

EFFECT OF CAPITAL STRUCTURE ON THE FINANCIAL
PERFORMANCE OF LISTED CEMENT MANUFACTURING
COMPANIES IN KENYA

MUYA, JOHN E. KIHUMBA

D53/OL/13401/2004

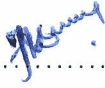
A RESEARCH PROPOSAL SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTERS OF BUSINESS ADMINISTRATION (FINANCE) OF KENYATTA
UNIVERSITY

SEPTEMBER 2013

DECLARATION

Declaration by candidate:

This project is my original work and has never been presented for a degree award in any other university.



SEPTEMBER 26, 2013

MUYA, JOHN E. KIHUMBA

DATE

D53/0L/13401/2004

Declaration by supervisor:

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

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



29.09.13

MR. D. NGABA

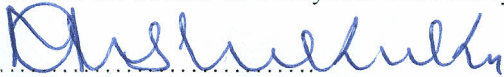
DATE

DEPARTMENT OF ACCOUNTING AND FINANCE

SCHOOL OF BUSINESS

KENYATTA UNIVERSITY

For and on behalf of Kenyatta University



1/10/2013

Signature

Date

MR FREDRICK .W.S NDEDE

CHAIRMAN DEPARTMENT OF ACCOUNTING AND FINANCE

SCHOOL OF BUSINESS

DEDICATIONS

In the loving memory of Ernest Kihumba Chege and Charles Muya Kihumba.

ACKNOWLEDGMENTS

My appreciation first goes to my supervisor Mr. D. Ngaba for guiding me throughout this research. The comments and corrections he made were very useful for me during my research.

To the staff of the school of business am truly grateful.

My heartfelt gratitude goes to my parents for financial support.

My brothers and sisters for your encouragement, material support and prayers, am truly grateful.

To my wife and daughter, thank you for understanding. To my MBA class mates, I really enjoyed your company.

ABSTRACT

The purpose of this study was to establish the relationship between capital structure and financial performance of listed cement manufacturing companies in Kenya. Capital structure has attracted intense debate and scholarly attention across industries in the corporate finance literature over the past decades. However, in the context of the Cement manufacturing industry, the subject has received limited research attention. Capital structure decision is a vital one since profitability of an enterprise is directly affected by such decision. The objectives of the study were to examine the relationship between debt to equity ratio and Net profit margin of listed cement manufacturing plants in Kenya, to examine the relationship between debt to equity ratio and Return on Capital Employed of listed cement manufacturing plants in Kenya, to examine the relationship between debt to equity ratio and Return on Equity of listed cement manufacturing plants in Kenya, to examine the relationship between debt to total funds and Net profit margin of listed cement manufacturing plants in Kenya, to examine the relationship between debt to total funds and Return on Capital Employed of listed cement manufacturing plants in Kenya and to examine the relationship between debt to total funds and Return on Equity of listed cement manufacturing plants in Kenya. The study used longitudinal research design with target population being listed cement manufacturing firms in the NSE.

For this purpose all the three cement manufacturing firms listed in Nairobi Securities Exchange was used. Secondary data from published financial statements for the period 2006 - 2011 was collected. Empirical data on capital structure and financial performance was analyzed using SPSS to establish relationships between the variables selected for the study. Pearson's correlation coefficient was determined and Regression analysis was also used to determine the relationship between capital structure and financial performance of listed cement manufacturing companies in Kenya. Using various measures of financial performance, results indicated that capital structure influences financial performance, although not exclusively. Total debt was found to be significant in determining net profit and return on capital employed in the cement manufacturing industry in Kenya. The mean values of debt/equity ratio and debt to total funds were 825.15% and 88.68% respectively. The mean value of debt/equity ratio suggests that debt is 8.25 times higher than equity capital. The mean value of debt to total funds ratio indicates 89% of the total capital of listed cement companies in Kenya is made up of debt. Long term debt and total debt were found to be insignificant in determining return on equity in Cement manufacturing industry. The R^2 values were found to be significant for the impact of debt to total funds on net profit. But no significant impact was found on the remaining dependent variables. Total debts impact on net profit was found to be 50.5%. The effect of total debt on return on equity as the least ($R^2 = 6\%$). This reveals that the remaining 94% is influenced by other factors other than total debt. This means that other factors are probably a better predictor of return on equity than total debt. The study recommends that cement manufacturing firms should make their financing decisions prudently in order to remain competitive in the industry and thereby make higher profits. Further it would be desirable to extend the study and examine capital structure and profitability of non listed cement manufacturing companies.

