

**CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF COMMERCIAL
AND SERVICES FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE,
KENYA**

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DECLARATION

This research project is my original work and has not been submitted to any other university for the award of a degree or any other academic award.

Caroline W. Muraguri

Signature..... Date

I confirm that the work in this proposal was done by the candidate under my supervision.

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DEDICATION

This project is in appreciation to my husband Patrick, my children Mwende and Flora. My parents Mr. and Mrs. Peterson and my larger family who accorded me a lot of emotional and material support and encouragement during my master's studies. May the Almighty God grant them abundant blessings.

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OPERATIONAL DEFINITIONS OF TERMS

Capital structure	Is the mix of equity and debt that a firm uses to fund its business
Debt/ Equity ratio	A ratio that shows relationship between firm total debt and total equity
Debt/ Total assets ratio	Shows the portion of firms asset financed by debt instead of equity
Equity/ Total assets ratio	It depicts the portion of company assets funded by shareholders equity
Financial performance	Are measures of how a company utilizes its assets to make revenues
Return on equity	Measures capability of a company to make profits from shareholders investment

LIST OF ACRONYMS AND ABBREVIATIONS

ATO	Assets Turnover Ratio
CMA	Capital Market Authority
LD	Long term debt
MM	Modigliani and Miller
NACOSTI	National commission for science and innovation
NSE	Nairobi Securities Exchange
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
STD	short term debt
TD	Total debt
TDE	Total debt to Equity

ABSTRACT

Numerous firms in our country and beyond deal with declining financial performance that can be attributed to financing decisions such as capital structure decisions among other factors. Decline in financial performance negatively affects the firm's value as well as price of shares held by investors. However corporate managers are still not well equipped with sufficient knowledge on how capital structure choice affects financial performance and best way to set up the most appropriate capital structure that can improve financial performance. The objective of this study was to examine the effect of capital structure on financial performance of listed commercial and services firms at Nairobi securities exchange, Kenya. The specific objectives was to determine the effect of equity/ total assets ratio, long term debt/ total assets and debt to equity ratio on the financial performance of commercial and services listed firms in the NSE. Capital structure theories that guided this study are Modigliani and Miller theories, trade off theory, pecking order theory and the agency cost theory. Return on equity (ROE) was the financial performance measure used. Equity/ total assets ratio, debt-equity ratio and long term debt/ total assets ratio were the capital structure measures. The study population comprised all the 11 active firms listed in the commercial and services sector at the NSE, Kenya. The study sample was thus a census of all the eleven listed firms. The study employed secondary data from published financial reports of listed firms accessible at CMA and NSE. Descriptive research design was used in the study. The study adopted the use of multiple regression models. Data analysis used Stata program to get descriptive and inferential statistics e.g. mean, standard deviation and others. Data presentation was done by use of tables. The finding of the projects indicated that equity to total asset ratio was positive and statistically significant for financial performance measure of ROE. Debt-equity ratio relationship with ROE was negative. Long term debt to total assets showed a positive and statically significant relationship. The result indicates that firms should inject more equity capital to fund their operations as it positively affects financial performance. Debt should be reduced as it has an inverse relationship with performance but if it is to be considered then long term debt is preferred as its effect on performance is positive. The finding of the project is inconsistent with the agency cost theory because debt-equity ratio and financial performance had a negative relationship whereas agency theory advocates for a positive relationship.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Capital structure looks at various types of capital that business enterprise uses to finance their main activities. Firms can finance their activities by using equity, debt or a combination of both forms of capital. In finance, capital structure looks at how enterprises are financed by a mixture of long term capital for example common shares, loans, debentures, reserves, and short term liabilities such as creditors, bank overdraft and others. (Nirajini & Priya 2013).

Capital structure decision is a major business decision because it has an impact on the financial performance of an organization. (Saad, 2010). Financial performance measures indicate the monetary strength of an enterprise and show the business enterprise capacity to make earnings from the owners' investments. The significance of financing decisions cannot be under estimated as many issues that result in firm collapse can be dealt with by strategic management of finances to grow the business while also attaining the enterprise goals (Salazar et al., 2012).

Formulating the ideal capital structure is a critical decision for the modern business enterprises. The decision impacts the business owner's risk and profits (Bodhanwala 2009). Capital structure impacts the operational, financing and investing decisions which has an effect on the firm growth, earnings and this will influence shareholders returns. The owners' risks are affected because debt is a fixed cost and if the economic environment is unstable it raises the risk of bankruptcy.

Capital structure decisions require creating a balance between anticipated returns and probable risks the enterprise can encounter from the various types of financing. Enterprises formulate their capital structure when they are starting operations. Additional capital injected into the business will require new capital structure decisions to be made. (Nirajini & Priya 2013). These decisions will require investigation on their effect on the enterprise earning and resulting liabilities.

Debt as a means of financing has many benefits; one main benefit is reducing enterprise tax liability because interest on loans is tax deductible. Another main benefit derives from agency theory which purports that it disciplines managers (Jensen, 1986) and deters them from utilizing excess money in activities that do not increase owners' wealth. The use of too much debt in the capital structure however has been seen to cause many cases of corporate firms' insolvency. The reason for this is linked to the high interest charged on debts which decreases working capital. Large debt obligations in a firm capital structure increase their financial risk. However additional share issuing also has the disadvantage of reducing shareholders stake in the firm.

The management mandate is then to formulate an ideal capital structure that capitalizes on tax benefits debt finance but also safeguards the firms against the risks of increased debt. Business enterprises should aspire to reduce financial risk and maximize earnings and increase their stock value. The ideal capital structure should combine the two types of financing in the best combination that increases the profits of the company and makes it competitive in the industry.

1.1.1 Capital Structure

Capital Structure of an enterprise denotes various combinations of securities a company uses

to fund its business activities. (Nirajini & Priya 2013). Companies use equity, debt or a mix of both types of financing. Capital structure adopted determines the capability of the firm to pay the different parties involved in the business their dues e.g. employees, creditors, dividends and others. (Opuku *et al.*, 2013).

The mixture of equity and debt that gives the lowest weighted average cost of capital is acceptable gauge of the optimal capital structure. Business enterprises select a given capital structure when they are initially formed and changes to the existing capital structure is referred to as capital restructuring. Restructuring happens if a firm changes one type of capital for another in such a way that the firms' assets remain unchanged.

