Retrieved from*:* http://ssrn.com/abstract=1760505

Castillo, E. (2009), *Process Optimization: A Statistical Approach*, NY: Springer

Castro, P. C., Tascón, M. T., & Amor-Tapia, B. (2011). Dynamic analysis of capital structure in technological firms based on the firms' life cycle stages.

Chandran, S. (2004). *Adaptive antenna arrays: trends and applications*. New York: Springer.

Chiang, Y.H., Chan, P.C.A., & Hui, C.M.E., (2002). Capital structure and profitability of the property and construction sectors in Hong Kong. *Journal of Property Investment and Finance, 20*(6), 434-454.

Chisti, K. A., Ali, K., & Sangmi, M. I. D. (2013). Impact of Capital Structure on Profitability of Listed Companies (Evidence from India). *The USV Annals of Economics and Public Administration*, *13*(17), 183-191.

Cooper, D.R., & Schindler, P.S. (2003). *Business Research Methods,* 6th, edition. New Delhi-India: McGraw-Hill Publishing, Co. Ltd.

Cooper, D.R., & Schindler, P.S. (2006). *Business Research Methods,* 9th, edition. New Delhi-India: McGraw-Hill Publishing, Co. Ltd.

Costanza, R., Hart M., Posner, S., & Talberth, J. (2009). The Need for New Measures of Progress.The Frederick S. Pardee Center for the Study of the Longer-Range Future Boston University, 4.

Creswell, J. W., & Garrett, A. L. (2008). The" movement" of mixed methods research and the role of educators. *South African Journal of Education*, *28*(3), 321-333.

Dar es Salaam Stocks Exchange (DSE) (2015). History of Organisations. Retrieved from http://www.dse.co.tz.

Dare, F.D., & Sola, O. (2010). Capital Structure and Corporate Performance in Nigeria Petroleum Industry: Panel Data Analysis. *Journal of Mathematics and Statistics 6*(2), 168-173.

Donald, C. R., & Schindler, P.S. (2003). *Business Research Methods* (8th ed.). London: Macmillan.

Dragota, I. M., Dragota, V., Obreja, L., & Semenescu, A. (2008). Capital structure determinants: A sectorial analysis for the Romanian listed companies. *Economic Computation and Economic Cybernetics Studies and Research*, *42*(1-2), 155-172.

Ebaid, E. I. (2009). The impact of capital-structure choice on firm performance: empirical evidence from Egypt. *The Journal of Risk Finance*, *10*(5), 477-487.

Erasmus, P. D. (2008). *Evaluating Value Based Financial Performance Measures.* Unpublished PhD dissertation, Stellenbosch: University of Stellenbosch.

Fama, E. F., & French, K. R. (2005). Financing decisions: who issues stock?. *Journal of financial economics*, *76*(3), 549-582.

Faraway, J. (2002). *Practical Regression and Anova using R.* Retrieved From http//: www.r-project.org.

Fischer, E. O., Heinkel, R., & Zechner, J. (1989). Dynamic capital structure choice: theory and tests. *Journal of Finance, 44*(1), 19-40.

Fluck, Z. (2000). Capital Structure Decisions in Small and Large Firms: A life-cycle theory of financing. Retrieved from http://ssrn.com/abstract=1298862.

Frank, M. Z., & Goyal, V. K. (2007). Trade-off and pecking order theories of debt. Retrieved from: *SSRN 670543*.

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational Research: An introduction.* Boston: Pearson Education.

Gay, L. R., Mills, G. E., & Airasian, P. (2006). Education research–Competencies for analysis and applications. Columbus, OH: Pearson Education.

Gill, A., Nahum B., & Neil, M. (2011). The effect of capital structure on profitability: Evidence from the United States. *International Journal of Management, 28*(4) (1), 3-15.

Goldstein, R., Ju, N., & Leland, H. (2001). An EBIT-Based Model of Dynamic Capital Structure*. *The Journal of Business*, *74*(4), 483-512.

Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of financial economics*, *60*(2), 187-243.

Green, W. H. (2008). *Econometric Analysis* (6th ed.). New Jersey: Pearson Prentice Hall.

Grigore, M. Z., & Stefan-Duicu, V. M. (2013). Agency theory and optimal capital structure. *CKS Journal, Bucharest*, 862-868.