TABLE OF CONTENTS

	Page
DECLARATION	ii
DEDICATIONS.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
TABLE OF CONTENT.....	vi
LIST OF TABLES	viii
DEFINATION OF TERMS	ix
ACRONYMES	x
CHAPTER 1: INTRODUCTION	1
1.1 Background of the Study	1
1.2 The Global Cement Industry	4
1.3 Statement of the Problem	6
1.4 Objectives of the Study	7
1.5 Research Questions.....	8
1.6 Significance of the Study	8
1.7 Scope of the Study	9
1.8 Organisation of the study	9
 CHAPTER 2: LITERATURE REVIEW	 10
2.1 Introduction	10
2.2 Theoretical Review	10
2.2.0 Capital Structure Theories.....	10
2.2.1 The Traditional Approach.....	10
2.2.2Modigliani-Miller Approach.....	10
2.2.3Static Trade off Theory.....	11
2.2.4Pecking Order Theory.....	12
2.2.5Signalling Theory.....	13
2.3 Financial Performance	15
2.3.1Profitability.....	15
2.3.2 Net Profit Margin.....	15
2.3.3 Return on Investment and Return on Equity.....	16
2.4 Empirical Review	16
2.5 Research Gaps	18
2.6 Conceptual Framework	19
 CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY.....	 20
3.1 Introduction	20
3.2 Research Design	20
3.3 Empirical Model.....	20
3.3.1 Operationalization and Measurement of Variables	22
3.4 Target Population.....	23
3.5 Data Collection Methods and Procedures	23
3.6 Data Analysis	23
CHAPTER 4: RESEARCH FINDINGS.....	25

4.1 Introduction	25
4.2 Descriptive Statistics	25
4.3 Regression Analysis	26
4.3.1 Debt Equity Ratio	26
4.3.2 Fixed Charge to Total Capital Ratio.....	27
CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	30
5.1 Introduction.....	30
5.2 Summary of Findings.....	30
5.3 Answers to research questions.....	31
5.4 Conclusions.....	32
5.5 Scope of future research.....	33
REFERENCES	25
APPENDICIX i	27
APPENDICIX ii	28
APPENDICIX iii	29

LIST OF TABLES

Table 1: Predictors of Profitability.....	26
Table 2: Predictors of Profitability.....	27
Table 3 coefficient for predictor of performance	28

OPERATIONAL DEFINATION OF TERMS

CAPITAL STRUCTURE

The mix of debt and equity used by a firm in financing its assets. It is the combination of equity shares, preference shares, reserves and long-term debts.

FINANCIAL PERFORMANCE

measure of how well a firm can use its' assets from its' primary business to generate revenues. It is measured in terms of profitability.

PROFITABILITY

Profitability measures include profitability in relation to sales and profitability in relation to investment.

ACRONYMS AND ABBREVIATIONS

EBIT	Earnings before Interest and Taxes
EBT	Earnings before Tax
NSE	Nairobi Securities Exchange
PAT	Profit after Tax
ROCE	Return on Capital Employed
ROE	Return on Equity

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This study focused on Capital Structure and Profitability of listed cement firms in the Construction and Allied Sector of the Nairobi Securities Exchange (NSE). Capital structure is one of the most puzzling issues in corporate finance literature. The concept is generally described as the combination of debt and equity that make the total capital of firms. The proportion of debt to equity is a strategic choice of corporate managers.