Firm finance their business from internal as well as external sources. Current assets and reserves such as retained earnings are used as internal finance for business activities. Funds obtained internally in the business are considered to have lower cost as it does away with agency problems, transaction costs, and cost of bankruptcy or asymmetry of information as opposed to external finance. External funds are obtained from debt or new share issue. Equity comprises of common stock, preference stock and reserves. The payment paid to equity shareholders for what they have invested is dividends. Firms however pay dividends when they deem convenient. It is not mandatory obligation and firms may prefer to reinvest profits or undertake new investments and delay payment of dividends for a long time.

Business enterprises use debt finance that may either be long term or short term. Companies that use large amounts of debt are said to have high leverage. Companies are either high leverage or low leverage firms depending on the debt levels in their capital structure. Bank loans, bonds debentures and many others may be classified as long term debt. The shorter term debts include trade creditors, bank overdrafts and others. Debt attracts a rate of interest

that is fixed and is based on agreement between the lender and borrower. An interest payment on debt is a legal obligation that firms pay notwithstanding their financial circumstances.

Business enterprises can be financed by an all equity structure, all debt structure or a structure that is a mixture of the two types of financing in varying proportions. The first option refers to a firm that does not take advantage of leverage benefits. The all debt companies may not actually exist because of the difficulty of attracting lending due to lack of ownership. Mix financed firms may exist in many firms as they have real owners and firms can enjoy the gains of leverage (Sadiq *et al.*, 2017).

Financing by use of debt is less expensive than equity to a firm since lenders can accept less return since risk of default is low. Equity financiers take the highest risk and therefore enjoy greater returns. The optimal capital structure is one with maximum returns, minimum risks and increases the share price.

1.1.2 Financial performance

Financial performance uses measures that ascertain the level of effectiveness of an enterprise at deriving revenue from its investments. (Vedran, 2012). Financial performance measures attest to the capacity of an enterprise to manage weaknesses in the environment and take advantage of the strengths present to increase shareholders wealth. Financial performance measures comprise of return on assets, dividend per share, earning per share, and return on equity and more. This ratio that measure financial performance arise when statements of financial position items are linked with those in the income statement.

The investment objective by shareholder in a business is to multiply and expand their investment as time goes by. The measure effectiveness of a financial decision depends on the

financial performance outcome of the decision. (Gill *et al.*, 2011). Financial measurement ratios are a guide to stakeholders to evaluate the company growth over time.

The mean analysis using financial performance measure of ROE for commercial and services registered a fall in financial performance for five years 2013-2017.

Table 1.1 Financial Performance Trend

YEAR	2013	2014	2015	2016	2017
ROE	11.0%	9.5%	-82.1%	-56.9%	-44.1%

Source: NSE, 2020

This research resulted from this downward trend in financial performance and looks to fill the gap.

1.1.3 Commercial and services firms listed in Nairobi securities exchange

The firms listed in the Nairobi securities exchange are 65. These companies are grouped into 12 sectors and commercial and services category is one of them which comprises of eleven firms (NSE2020). The Commercial and services sector contribute to economic growth and development of Kenya by availing jobs, increasing gross domestic product and foreign exchange earnings.

The listed commercial and services firms at NSE provide important services in Kenya. Kenya Airway provides air freight services. Nation Media Group and Standard group provide print, broadcast and digital media services. Other services and products provided by firms in this segment are transport solutions, hospitality products, publishing, clothing and accessories, retail services, advertising and communication services.

Companies in the sector are aware that capital structure role is significant in profitability of the firms. Kenya airways recent capital restructuring agreed in June 2017 saw debt holders

exchange their debt for share capital. The national carrier Kenya airways listed in the commercial and services sector has suffering losses for the past five years including a Kenya shillings 26.2 billion loss in 2015/ 2016, the biggest loss in Kenyan corporate history. In the deal Kenyan government will own 48.9 per cent and a group of 11 local banks 38.1 per cent of the company after the debt for equity swap agreed in June 2017. The restructuring hopes to take the airline to profitability.

1.2 Statement of the Problem

Corporate managers are responsible for financing decisions including formulation of the enterprise capital structure, however poor capital structure choice can result in firm's financial failure. Although few companies operating in the commercial and services segment at Nairobi stock exchange have reported favorable financial performance, others have registered a downturn in performance. Reorganizing the financial structure of loss making and liquidating firms is a major task of the corporate managers. (Wamugo et al 2014). High debts levels which expose firms to finance risk have been seen as being a cause of poor performance in our region and beyond. The responsibility of corporate managers is therefore to make optimal capital structure decisions that will steer their firms to profitability in diverse economic environments.

Data from the financial performance trend in the commercial and services sector recorded a decline in performance in the five years 2013 to 2017. An example can be drawn from the ROE of Nation Media group which moved from 31.8% to 16.5% during the five years 2013-2017. ROE of Longhorn publisher declined from 31.4% to 12.5% during a similar period. The ROE of Scan group declined from 9.7% to 5.7% for 2013-2017. The complete summary indicating financial performance measurement outcome using ROE for NSE listed

commercial and services firms is set out in appendix IV below.

Amenya (2015) considered in his study all firms listed in NSE and found that return on equity (ROE) financial performance measure is affected by increase in debt negatively. Githire and Muturi (2015) researched the Nairobi securities exchange and found positive effect between financial performance and long term debt and equity. Short term debt had a negative relationship with financial performance. Masavi *et al.*, (2017) did a study on the agricultural sector in the NSE and concluded increasing the debt ratio increased financial performance and increase in debt-equity ratio decreased after tax profits. Ronoh and Ntoiti (2015) found that capital structure of Kenya commercial bank limited significantly and negatively affect banks financial performance.

Gichangi (2014) did a study on NSE listed non-financial firms and concluded that ROA performance measure is negatively affected by debt. Nirajini and Priya (2013) studied the securities exchange firms of Sri Lanka and found that the effect of capital structure on financial performance was positive. The preceding background has led the researcher try to fill the gap with this study that seeks to determine the effect of capital structure on financial performance of the listed commercial and services firms.

1.3 Objective of the study

The research was based on general and specific objectives that are indicated below.

1.3.1 General Objective of the study

The study objective was to evaluate the effect of capital structure on the financial performance of commercial and services companies listed at Nairobi Securities Exchange, Kenya.

1.3.2 Specific objectives

- i. To evaluate the effect of equity/ total assets ratio and financial performance of commercial and services firms listed at Nairobi Securities Exchange, Kenya.
- ii. To evaluate the effect of long term debt/ total assets ratio on financial performance of commercial and services firms listed at Nairobi Securities exchange, Kenya.
- iii. To determine the effect of debt-equity ratio on financial performance of firms listed at Nairobi Securities Exchange, Kenya.