Gujarati, D. (2003*). Basic Econometrics* (4th ed.). New York: McGraw Hill.

Gul, S., Khan, M. B., Rehman, S. U., Khan, M. T., & Khan, W. (2013). Working capital management and performance of SME sector. *European journal of business and management*, *5*(1), 60-68.

Hennessy, C. A., & Whited, T. M. (2005). Debt dynamics. *The Journal of Finance*, *60*(3), 1129-1165.

Hosmer, D., & Stanley, L. (2000). *Applied Logistic Regression*, (2nd ed.). New York: John Wiley.

International Monetary Fund–IMF (2013), *Regional Economic Outlook: Sub-Saharan Africa Building Momentum in a Multi-Speed World*, May 2013.Washington DC: International Monetary Fund.

Irving, J. (2005). Regional Integration of Stock Exchanges in Eastern and Southern Africa: Progress and Prospects, IMF Working Paper 05/122 (Washington: International Monetary Fund).

Ishaya, L. C., & Abduljeleel, B. O. (2014). Capital Structure and Profitability of Nigerian Quoted: The Agency Cost Theory Perspective. *American International Journal of Social Science, 3*(1), *139-140.*

Jensen, M. C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *Corporate Finance, and Takeovers. American Economic Review*, *76*(2).

Jensen, M., & Meckling, W. (1976): Theory of the firm: managerial behaviour, agency costs and capital structure. *Journal of Financial Economics, 3*, 11- 25.

Kanwal, S., & Nadeem, M. (2013). The impact of macroeconomic variables on the profitability of listed commercial banks in Pakistan. *European Journal of Business and Social Sciences, 2 (9),* 186-201.

Karadeniz, E., Kandir, Y. S., Balcilar, M., & Onal, B. Y. (2009). Determinants of capital structure: evidence from Turkish lodging companies. *International Journal of Contemporary Hospitality Management*, *21*(5), 594-609.

Kaumbuthu, A.J. (2011). *The effect of capital structure and financial performance: a study of firms listed under industrial and allied sector at the NSE*, *Unpublished MBA Dissertation,* Nairobi: University of Nairobi. Retrieved from http://erepository.uonbi.ac.ke

Kenya National Bureau of Statistics (KNBS). (2013). *Economic Survey*. Nairobi: Government Printer.

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt.

Kesimli,I. G., & Gunay, S.G. (2011). The Impact of Global Economic Crisis on Working Capital of Real Sector in Turkey. *Business and Economic Horizon*, *4*(1), 52-69.

KIPPRA. (2013). *Kenya Economic Report 2013: Imperatives for Reducing the Cost of Living*. Nairobi: Kenya Institute for Public Policy Research and Analysis.

Kishore, M. R. (2009). *Financial Management* (7[th]ed.). New Delhi: Taxmann publications ltd.

Kothari, C.R. (2004).*Research methodology: Methods and techniques (*2nd ed.*)*, New Delhi: New Age International.

Kouki, M. (2011). A re-examination of the MM capital structure irrelevance theorem: A partial payout approach. *International Journal of Business and Management*, *6*(10), 193.

Kumar, R. (2005). *Research Methodology-A Step-by-Step Guide for Beginners* (2nd ed.), Singapore: Pearson Education: Kendall/Hunt Publishing Company.

Liesz, T. J. (2001). Why Pecking Order Theory should be included in introductory finance courses. *Online: http://www. mountainplains. org/articles/2001/pedagogy/PECKING% 20ORDER% 20THEORY. htm, School of Business & Professional Studies, Mesa State College*.

Liu, J. (2006). China Releases Green GDP Index, Tests New Development Path. World watch Institute. Online Features: China Watch.

Luigi, P., & Sorin, V. (2009). A review of capital structure theories. *Annals of the University of Oradea, Economic Science Series*, *18*(3), 315-320.

Madan, K. (2007). An analysis of the debt-equity structure of leading hotel chains in India. *International Journal of Contemporary Hospitality Management, 19*(5), *397-414.*

Maina, L., & Kondongo, O. (2013). Capital Structure and Financial Performance in Kenya: Evidence from Firms Listed at the Nairobi Securities Exchange. Paper Presented at the Jomo Kenyatta University of Science and Technology Research Conference, Kenya.