Capital structure is one of the most complex areas of financial decision making due to its interrelationship with other financial decisions variables. Capital structure is the composition of debt and equity capital that shows how a firm finances its assets. The firm's assets are often owned by multiple claimants, liabilities (leverage) and equity. Capital structure is the relative proportion of the various kinds of securities a company has used. (Bierman, 2006). Capital structure is the total sum of outstanding long-term securities, both equity and debt. (Copeland, 1986) defined it as the permanent financing of the firm represented by long-term debt plus preferred stock and net worth. Though there are different views about the total nature of capital structure it is obviously true from the fact that everybody has agreed about the common items, that is, total of equity and long-term debt which represent the permanent source of financing of a company. Therefore, capital structure may be defined as the permanent source of capital in the form of long-term debt, preference

shares, ordinary shares, reserves and surplus.

Capital structure decision is the vital one since the profitability of an enterprise is directly affected by such decision. Hence, proper care and attention need to be given while determining capital structure decision. (Van Horne J, 2002). In the statement of financial position of an enterprise, the overall position of the enterprise regarding all kinds of assets, liabilities are shown. Capital is a vital part of that statement. The term capital structure of an enterprise is actually a combination of equity shares, preference shares and long-term debts. A cautious attention has to be paid in determining what a firm's optimum capital structure is. With unplanned capital structure, companies may fail to economize the use of their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions.

Financial performance is a subjective measure of how well a firm can use its' assets from its' primary business to generate revenues. (Erasmus, 2008) noted that financial performance measures like profitability and liquidity among others provided a valuable tool to stakeholders to evaluate the past financial performance and the current position of a firm. An ultimate goal of a firm is the maximization of wealth or value of that firm (Miller & Modigliani, 1958, 1963; Miller, 1977). Hereafter referred to as (MM 1958, 1959 1963 and 1977). The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout the irrelevance theory. In the seminal article, presented by (MM's 1958)

irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in (MM's 1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure.

Corporate performance can be measured by variables which involve profitability, growth or, even, customers' satisfaction. These measures are related among each other. Financial measurement is one of the tools which indicate the financial strengths, weaknesses, opportunities and threats. Those measurements are return on investment (ROI), residual income (RI), earning per share (EPS), dividend yield, price earnings ratio, growth in sales, market capitalization and so on (Barbosa, 2005)

Economic development is largely influenced by corporate sector growth. The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress (Abor, 2008). If firms in developing countries are to ever play a predominant role in economic development, it's imperative for the firms' to be able to finance their activities and grow over time. Examination of financing or capital structure decisions is critical in understanding how firms in developing countries finance their operations. Capital structure decisions involve a wide range of policy issues both at the country level as well as the individual firm's level.

The relationship between capital structure and profitability is one that received

considerable attention in the finance literature (Abor, 2008). The study regarding the effects of capital structure on profitability will help us to know the potential problems in performance and capital structure.

The modern industrial firm must conduct its business in a highly complex and competitive business environment. Therefore, these types of research findings will be benefited in selecting the capital structure to achieve the optimum level of firm's profitability. This study will use statistical analysis in trying to seek if there is any relationship between capital structure and profitability of the listed cement manufacturing firms in the Construction and Allied Sector of the NSE.

1.2 The Global Cement Industry

Cement is a basic ingredient for the construction industry. Concrete is second only to water as the most consumed substance on earth, with nearly one ton of the material used annually for each person on the planet. Cement is the critical ingredient in concrete, locking together the sand and gravel constituents in an inert matrix; it is the glue which holds together much of modern society's infrastructure.

Cement is a global commodity, manufactured at thousands of local plants. Because of its weight, cement supply via land transportation is expensive, and generally limited to an area within 300 km of any one plant site. The industry is consolidating globally, but large, international firms account for only 30% of the worldwide market. In many developed countries, market growth is slow or nil whereas in developing markets, growth rates are more rapid. China is the fastest growing market today.