1.4 Research Questions

- i. What effect does equity / total assets ratio have on financial performance of commercial and services firms listed on Nairobi Securities Exchange, Kenya?
- ii. What effect does long term debt/ total assets ratio have on financial performance of commercial and services listed firms on Nairobi Securities Exchange, Kenya?
- iii. Does debt-equity ratio affect the financial performance of commercial and services firms listed on Nairobi Securities Exchange, Kenya?

1.5 Significance of the study

Will enable future and current investors make enlightened decisions on investment choices that will increase their wealth. The study will assist management formulate ideal capital structures that can propel their firms to growth and improve their financial performance, increasing their competitiveness in the industry. Future researchers can use this study as a foundation for additional research and critique it to improve knowledge on the topic. The study also tests the applicability of established theories of capital structure in modern businesses.

1.6 Scope of the study

The research tried to determine effect of capital structure on financial performance of listed commercial and services firms at the Nairobi Securities Exchange. The scopes of the research involved a census of all eleven active companies listed in the sector and were in operation constantly for 2013- 2017. The period is adequate to generalize the findings.

1.7 Organization of the study

The study was organized into five chapters. Chapter one probes the study background, the established objective of the research, why the study is important, the scope to be covered and any limitation likely to be encountered during the study. Chapter two looks at the reviews of theoretical and empirical literature and established a conceptual framework. Chapter three deals on the research methodology which includes research design, targeted population, data collection instruments, data collection procedure and data analysis and presentation. Chapter four consists of the descriptive statistics, diagnostic test results, panel regression analysis and objective testing. Chapter five comprises the summary, conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter looks at literature review. Literature review includes the theoretical and the empirical reviews. Theoretical review identifies conclusions of traditional theories of capital structure and empirical review dealt findings of researchers who have documented their findings. A conceptual framework was developed with the help of the reviews.

2.2 Theoretical review

This review will examine four established theories on capital structure. The theories examined are Modigliani and Miller theories, the tradeoff theory, the pecking order theory and agency theory.

2.2.1 Modigliani and Miller theory

In 1958 Modigliani and Miller demonstrated the irrelevance theory that enterprise value does not depend on its capital structure. Their agreement was that the financing with either debt or equity in the capital structure does not affect the valuation of the firm or its capital cost. The theory was only true under conditions where there exist no bankruptcy costs, no transaction costs, no taxes and where there exists perfect markets and market information symmetry. They argued that if two companies were of identical size and their valuation was not the same, buyers of shares would sell the overvalued shares and invest in the company with undervalued share and the process is referred to as arbitrage. (Mwangi, J.M. 2016).

The initial irrelevance theory of capital was later corrected in Modigliani and Miller 1963 where capital structure was acknowledged to be relevant in deciding the valuation of the company. The tax benefit of debt due to the fact that it is tax deductible and thus reduces tax payable by the firm was acknowledged in this theory. Their argument was that firms with

higher debt use have a higher valuation due to less taxation

MM gave a larger valuation to leveraged company as opposed to the one without leverage since if earning is the same the company with leverage suffer less tax and will have a greater valuation. This theory supports 100% debt utilization to increase firm value. It advocates for increased use of debt to reduce tax payments. This theory is not practical in the business world because we lack perfect markets. The research tried to ascertain if increases in debt raised the value of the business enterprise as suggested by this theory.

2.2.2 Trade off theory of capital structure

This theory suggests that capital structure should be chosen by creating a balance between the tax protection of debts and the associated borrowing costs. Borrowing should be in moderation to manage this balance. (Myers 2005).

Debt offer protection from tax because it is deductible as an expense before taxation and the firm will pay less tax hence it will have more after tax outflow but it also faces the costs associated with too much debt. Debts marginal benefits reduce with increase in debt levels and associated marginal cost increase such that firms that desire to increase their market value should establish a tradeoff between debt and equity. The target capital structure of the firm should try to balance the tax saving advantage of debt against the distress costs of borrowing.

Studies have suggested that companies in similar industries tend to have common leverage and tend to modify their leverage level towards the industry average. The study expounds on the reason for capital structure being different for differing industries but does not explain why profitable companies avoid borrowing while the study suggests otherwise.

2.2.3 Pecking order theory

The theory was improved and made popular by (Myer & Majluf 1984). The theory assumption is that there exists asymmetrical information where company management has more information concerning the firm's financials, risks and future outlook than investors. This theory attempts to provide an explanation of how firms raise money for new investments. Harris and Raviv 1991 suggest that company capital structure choice can signal company secret information to outside parties. Firms that can finance themselves adequately using internal fund send a strong message that it has adequate resources to finance itself.

When the firm issues debt it shows that managers are certain that the performance of the firm is good enough to finance the fixed interest charged on debt. The issue of equity is interpreted to be a negative signal that company shares are overpriced which makes investor put a lower value on the new share issue thus lowering their price.

This theory claims that a pecking order is followed by management in funding new investments; retained earnings are top in the hierarchy, then debts follow and lastly issuing new equity. When funding investments, internal funds are given preference over external funds. The preference for internal finance is because the company does not incur additional charges that are associated with external finance e.g. floatation charges, interest payments.

When it is necessary to use external finance the preference is firstly to consider debt, then convertible shares, then preferential shares and lastly ordinary shares. This order enables managers to retain control of the company and reduce equity issuing costs. Myers (2005) clarifies that the theory explains why debt is preferable when financing externally and also why firms which do well have more funds to finance themselves internally and therefore incur less debts. Firms that make less profit are likely to require more external finance.

2.2.4 Agency Cost Theory

This theory addresses the agency problem which asserts that the manager as employees of firms and the shareholder who are owners of the firm have differing goals; the management tries to increase their salaries and perks while the owners wish to maximize the return to their shares. Jensen and Meckling (1976) contend that managers who are agents employed by the principal to manage on their behalf may try to increase their own welfare as opposed to that of the company. Shareholders as principal consequently are forced to use measures that try to compel the agent to put the firm's interest first and as a result incur agency costs such as bonding costs, monitoring costs and others. The principal incur agency costs to ensure excess cash flows are not invested in projects that are not tenable or to increase agents' perks. The theory advocates for increasing the debt equity ratio compel management to manage the firm efficiently. The study wanted to determine whether increasing debt equity ratio increased the value of the firm as advocated by this theory.