Makori, D. M., & Jagongo, A. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms

Listed on Nairobi Securities Exchange, Kenya. *International Journal of Accounting and Taxation*, *1*(1), 1-14.

Miller, E. M. (1977). Risk, uncertainty, and divergence of opinion. *The Journal of Finance*, *32*(4), 1151-1168.

Miller, E. M. (1988). Why a weekend effect. *The Journal of Portfolio Management*, *14*(4), 43-48.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, 261-297.

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. *The American economic review*, 433-443.

Molavi, M., & Jamalzade, S. (2015). On the correlation between financial ratios and capital adequacy across banking network (The Case of Banks Article 44). *International Research Journal of Applied and Basic Sciences, 9*(3), *401-406.*

Moyer, R.C., McGiugan, J.R., & Kretlow, W.J. (1999). *Contemporary Financial Management* (5th ed). New York: West publishers.

Mumtaz, R., Rauf, S. A., Bashir, A., & Noreen, U. (2013). Capital structure and financial performance: Evidence from Pakistan (Kse 100 Index). *Journal of Basic and Applied Scientific Research*, *3*(4), 113-119.

Mwangi, L. W., Muathe, S. M. A., & Kosimbei, G. K. (2014). Effect of Capital Structure and Performance of Non-Financial Companies Listed In the Nairobi Securities Exchange, Kenya. *Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics, 1*(2), 76-77.

Mwangi, L. W., Makau, M. S., & Kosimbei, G. (2014). Effects of Working Capital Management on Performance of Non-Financial Companies Listed in NSE, Kenya. *European Journal of Business and Management*, *6*(11), 195-205.

Myers, S. C., & Majluf N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics.13*, 187-221.

Myers, S. C. (2001). Capital structure. *Journal of Economic perspectives*, 81-102.

Nairobi Securities Handbook (2007-2013). Retrieved from http://www.nse.co.ke

Nairobi Securities Exchange (2015). History of Organisations. Retrieved from https://www.nse.co.ke/nse/history-of-organisation.html

Nivorozhkin, E. (2004). The dynamics of capital structure in transition economies. *Economics of Planning*, *37*(1), 25-45.

OECD (2008).*Tertiary Education for the Knowledge Society*. Paris: Organisation for Economic Cooperation and Development. *Beyond GDP:* OH: South-Western Cengage Learning.

Olokoyo, F. O. (2013). Capital structure and corporate performance of Nigerian quoted firms: A panel data approach. *African Development Review*, *25*(3), 358-369.

Orodho, A. J. (2003). *Essentials of Educational and Social Science Research Method*. Nairobi: Masola Publishers.

Paul, R. K. (2006). Multicollinearity: Causes, Effects and Remedies. New Delhi: IASRI,

Rachdi, H. (2013).What determines the Profitability of banks during and before the International Financial Crisis? Evidence from Tunisia. *International Journal of Economics, Finance and Management, 2*(4).

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and anderson-darling tests. *Journal of Statistical Modeling and Analytics*, *2*(1), 21-33.

Ross, S.A. (1977). The Determination of Financial Structure: the Incentive Signaling Approach. *Bell Journal of Economics, 8,* 23-40.

Ross, S., Westerfield, R., & Jaffe, J. (1993). *Corporate Finance (*3rd ed.).Tata: Irwin.

Rwanda Stocks Exchange (RSE). (2015). Background of organization. Retrieved from http://www.rse.rw/Background.

Salazar, L.A., Soto, C.R., & Mosqueda, E.R. (2012).The Impact of Financing Decisions and Strategy on Small Business Competitiveness. *Global Journal of Business Research*, *6* (2), 93-103.

Santos, J.A.C (2001). Bank Capital Regulation in Contemporary Banking: A Review Of Literature: *Financial Markets, Institutions and Instruments*, 10(2), 42-84.

Sheikh, A.N., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance*, *37*(2), 117-133.

Shubita, M. F., & Alsawalhah, J.F. (2012). The Effect of Capital Structure and Profitability. *International Journal of Business and Social Science, 3*(16).

Singh, M., & Faircloth, S. (2005). The Impact of Corporate debt on Long Term Investment and Firm Performance; *Applied Economics, 37*, 875–883.