Global demand for cement is forecast to rise by 5.3 percent to 5.3 billion metric tons in 2015 valued at \$335 billion. Gains will be fuelled by rising investment in

infrastructure in developing countries of the world, driven by economic growth and increasing per capital income. China which accounts for 5 percent of the world cement demand is forecast to see the product sale climb to 4.9 percent per year through 2015. The USA will post the strongest demand gains averaging 9.4 percent annually through 2015 of any major cement market. Increases will be stimulated by an expected robust recovery in residential construction sector.

Kenya's cement consumption rose to 3.4 million tonnes in 2011 compared to 3.1 million tonnes the year before. Kenya is the largest market for cement in East Africa, with annual production representing 53 % of the region's total capacity, followed by Tanzania and Uganda whose production represent 30 % and 15 % respectively. Public sector infrastructure projects and the rapidly growing middle class in Kenya will be the main drivers of cement consumption going forward. Competition in the market has intensified with new entrants — National Cement and Savannah Cement — and expanded capacities by existing producers, which is expected to keep prices of cement relatively low since all producers compete largely on price differentiation. Domestic market share in 2011 stood at 40.5% for Bamburi Cement compared to 24% for East Africa Portland Cement, 15.5% for Athi River Mining, 13% for Mombasa Cement and 7 % for National Cement. Savannah Cement is the most recent entrant and has recently commenced operations. Only the first three firms are listed in the Nairobi Securities Exchange and therefore this study is restricted to the three firms.

Cement production and consumption in Kenya has always been used as one of the leading macro economic indicators. This among others justifies the study.

1.3 Statement of the Problem

Most studies show a negative relationship between profitability and capital structure.

Within this framework, (Titman, 1988) contend that firms with high profit levels, *ceteris paribus*, would maintain relatively lower debt levels since they can realize such funds from internal sources. Furthermore, (Kester, 1986) found a significantly negative relation between profitability and debt/asset ratios. (Rajan, 1995) also confirmed a significantly negative correlation between profitability and leverage in their work. Despite the above empirical works, some authors are of a different opinion. These authors observed a positive relationship between profitability and debt levels in their studies. For example, (Taub, 1975) in a regression analysis of four profitability metrics against debt ratio found significantly positive association between debt and profitability. (Abor, 2008) also found a significantly positive relationship between total debt and profitability.

Most of these studies, however, were carried out in developed countries and very little is known about the capital structure of firms in developing Countries. We are not sure whether conclusions from research carried out in developed economies are valid for developing countries too; we are not sure whether conclusions from researches on capital structure are portable across countries in general. The conclusions from these studies were that there were some common features in the capital structures and profitability of firms in different countries but that further research was necessary to identify the determinants of profitability in particular institutional settings or countries.

Kenya is a developing country whose cement sector is entering a phase of major change.

as producers expand capacity to cope with the country's critical infrastructure and housing needs. (CBK report 2009). Domestic cement production volumes have grown at 25% over the last four years. Given the strong correlation between GDP growth and cement consumption, cement production growth has also been helped by Kenya's strong economic performance in recent years. (CBK report 2009). The importance of this industry to the economy as whole has motivated this analysis on whether capital structure plays a role in the financial performance in this Kenya's noble sector. Furthermore cement production and consumption has always been used as one of the leading macro economic indicators. The period 2006 – 2012 will be used to coincide with the period the country experienced huge upsurge in infrastructural development. Most of the previous studies were not specific to any industry and this study hopes to offer more insight on the effect of capital structure of financial performance of Kenya's listed cement manufacturing firms, hence the main objective.

1.4 Objectives of the Study

1.4.1 General Objective

To investigate the relationship between capital structure and financial performance of listed cement manufacturing companies in Kenya.