2.3 Empirical literature

2.3.1 Equity and financial performance

Githire and Muturi (2015) studied all listed companies at Nairobi securities exchange and found that long term debt and equity positively affected financial performance. Short term debt affected financial performance was negatively. Ronoh and Ntoiti (2015 studied on capital structure and financial performance of Kenya Commercial Bank Ltd and concluded that deposits, debt and equity affected the financial performance measure of return on assets negatively. Retained earnings ratio affected financial performance measure of return on assets positively but was insignificant.

Musila (2015) did a study on equity financing and financial performance of energy and petroleum sector companies at NSE and found that equity ratio and growth opportunities affected financial performance positively.

2.3.2 Debt and Financial Performance

Wamugo *et al.*, (2014) did a study on non-financial firms listed at Nairobi stock exchange and concluded that return on asset and return on equity financial measures are negatively affected by increased debt. The study advocates for reduction of long term debt to improve performance. The study findings are similar to Bafana *et al.*, (2015) and Gichangi (2014) who showed that ROA performance measure is negatively affected by debt.

Amenya (2013) study was on all companies listed NSE from 2008-2013. The study found that return on equity is negatively affected by rise in debt. The research advocates for debt reduction to improve financial performance. Kuria and Omboi (2015) did a study on capital structure and performance of banking and investment companies at NSE and uncovered that financial performance is not statistically significantly affected by long term debt. ROE was positively affected by debt to equity ratio and negatively affected ROA for investments and banking firms listed in NSE.

Masavi *et al.*, (2017) did a study on agricultural sector at NSE and results showed that debt ratio increase improved financial performance and increased debt-equity decreased after tax profit. Nijarini and priya (2013) did a study on capital structure and financial performance of Sri Lanka listed companies. Capital structure showed a positive relationship with financial performance. Ahmad *et al.*, (2012) studied Malaysian firms using ROA and ROE for financial performance and capital structure variables of short term debts, total debt and long

term debt. This research showed return on assets was positive for short term debt and total debt. All the debt levels significantly negatively affected ROE.

Badar and Saeed (2013) researched the listed companies in food segment of Karachi stock exchange. Long term debt affected financial performance positively and short term debt negatively affected financial performance. Ebaid (2009) studied capital structure and performance of firms in Egypt. Capital structure variables were long term debt to asset ratio total debt to asset ratio and short term debt to asset ratio. Return on equity, return on assets and gross profit margin measured financial performance. The conclusion was that the relationship between capital structure and financial performance was weak or nonexistent.

2.4 Summary of literature and research gaps

The findings of various researchers sampled shows there is lack of agreement on the topic which informs the need for continued research. The topic of capital structure and financial performance of listed commercial and services companies in Kenya has not been well researched despite the sector showing poor performance. Theories of capital structure were established and tried in developed world and their relevance to modern businesses in developing world need to be tested.

Table 2.1 Summary of Empirical Literature and Research Gaps.

RESEARCHER	OBJECTIVES	FINDINGS	RESEARCH GAPS	FOCUS OF THIS STUDY
Githire and Muturi(2015) Kenya	Capital structure and performance of all listed companies NSE, Kenya.	Results showed performance was negatively affected by short term debt. Equity and long term debt had a positive effect on performance.	Debt-equity ratio was not studied	Will also study debt-equity ratio

Ronoh and Ntoiti (2015) Kenya	Capital structure and financial performance of Kenya Commercial Bank Ltd	Effect of equity, debt and deposit on return on assets is negative. Retained assets had positive but insignificant relationship with ROA.	Was not specific to commercial and services listed firms in Kenya	Focused on listed commercial and services firms in Kenya.
Musila, P. (2015) Kenya.	Equity financing and financial performance of listed firms in energy and petroleum segment of NSE	The relationship between financial performance and equity ratio and growth opportunities was positive and significant.	Effect of debt was not studied	Studied the effects of debt on performance
Wamugo <i>et al.</i> , (2014) Kenya	Capital structure and performance of listed non-financial firms.	Increase debt affected ROA negatively.	Equity/ total assets ratio was not studied	Equity/total assets ratio will be studied.
Amenya(2013) Kenya	Capital structure and financial performance of all listed companies in NSE, Kenya	Increased debt affected performance negatively.	Equity/ total assets ratio was not studied	Equity/total assets ratio will be studied
Kuria and Omboi(2015) Kenya	Capital structure and performance of banking and investment companies listed at NSE, Kenya	Debt\equity ratio relationship with ROE was positive and ROA was negative. Long term debt had no effect on performance.	Capital structure variables e.g. equity/ total assets ratio was not studied	Capital structure variable e.g. equity/ total assets ratio will be studied
Masavi <i>et al.</i> , (2017) Kenya	Capital structure and financial performance of Agricultural firms listed in NSE, Kenya.	Debt\equity ratio had a negative relationship with performance while debt ratio affected performance negatively.	Commercial and services sector was not a main focus.	Commercial and services sector will be a main focus