Skopljak, V., & Luo, R. (2012). Capital Structure and Firm Performance in the Financial Sector: Evidence from Australia. *Asian Journal of Finance & Accounting*, *4*(1), 278-298.

Smith, J. M., & Harper, D. (2003). *Animal signals*. Oxford: Oxford University Press.

Smyth, R. (2004). Exploring the usefulness of a conceptual framework as a research tool: A researcher's reflection. *Issues in Education Research, 14* (2), 167-180.

Stock, J. H., & Watson, M. W. (2003). Has the business cycle changed and why? In *NBER Macroeconomics Annual 2002, 17*, 159-230. MIT press.

Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social and behavioral research*. New York: Sage.

Thomas, G. (1997). What's the use of theory? *Harvard Educational Review, 67*(1), 75-104.

Titman, S., Keown, A.J., & Martin, J. D. (2011*). Financial Management: Principles and applications (11th Ed).* New Delhi: Pearson Education, Inc.

Tong, G. & Green, C.J. (2005). Pecking Order Or Trade-off Hypothesis? Evidence on the Capital Structure of Chinese Companies. *Applied Economics, 37*(19), 2179-2189.

Uganda Securities Exchange (USE). (2015). History of Organisations. Retrieved from http//:www.use.or.ug/History.

Upneja, A., & Dalbor, M. C. (2001). An examination of capital structure in the restaurant industry. *International Journal of Contemporary Hospitality Management*, *13*(2), 54-59.

Vicente- Lorente, J.D. (2001). Specificity and opacity as resource- based determinants of capacity structure: evidence for Spanish manufacturing firms. *Strategic Management Journal. 22*, 157- 177.

Visser, M., Gesthuizen, M., & Scheepers, P. (2014). The Impact of Macro-Economic Circumstances and Social Protection Expenditure on Economic Deprivation in 25 European Countries, 2007–2011. *Social indicators research*, *115*(3), 1179-1203.

Viviani, J. L. (2008). Capital structure determinants: an empirical study of French companies in the wine industry. *International Journal of Wine Business Research*, *20*(2), 171-194.

Vural, G., Sökmen, A. G., & Çetenak, E. H. (2012). Affects of working capital management on firm's performance: evidence from Turkey. *International Journal of Economics and Financial Issues*, *2*(4), 488-495.

Wainaina, J. N. (2014). *The effect of leverage and financial performance of top 100 small and medium enterprises in Kenya* unpublished PhD dissertation, Nairobi: University of Nairobi.

Watkins, T. (2002), *Leverage and the Risks to Shareholders and Bondholders*, San Jose: San Jose State University.

Watson, J. (2001). *How to Determine a Sample Size:* University Park, PA: Penn State Cooperative Extension.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Wooldridge, J. (2012). *Introductory econometrics: A modern approach*. N.J: Cengage Learning Publishers.

Yogendrarajah, R., & Thanabalasingam, S. (2014). *Working Capital Management and its Impact on Financial Performance: An Analysis of Trading Firms*. Sri Lanka: Rajarata University.

Zhao, J., Katchova, A. L., & Barry, P. J. (2004). Testing the Pecking Order Theory and the Signaling Theory for Farm Businesses. *Urbana*, *51*, 61801.

Zhao, J., Barry, P. J., & Katchova, A. L. (2008). Signaling credit risk in agriculture: implications for capital structure analysis. *Journal of Agricultural and Applied Economics*, *40*(03), 805-820.

Zhang, H., & Li, S. (2008). *The Impact of Capital Structure on Agency Costs: Evidence from UK Public Companies* (Doctoral dissertation, Queens University of Technology).

Zikmund, G.W., Babin, B.J., Carr,C.J. & Griffin, M. (2010). *Business Research Methods (*8th ed.) South-Western: Cengage Learning.

Zou,C., Ladrou, C., Guo, S., & Feng, J. (2010). Identifying interactions in the time and frequency domains in local and global networks − *A Granger Causality Approach. BMC Bioinformatics. 11*(33).

Zurigat, Z. (2009). *Pecking order theory, trade-off theory and determinants of capital structure: empirical evidence from Jordan*. Unpublished PhD Dissertation, Heriot-watt: Heriot-Watt University.