1.4.2 Secondary Objectives;

The specific objectives were to determine;

- i.) The relationship between debt to equity ratio and Net profit margin.
- ii.) The relationship between debt to equity ratio and Return on Capital Employed.
- iii.) The relationship between debt to equity ratio and Return on Equity.

- iv.) The relationship between debt to total funds and Net profit margin.
- v.) The relationship between debt to total funds and Return on Capital Employed.
- vi.) The relationship between debt to total funds and Return on Equity

1.5 Research Questions

The following were the research questions:-

- i.) Is there a relationship between debt to equity ratio and Net profit margin?
- ii.) Is there a relationship between debt to equity ratio and Return on Capital Employed?
- iii.) Is there a relationship between debt to equity ratio and Return on Equity?
- iv.) Is there a relationship between debt to total funds and Net profit margin?
- v.) Is there a relationship between debt to total funds and Return on Capital Employed?
- vi.) Is there a relationship between debt to total funds and Return on Equity?

1.6 Significance of the study

The researcher hopes that the findings from the study shall be useful to;

Investors will find the results of this study very useful source of information as their investment decisions can be based on the analysis of this study. Investors could be providers of equity finance or debt finance.

The management of various companies, both listed and unlisted will find the results of this study useful in understanding the effects of capital structure on profitability.

Management of companies will benefit and they will be able to make quality financial decisions based on the understanding of how capital structure influences a firm's financial performance. The findings of this study will be useful to academicians as very little literature is available on capital structure in developing countries. Moreover, where the literature is available, capital structure has never been taken as the independent variable. Researchers will also find this study useful as the basis of further research on the same field.

1.7 Scope of the Study

This study covered the three Kenyan cement manufacturing companies listed on the Nairobi Securities Exchange. The study investigated the effect of capital structure mix in determining financial performance of listed cement companies in Kenya.

1.8 Organization of the study

This study is structured as follows: the foregoing chapter one provides the research background, research objectives, significance, and scope of the study. Chapter two presents literature review on the capital structure and financial performance and a conceptual framework. Chapter three deals with the methodology to be employed in this study. Research findings are in Chapter four. Chapter five contains the summary, conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examines literature relevant to the study. It incorporates the theoretical review, the empirical review and thereafter, conceptual framework. The rationale of the study was to ascertain the role capital structure played in determining financial performance.

2.2 Theoretical Review

2.2.0 Capital Structure Theories

Capital structure puts into perspective the way in which a firm finances its operations (Brigham, 2004), this can either be through debt or equity capital or a combination of both. A number of theories have been advanced to explain capital structure. Some of the notable theories are included below.

2.2.1 The Traditional Approach

The traditional view point believes that a judicious use of debt increases the value of the firm and reduces the cost of capital (M ahmud,et al, 2009) He is of the opinion that there is a definite impact on the firm's total market value when leverage is charted. According to the traditional approach, until gearing reaches an optimal point, the financial risk of debt is more than the benefit offered by the introduction of that debt

2.2.2 Modigliani-Miller Approach

(MM, 1958) who in a series of famous articles provided a rigorous justification for the Net Operating income method. MM analysis implies that firms are indifferent concerning

method of financing if there are no corporate taxes. They however argue that firms should be financed with virtually all debt if a corporate tax exists. However the MM model assumes away many factors that can imply that a particular blend of debt is but for a given firm (Lawrence and Charles, 1977)

2.2.3 Static Trade off Theory

(Myers and Majluf, 1984) divides the contemporary thinking on capital structure into two theoretical currents. The first one is the Static Tradeoff Theory (STT), which explains that a firm follows a target debt-equity ratio and then behaves accordingly. The benefits and costs associated with the debt option sets this target ratio. These include taxes, cost of financial distress and agency cost. As the interest payments are a tax-deductible expense, they decrease the tax liability thus providing cash savings. Therefore firms will use a higher level of debt to take the advantage of tax benefits if the tax rates are higher. If the firms incur losses, this tax benefit will fade away. So if the operating earnings are enough to meet the interest expense then firms will get the benefit of tax deductibility of interest expenses.