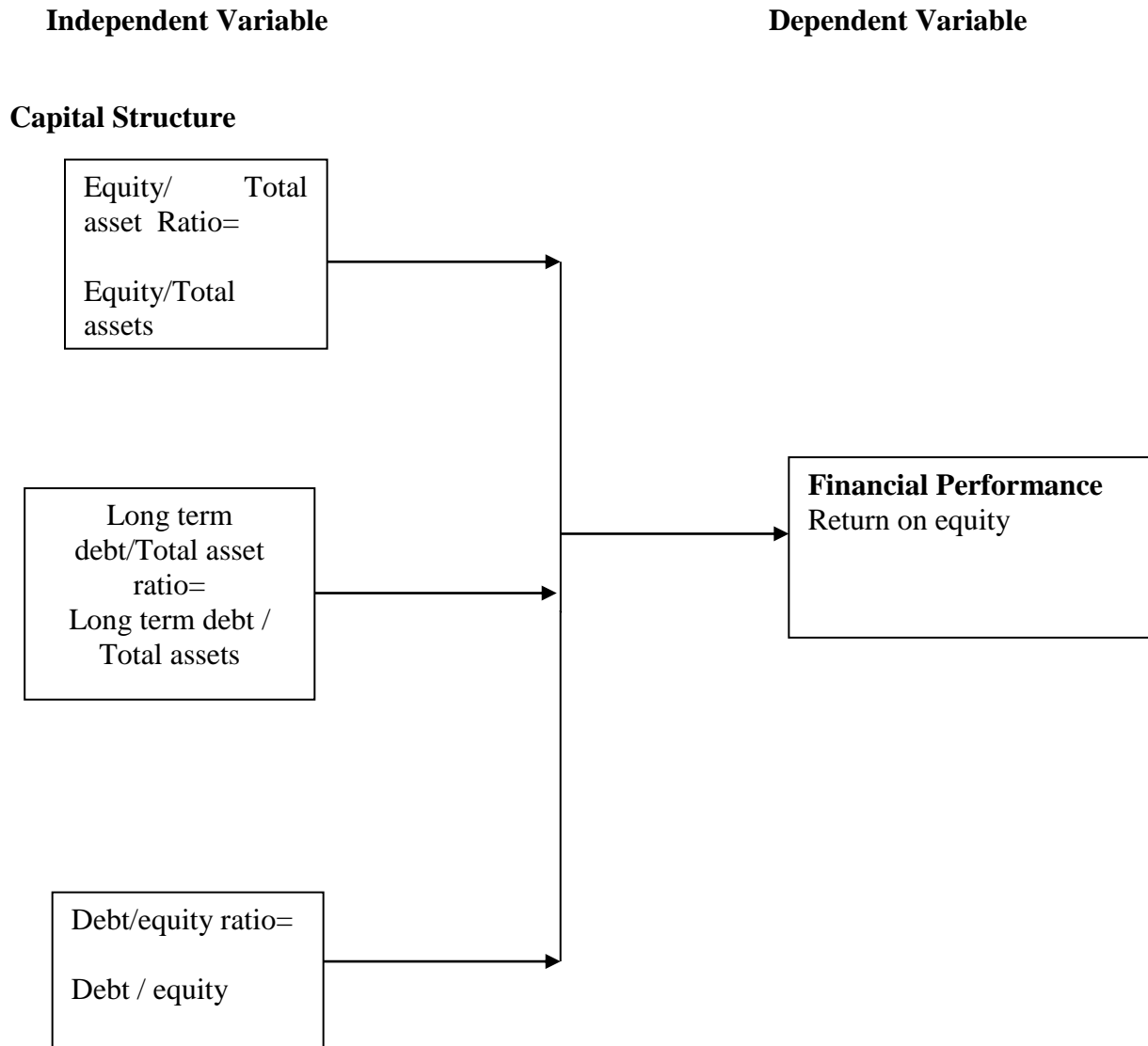
Nirajini and Priya (2013) Sri Lanka	Capital structure and performance of listed companies in Sri Lanka	Relationship between capital structure and performance was positive.	Equity/ total assets ratio was not studied	Equity/ total assets ratio will be studied
Ahmad <i>et al.</i> , (2012) Malaysian	Capital structure and financial performance of Malaysian companies focusing on consumer and industrial sectors	All types of debt affected ROE negatively and significantly.	Equity/ total assets ratio and debt-equity ratio were not studied.	Equity/ total assets ratio and debt-equity ratio will be studied.
Badar and Saeed (2013) Pakistan	Capital structure and financial performance of companies listed on the food sector listed on Karachi stock exchange	Long term debt affected performance positively and short term debt had a negatively affected performance.	Equity/ total assets ratio and return on equity were not studied.	Equity/ total assets ratio and return on equity will be studied
Ebaid (2009) Egypt	Relationship of capital structure and financial performance of firms in Egypt.	Capital structure relationship with performance was weak or none.	Equity/ total assets ratio and debt equity ratio were not studied.	Equity/ total assets ratio and debt equity ratio will be studied

Source: Researcher 2020

2.5 Conceptual Framework

The conceptual framework is a systematic tool that guides research work towards the study objectives. It establishes interactions between dependent and independent variables and point

out researchers understanding of the nature of relationship between the variables. Financial performance represents the dependent variable measured by return on assets. Capital structure represents the independent variable measured by equity/ total assets ratio, long term debt/ total assets ratio and debt- equity ratio.



Source: Researcher 2020

Figure 2:1 Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprise of the research design used in the study, the target population to be included, sampling design used, data collection technique applied and data analysis method used.

3.2 Research Design

A descriptive survey research design was used in this study. According to (Mugenda&Mugenda2003), descriptive research design is a systematic method of investigation where data is gathered and analyzed in order to explain the prevailing conditions or interrelationships regarding a problem. Descriptive design was suitable for this study due to the fact that it examines and describes the way a subject of study behaves without controlling it at all.

3.3 Empirical Model

The model aimed at showing the relationship between capital structure and financial performance of commercial and service companies listed at NSE, Kenya.

The multiple regression models applied is shown below

$$Y_{it} = \beta + B_1X_{1it} + B_2X_{2it} + B_3X_{3it} + e$$

Where,

Y- Financial performance measure of Return on Equity (ROE)

β - Constant

X₁- equity / total assets ratio which is to be measured by equity / total assets (E/TA)

X₂- financial leverage which is to be measured by debt/ total assets (D/TA)

X_3 - debt-equity ratio which is measured by debt/ equity (D/E)

B_1, B_2 and B_3 - are regression coefficients representing the independent variables

e- Error term –it denotes the unexplained variations in the regression model.

it- firms performance over a certain period

3.4 Operationalization and Measurement of Study Variables

The study analyzed the relationship between capital structure and financial performance of commercial and services firms listed at the NSE. Financial performance represented the dependent variable measured by Return on Equity (ROE). Capital structure represented the independent variable measured debt-equity ratio, long term debt\ total asset ratio and equity\total asset ratio.

Table 3.1: Operationalization and Measurement of Study Variables.

Type of Variable	Variable	Operationalization	Measurement
Dependent	Performance	Return on equity(ROE)	<u>Net income</u> Shareholders' equity
Independent	Capital structure	Equity/ Total assets ratio E/TA	<u>Shareholders' equity</u> Total assets
		Debt/ Total assets ratio D/TA	<u>Long term debt</u> Total assets
		Debt- equity ratio D/E	<u>Total debt</u> Total equity

Source: Researcher 2020

3.5 Target population

Population represents all individual, events or things that have similar characteristics that can be observed. (Mugenda&Mugenda2003). The study targeted population was all the eleven companies listed in the commercial and services sector at NSE. It was thus a census study. The Nairobi securities exchange listed companies were preferred because they are reputable companies with their financial statements being accessible and can be relied upon because they submit to audit by international audit firms.