APPENDICES

Appendix I: List of Firms Listed at EASE

A: Listed Firms at NSE

Agricultural:

Eaagads Ltd

Kakuzi Ltd

Kapchorua Tea Co. Ltd

The Limuru Tea Co. Ltd

Rea Vipingo Plantations Ltd

Sasini Ltd

Williamson Tea Kenya Ltd

Automobiles & Accessories:

Car & General (K) Ltd

Marshalls (E.A.) Ltd

Sameer Africa Ltd

Banking:

Barclays Bank Of Kenya Ltd

Cfc Stanbic Of Kenya Holdings Ltd

Diamond Trust Bank Kenya Ltd

Equity Bank Ltd

Housing Finance Co.Kenya Ltd

I&M Holdings Ltd

Kenya Commercial Bank Ltd

National Bank Of Kenya Ltd

Longhorn Kenya Ltd

Nation Media Group Ltd

Scangroup Ltd

Standard Group Ltd

Tps Eastern Africa Ltd

Uchumi Supermarket Ltd

Construction & Allied:

Arm Cement Ltd

Bamburi Cement Ltd

Crown Paints Kenya Ltd

E.A.Cables Ltd

E.A.Portland Cement Co. Ltd

Energy & Petroleum

Kengen Co. Ltd

Kenolkobil Ltd

Kenya Power & Lighting Co Ltd

Total Kenya Ltd

Umeme Ltd

Insurance:

British-American Investments Co.(K) Ltd

Cic Insurance Group Ltd

Nic Bank Ltd

Standard Chartered Bank Kenya Ltd

The Co-Operative Bank Of Kenya Ltd

Commercial & Services

Express Kenya Ltd

Hutchings Biemer Ltd

Kenya Airways Ltd

Longhorn Kenya ltd

Nation media

Scan group

Standard group

TP Serena

Uchumi supermarket

Investment Services

Nairobi Securities Exchange Ltd Ord 4.00

Manufacturing & Allied

A Baumann & Co Ltd

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Jubilee Holdings Ltd

Kenya Re Insurance Corporation Ltd

Liberty Kenya Holdings Ltd

Pan Africa Insurance Holdings Ltd

Investment

Centum Investment Co Ltd

Olympia Capital Holdings Ltd

Trans-Century ltd

Telecommunication & Technology

Safaricom Ltd

Growth Enterprise Market Segment (Gems)

Flame Tree Group Holdings Ltd

Home Afrika Ltd

Manufacturing cont…

Eveready EA

Kenya Orchards ltd

Mumias sugar

Unga group ltdAcacia

Uchiumi Supermarkets

Carbacid Investments Ltd

East African Breweries Ltd

B: Listed firms at DSE

Kenya Airways ltd	Swissport Tanzania
East Africa Breweries	Tanzania Portland Cement
Nation Media	**Financials:**
Acacia Mining	Kenya Commercial Bank
Swala Oil &Gas	Jubilee Holdings
	National Microfinance
Tanga Cement Co. ltd	Bank.
	Dar es Salaam Community
	Bank
Precision Air Services	
	DCB Bank
Tanzania Breweries ltd	
	CRDB Bank
TOL Gas ltd	
	Mkombozi Commercial
Tatepa Co. ltd	Bank
Tanzania Cigarette	Maendeleo Bank

C: listed firms at RSE

Manufacturing

Bralirwa

Commercial And Services

Uchumi Super Market Ltd

Nation Media Group   **Financials:**

Kenya Commercial Bank

Bank of Kigali

Equity Bank

D: Listed Firms at USE

DFCU Group   **Financials:**

East Africa Breweries   Housing Finance Bank

Umeme ltd   Bank of Baroda (Uganda)

Centum Investment Company Limited   Equity Group Holdings ltd

Uganda Clays lts   Jubilee Holdings Limited

Kenya Airways   Jubilee Insurance Company Limited

Nation Media   Kenya Commercial Bank Group

New Vision   National Insurance Corporation

New Vision Group   Stanbic Bank (U) ltd

Appendix II: Data Collection Sheet

Year	Country	Firm	Current Liabilities	Non - Current Liabilities	Retained Earnings	Total Assets	Total Equity	Profit After Tax	GDP growth rate