The chance of default increases as the level of debt increases. So there exists an optimal level of debt. If the firm goes beyond this optimal point, it is more likely that the firm will default on the repayment of the loan; as a consequence the control of the firm will be shifted from shareholders to bondholders who will try to recover their investments by liquidating the firm. Because of this threat a firm may face two types of bankruptcy costs. These are direct and indirect costs. Direct costs include the administrative costs of the bankruptcy process. If the firm is large in size, these costs constitute only a small

percentage for the firm. However, for a small firm, these fixed costs constitute a higher percentage and are considered an active variable in deciding the level of debt. The indirect costs arise because of change in investment policies of the firm in case the firm foresees possible financial distress. To avoid possible bankruptcy, the firm will cut down expenditures on research and development, training and education of employees, advertisements and so on. As a result, the customer begins to doubt the firm's ability to maintain the same level of quality in goods and services. This doubt appears in the form of a drop in sales and eventually results in a drop of the market share price of the firm. This implies that the potential benefits from leverage are shadowed by the potential costs of bankruptcy (Correia et al, 2000).

2.2.4 Pecking Order Theory

The second theory, the Pecking Order Theory (POT) put forward by (Myers, 1984) and (Myers and Majluf, 1984), states that firms follow a hierarchy of financial decisions when establishing its capital structure. Initially, firms prefer to finance their projects through internal financing also referred to as retained earnings. In case they need external financing, first they apply for a bank loan then for public debt. As a last resort, the firm will issue equity to finance its project. Thus according to POT the profitable firms are less likely to incur debt for new projects because they have the available internal funds for this purpose. The reason firms are reluctant to issue equity is because of asymmetric information between the management and the new stockholders.

(Myers and Majluf, 1984) pointed out under pricing would be the result of less information held by potential investors vis-à-vis management with respect to the expected cash flows from the firm's assets, both current and future. Considering these

information asymmetry investors would infer that the management would issue stock only when it is overpriced. Thus the newly issued equity might be sold at a discount. This would be regarded as a wealth transfer from existing investors to the new ones. This problem could be avoided if the firms use internally generated resources, such as retained earnings.

Moreover, the Pecking Order Theory has a more important effect on capital structures for firms that are managed in the interests of equity holders, rather than the combined interests of debt and equity holders. However, when financial distress costs are high, equity-maximizing and value-maximizing firms make similar capital structure choices (Titman and Tsyplakov, 2007).

(Myers, 1977) suggests that firms acting to maximize the interest of equity holders will be reluctant to issue equity because of the wealth transfer to debt holders, (Myers and Majluf, 1984) suggest that firms are reluctant to issue equity because of an adverse selection problem, and (Almazan et al, 2003) suggests that firms may be reluctant to issue equity because of the costs associated with being scrutinized. Finally, issuing equity involves substantial transaction costs. Profitability is a strong point of dissent between the two theories. For the STT, the higher the profitability of the firm, the more reasons it will have to issue debt, reducing its tax burden. On the other hand, the POT presupposes that larger earnings lead to the increase of the main source firms choose to cover their financial deficit: retained earnings. Therefore, the STT expects a positive relationship between profitability and leverage, whereas the POT expects exactly the opposite.

2.2.5 Signalling Theory

This approach, originally developed by (Ross, 1977), explains that debt is considered as a

way to highlight investors' trust in the company, that is if a company issues the debt it provides a signal to the markets that the firm is expecting positive cash flows in the future, as the principal and interest payments on debt are a fixed contractual obligation which a firm has to pay out of its cash flows. Thus the higher level of debt shows the manager's confidence in future cash flows. Another impact of the signalling factor as we have already discussed it in the Pecking Order Theory is the problem of the under pricing of equity. If a firm issues equity instead of debt for financing its new projects, investors will interpret the signal negatively: since managers have superior information about the firm than investors, they might issue equity when it is overpriced.