3.6 Sampling design

Sampling involves choosing a few items in a population and utilizing them to make conclusions about the entire population. A census study was applied in the study and all the eleven companies in the commercial and services segment at NSE was studied without sampling. According to Mugenda and Mugenda (2003) a census or population inquiry is more representative as everybody is accorded fair chance of participating in the research study.

3.7 Data collection instruments

Secondary data was used in the study. The secondary data was derived from published report of the selected firms which are accessible at NSE and CMA. The secondary data collection instrument used in the study is displayed in appendix III below and was used to extract data for return on equity, debt/equity ratio, and equity\ total asset ratio and long term debt\ total assets ratio. The instrument gathered all relevant data to analyze the variables

3.7.1 Reliability of data collection instrument

Reliability is the degree to which a research instrument gives conclusions that are constant every time it is carried out on the same test subjects. (Mugenda&Mugenda2003). This study adopted internal consistency which is a measure of consistency across items. The measure for reliability is Cronbach's alpha which is based on internal consistency. The standard minimum value of alpha is 0.7 is recommended for this test.

3.8 Data collection procedure

The research used secondary data to collect relevant information. Published reports and financial statement of firms listed in the commercial and services sector at NSE from 2013-2017 which are available from NSE handbooks and at CMA provided the data required for the study. Income statements, statements of financial position and notes to the accounts provided data regarding return on assets, long term debt, total assets, shareholders equity, net income, total debt.

3.9 Data analysis and presentation

The data analysis and summary was done using quantitative approaches descriptive statistics and panel data regression analysis. Panel data regression analysis helped in determining the relationship between capital structure and the financial performance of firms listed at the NSE at 5% significant level. This data analysis was done using Stata4.0 program. Descriptive and inferential statistics was used for presentation by the use of tables. Diagnostic test before undertaking data analysis helped to affirm assumptions of regression analysis. The

diagnostics tests undertaken were normality tests, multicollinearity test, autocorrelation test, heteroscedascity test and hausman test.

3.10 Ethical Considerations

The researcher sought proper permission from university and relevant authorizing bodies like NACOSTI. Good record of research activities for example data collection, the research designs and project papers was maintained. Data was checked thoroughly during data analysis, and interpretation, literature review, writing the project to prevent bias in areas where objectivity is necessary.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND PRESENTATION

4.1 Introduction

This chapter consists of the descriptive statistics, diagnostic test results, panel regression analysis and objective testing. It gives details on the relationship between variables.

4.2 Descriptive statistics

The descriptive statistics assists in displaying the key elements of the data utilized in the study. Descriptive statistics analysis was done with outcome displayed in the table 4.1 below.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	55	-.3174727	1.094715	-4.627	.429
ETA	55	.4284182	.3360905	-.782	.998
DE	55	1.142898	2.752602	-.292	17.68
DTA	55	.2533782	.2238888	.0003	.819

Source (Study data, 2020)

From the results, ROE mean was -0.3175 and the standard deviation was 1.0947 with a minimum value of -4.627 and the maximum value was 0.429. This shows stability of ROE over throughout the period of study. Also, equity to total asset ratio was stable with a mean of 0.4284 and standard deviation of 0.3361 with a minimum value of -0.782 and a maximum value of 0.998 implying stability of outcome over the period. Debt to equity ratio had a mean of 1.1429 and a standard deviation of 2.7526 with a minimum value of -0.292 and a

maximum value of 17.68 indicating a slight volatility. Debt to total asset had a mean of 0.2534 and a standard deviation of 0.2239 implying a stable outcome over the period.

4.3 Test for Reliability

This test was carried out using Cronbach alpha in the stata and the results were presented in table 4.2 below;

Table 4.2: Test for Reliability

Average interitem correlation:	0.4588
Number of items in the scale:	4
Scale reliability coefficient:	0.7722

Source: (Study data, 2020)

From the above results the internal consistency was measure using Cronbach alpha whose minimum standard value is 0.7. In this study the researcher’s data was reliable since it had an alpha coefficient of 0.7722.

4.4 Diagnostic Test Results

Diagnostic test was done before doing the regression. The tests done were tests for stationarity, correlation test, multicollinearity test, autocorrelation test, normality test and the Hausman specification test.

4.4.1. Stationarity Test

This test was done using the Hadri LM test and the results presented in table 4.3 below;

Table 4.3: Summary of the Test for Stationarity

Hadri LM test for DTA		
<hr/>		
Ho: All panels are stationary	Number of panels =	11
Ha: Some panels contain unit roots	Number of periods =	5
Time trend: Not included	Asymptotics: T, N ->	Infinity
Heteroskedasticity: Not robust		sequentially
LR variance: (not used)		
<hr/>		
	Statistic	p-value
<hr/>		
z	4.6020	0.0000
<hr/>		

Source (Study Data, 2020)

A time series is said to be stationary if the mean, variance or pattern doesn't show an upward and downward trend. Under the Hadri LM test, the null hypothesis states that the series is non-stationary while the alternative hypothesis states that the series is stationary. A non-stationary data set shows false results. A statistical p value of less than 0.05 rejects the null hypothesis indicating that the data set is stationary. The conclusion in the table above indicates that the overall p value was 0.000. This indicates that the data set was stationary.

4.4.2. Test for Correlation

Correlation test is a test that shows how strongly a pair of variable is correlated. This test was done using the Pearson's correlation test and conclusions displayed in the table 4.4 below. The test was used to test for multicollinearity.

Table 4.4: Pearson Correlation test

	ROE	ETA	DE	DTA
ROE	1.0000			
ETA	0.4767	1.0000		
DE	-0.6971	-0.3814	1.0000	
DTA	-0.2494	-0.4275	0.5205	1.0000

Source (Study Data, 2019)

According to Green, (2008) a correlation of 0.8 or -0.8 in a pair of variable show strong correlation and implies that there is multicollinearity. From table 4.4 above, there is no pair of association that has a correlation of more than 0.8 or -0.8 meaning that multicollinearity does not exist.

4.4.3. Normality Test

According to Green, (2008), the null hypothesis states that data is not normally distributed while alternative hypothesis states that the data is normally distributed. A p value smaller than 0.05 indicates non normality of the data and a p value greater than 0.05 indicates that there is normality. This test was done using Doornik Hanson test (2008) which is based on skewness and kurtosis of multivariate data that is transformed to ensure independence. It is a better substitute to the Shapiro-wilk test for most tested multivariate distributions. The normality results were shown in table 4.5 below;

Table 4.5 Normality Test

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
ROE	55	0.2500	0.0000	38.90	0.1200
ETA	55	0.3021	0.0073	16.66	0.3102
DE	55	0.1803	0.0113	61.19	0.2100
DTA	55	0.0402	0.6073	4.530	0.1039

Source (Study Data, 2020)

The table above indicates p values are >0.05 and so the results show that the data set was normally distributed.

4.4.4 Test for Heteroscedasticity

The test for heteroscedasticity looks to determine if the variability of the variables was not equal across a range of the predictor variables. The test was done using the White's test and the results displayed in table 4.6 below.

Table 4.6 Test for Heteroscedasticity.

White's test for H_0 : homoskedasticity
against H_a : unrestricted heteroskedasticity

chi2(4) = 16.10

Prob > chi2 = 0.0029

Source (Study Data, 2020)

The null hypothesis states that there is homoscedasticity across a range of the predictor variables while the alternative hypothesis states there is heteroscedasticity. A p value of 0.05 or less indicates that heteroscedasticity exists while a p value of more than 0.05 indicates homoscedasticity exists. The overall p value got above is 0.0029 meaning that there is heteroscedasticity and so we accept the null hypothesis and conclude that there is homoscedasticity

4.4.5 Autocorrelation Test

The test for autocorrelation looked to determine whether the error terms in a regression model correlate over time. The test was done using Durbin Watson test and the results displayed in table 4.7 below;

Table 4.7: Test for Autocorrelation

```
. prais ROE ETA DE DTA, corc
```

Iteration 0: rho = 0.0000
Iteration 1: rho = 0.1318
Iteration 2: rho = 0.1411
Iteration 3: rho = 0.1419
Iteration 4: rho = 0.1420
Iteration 5: rho = 0.1420
Iteration 6: rho = 0.1420

Cochrane-Orcutt AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs =	54
Model	35.3690995	3	11.7896998	F(3, 50) =	22.14
Residual	26.6305679	50	.532611358	Prob > F =	0.0000
Total	61.9996674	53	1.16980505	R-squared =	0.5705
				Adj R-squared =	0.5447
				Root MSE =	.7298

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ETA	.9696115	.3619778	2.68	0.010	.2425577	1.696665
DE	-.2870216	.0426183	-6.73	0.000	-.3726229	-.2014203
DTA	1.168823	.5862275	1.99	0.052	-.0086498	2.346295
_cons	-.7112844	.2708415	-2.63	0.011	-1.255285	-.1672833
rho	.1419691					

Durbin-Watson statistic (original) 1.626169
Durbin-Watson statistic (transformed) 1.806384

Source (Study Data, 2020)

The original Durbin Watson statistic of 1.626169 showed the existence of a positive serial correlation. The data set was transformed and the new Durbin Watson Statistic obtained was 1.806384 which is approximately equal to the established threshold of 2 and based on the transformed results it depicts that there is no serial autocorrelation.

4.4.6 Hausman test

The researcher carried out the Hausman test to determine which model to use in carrying out a panel regression analysis. The null hypothesis stated that the preferred model is random effect and alternative hypothesis stated that the preferred model is the fixed effect model. A p value smaller than 0.05 rejects the null hypothesis therefore the fixed effect model is used, while a p value more than 0.05 fails to reject the null hypothesis therefore a random effect model is used. The results were presented in table 4.8 below;

Table 4.8: Hausman test.

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
ETA	.6846373	1.025434	-.3407965	.4082344
DE	-.3109125	-.2821918	-.0287207	.0159935
DTA	.1021999	1.244575	-1.142375	.8808597

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 6.06
 Prob>chi2 = 0.1086

Source (Study Data, 2020)

From the findings of table 4.8 above a p value of 0.1086 was obtained, which is more than 0.05. From this finding the null hypothesis was not rejected hence the study used the random effect model to perform a panel regression.

4.5 Panel Regression Analysis

The panel regression was carried out based on the empirical model and the results were presented in table 4.9 below.

Table 4.9 Panel regression analysis results

```

Random-effects GLS regression              Number of obs   =          55
Group variable: ID                        Number of groups =          11

R-sq:  within = 0.5452                    Obs per group:  min =          5
        between = 0.7096                    avg =          5.0
        overall = 0.5813                    max =          5

corr(u_i, X) = 0 (assumed)                Wald chi2(3)    =          70.79
                                                Prob > chi2     =          0.0000

```

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
ETA	1.025434	.3336246	3.07	0.002	.3715417 1.679326
DE	-.2821918	.0431291	-6.54	0.000	-.3667232 -.1976603
DTA	1.244575	.5421974	2.30	0.022	.181888 2.307263
_cons	-.749619	.2447276	-3.06	0.002	-1.229276 -.2699617
sigma_u	0				
sigma_e	.71572063				
rho	0	(fraction of variance due to u_i)			

Source (Study Data, 2020)

Without the inclusion of the predictor variables, the ROE of the companies increased by - 0.7496. This increase is significant as seen by the p value of 0.002. A unit increase in the company's equity to total asset ratio results to an increase in the ROE of companies by 1.0254 times. This increase is significant as demonstrated by the p value obtained of 0.002. This finding agrees with those by Githire and Muturi (2015) studied on all listed companies at Nairobi securities exchange and found that that the effect of equity ratio on financial

performance was positive. It also agrees with the findings by Musila (2015) who did a study on the effect of equity financing on financial performance of firms listed under energy and petroleum sector at NSE and found that equity ratio and growth opportunities had a positive relationship with financial performance.

Secondly, a unit increase in the debt to equity ratio of the companies leads to a decline in the companies ROE by -0.2822. The decline is significant since the p value obtained was 0.000. These results agree with the finding by Masavi *et al.*, (2017) who did a study on agricultural sector in the NSE and concluded that debt-equity ratio reduced profits after tax. It agrees with findings by Amenya (2013) studied all listed companies at Nairobi securities exchange. The research concluded that return on equity financial measure is negatively affected by increased debt. It also agrees with the findings by Wamugo *et al.*, (2014) who did a study on non-financial firms listed at Nairobi stock exchange and results showed that return on assets and return on equity is negatively and significantly affected by increased debt. It contradicts the findings by Kuria and Omboi (2015) who concluded that the relationship between ROE and Debt to equity ratio was positive.

Lastly, a unit increase in long term debt to total asset of the company's leads to an increase in the companies ROE by 1.2446. The increase is significant with a p value of 0.022. These findings are in line to those of Badar and Saeed (2013) who studied companies in the food sector listed on Karachi stock exchange. The relationship between company performance and short term debts was negative and relationship between company performance and long term debt was positive and significant. The researcher's findings contradict those by Kuria and Omboi (2015) who did a study on effect of capital structure on performance of investment and banking firms listed at NSE and concluded that financial performance of

those firms is not affected significantly by capital structure. An overall R^2 of 0.5813 was obtained which implies that, the predictor variables explain 58.13 % of the change in the ROE of the companies that are listed at the NSE.

The equation thus become

$$\mathbf{ROE_{it} = -0.7496 + 1.0254ETA_{it} - 0.2822DE_{it} + 1.2446DTA_{it}}$$

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter comprises the summary, conclusions and recommendations of the study. It gives an analysis of conclusions from research results and the recommendations based on the study.

5.2 Summary of the Study

The financial performance of commercial and services firms listed at the NSE is affected by capital structure. This study intended to contribute to research in determining the extent capital structure affect financial performance of commercial and services firms in Kenya. The specific objectives of this study were: to determine the effect equity to total asset ratio, long term debt to total asset ratio and debt to equity ratio on financial performance of commercial services firms listed at the Nairobi Securities Exchange, Kenya. The study was based on four theories namely: Modigliani and Miller theory, Trade Off theory of capital structure, Pecking Order theory, and Agency Cost theory. The study applied a descriptive research design. A census of all 11 listed commercial and services firms in Kenya that were in operation from 2013 to 2017 was the study population. The analysis of data was based on panel regression analysis where diagnostic tests were done before the regression.

The findings show that the effect of equity to total asset ratio on financial performance was positive and statistically significant. Also, the results indicate a significant positive relationship between the long term debt to total asset ratio and ROE. Furthermore, results from this study established a negatively statistically significant relationship between debt to

equity ratio and the ROE. The findings do not agree with agency theory as debt to equity ratio shows a decrease in performance instead of vice versa.

5.3 Conclusion

The conclusion of the study is depending on the research results. One objective of the study was to determine the effect of equity to total asset ratio on financial performance of commercial and services firms listed at the NSE. In respect to this, the study found that the effect of equity to total asset ratio on financial performance is positively statistically significant. With regard to the effect of long term debt to total asset ratio on financial performance of commercial and services firms, the study concluded that long term debt to total asset ratio positively and significantly affects the financial performance of commercial and services firms listed at the NSE, Kenya.

Regarding the effect of debt to equity ratio on financial performance of commercial services firms listed at the NSE. The study determined that there exists a negative and significant effect of debt to equity ratio on financial performance of commercial services firms listed at the NSE, Kenya.

5.4 Policy Recommendations

The policy recommendations of the study are based on the variables with significant effect on financial performance of commercial and services firms listed at the NSE, Kenya. The study concluded that equity to total asset ratio positively and significantly affect financial performance of commercial and services firms listed on the NSE, Kenya. Hence high equity-to-asset ratio makes the firm have less leverage and a bigger share of the assets are owned by the firm and its investors thus the firms reduces its financial risk and increase its wealth. The study concluded that the effect of long term debt to total asset ratio on financial performance

is positive and statistically significant. Therefore, the study recommends that firm management should first consider using long term debt than other forms of debt to increase its return. The study also concluded that the effect of debt to equity ratio on financial performance is negative and statistically significant. Therefore, the study advocates for firm management should improve on their internal sourcing by investing more in equity capital.

5.5 Limitations of the study and Suggestions for Further Research

The study was done on commercial and services sector and findings may not be applicable to other sectors at NSE without exceptions. Time limits allowed only a few capital structure variables and financial performance measures to be studied. A lot more time and resources would have been necessary to study all capital structure variables and financial performance measures.

The study sought to establish the effect of capital structure on financial performance of commercial and services firms listed at the Nairobi securities exchange in Kenya. Further studies can focus on other sectors of the stock market.

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APPENDICES

Appendix I: Letter of Introduction

Dear Sir/Madam,

RE: REQUEST FOR RESEARCH INFORMATION.

The researcher is pursuing a MBA (finance) at the school of business, Kenyatta University. I will undertake a research project that looks at the effect of capital structure on financial performance of companies listed in the commercial and services sector at the NSE as one of the requirements for the course.

Consequently, I would like to request for your help to access relevant information for purpose of this project. You can be guaranteed that the information will be used in this thesis and for academic purposes solely.

Yours faithfully,

Caroline Muraguri

Appendix II: List of Companies listed Commercial and services sector at NSE as 31 December 2017.

Commercial and Services Firms

1. Express Kenya Ltd
2. Kenya Airways Ltd
3. Nation Media Group
4. Standard Group Ltd
5. TPS Eastern Africa (Serena) Ltd
6. Scan Group Ltd
7. Uchumi Supermarket Ltd
8. Longhorn Kenya Ltd
9. Sameer Africa Ltd
10. Deacons (East Africa) Plc
11. Nairobi Business Ventures Ltd

Appendix III: Secondary Data Collection Tool

COMPANY NAME					
YEAR	2013	2014	2015	2016	2017
NET INCOME					
TOTAL ASSETS					
SHAREHOLDERS EQUITY					
LONGTERM DEBT					

APPENDIX IV: Financial performance of commercial and services firms as measured by ROE

COMPANY		YEAR				
		2013	2014	2015	2016	2017
Express Kenya	ROE	0.11%	-10.1%	-50%	-417%	-134.3%
Kenya Airways Ltd	ROE	-25.1%	-11.9%	-428.4%	-73.5%	-22.7%
Nation Media Group	ROE	31.4%	27.4%	23.1%	18.1%	16.5%
Standard Group Ltd	ROE	11.9%	12.6%	-15.4%	9.5%	-16.9%
TPS Eastern Africa(Serena) Ltd	ROE	4.2%	2.6%	-2.8%	1.3%	1.3%
Scan Group Ltd	ROE	9.7%	6.8%	5.5%	5.2%	5.7%
Uchumi Supermarket Ltd	ROE	11.8%	10.9%	-462.6%	-135%	-49.6%
Longhorn Kenya Ltd	ROE	31.4%	24.2%	14.5%	10.6%	12.5%
Sameer Africa Ltd	ROE	14.9%	-2.6%	-0.6%	-35.5%	0.7%
Deacons(East Africa Ltd) Plc	ROE	13.1%	4.1%	6.6%	-19.4%	-225.3%
Nairobi Business Ventures Ltd	ROE	9.9%	41.1%	6%	8.8%	-73%