Among other explanations about a firm's behaviour in choosing its capital structure is the agency theory. (Jensen and Meckling, 1976) identify the possible conflict between shareholders and a manager's interests because the manager's share is less than 100% in the firm. Furthermore, acting as an agent to shareholders, the manager tries to appropriate wealth from bondholders to shareholders by incurring more debt and investing in risky projects.

This is consistent with the work of (Myers, 1977) who argues that, due to information asymmetries, companies with high gearing would have a tendency to pass up positive NPV (net present value) investment opportunities (under investment problems). Myers therefore argues that companies with large amounts of investment opportunities (also known as growth options) would tend to have low gearing ratios.

A manager having a less than 100% stake in the business may try to use these free cash flows sub-optimally or use it to their own advantage rather than use it to increase the

value of the firm. (Lopez de Silanes, et al 2000) suggests that this problem can be somehow controlled by increasing the stake of the manager in the business or by increasing debt in the capital structure, thereby reducing the amount of free cash available to managers to engage in their own pursuits (Jensen and Meckling, 1976); (Stulz, 1990). Here the reduction in the cash flow because of debt financing is considered to be a benefit. (Stutz, 1990) suggests that the agency problem can be solved to some extent if the management stake is increased or the proportion of debt in the capital structure is increased.

2.3 Financial Performance

(Erasmus, 2008) noted that financial performance measures like profitability and liquidity among others provided a valuable tool to stakeholders to evaluate the past financial performance and the current position of a firm

2.3.1 Profitability

The concept of profitability is based on the comparison of the cash outflows required for implementing a strategic alternative with the cash inflows that this alternative is expected to generate (Michael, 1992). Profitability measures as determined by (Pandey, 2006) included profitability in relation to sales and profitability in relation to investment.

The profitability in relation to sales is measured by;

2.3.2 Net Profit Margin

This can be obtained when operating expenses, interest and taxes are subtracted from the gross profit. The ratio obtained therefore establishes a relationship between net profits and sales and also indicates management's efficiency in manufacturing, administration and selling of company products. The general rule is for the ratio to turn every cash

invested in the business into profits.

2.3.3 Return on Investment and Return on Equity

The return on investment and return on equity are measures of profitability in relation to investment. The return on investment is obtained by dividing the profits after tax by the investment and the return on equity by dividing the profit after tax by the net worth of the business. The return on equity indicates how well management is utilizing the resources of the shareholders and that the ratio of net profits to owners' equity reflects the extent to which management has achieved proper utilization of shareholders resources.

2.4 Empirical Review

Relationship between Capital Structure and Financial Performance

Hutchinson, (1995) in his scholarly works argued that, financial leverage had a positive effect on the firm's return on equity provided that earnings' power of the firm's assets exceeds the average interest cost of debt to the firm. (Taub, 1975) also found significantly positive relationship between debt ratio and measures of profitability. (Rajan, 1994) also identified positive association between debt and profitability but for industries. In their study of leveraged buyouts, (Roden, 1995) established a significantly positive relation between profitability and total debt as a percentage of the total buyout-financing package. However, some studies have shown that debt has a negative effect on firm profitability. (Fama and French 1998), for instance argue that the use of excessive debt creates agency problems among shareholders and creditors and that could result in negative relationship between leverage and profitability. (Majumdar and Chhibber 1999) found in their Indian

study that leverage has a negative effect on performance. Gleason et al., (2000) support a negative impact of leverage on the profitability of the firm. In a Polish study, (Hammes (1998) also found a negative relationship between debt and firm's profitability. In another study, (Hammes 2003) examined the relation between capital structure and performance by comparing Polish and Hungarian firms to a large sample of firms in industrialized countries. He used panel data analysis to investigate the relation between total debt and performance as well as between different sources of debt namely, bank loans, and trade credits and firms' performance measured by profitability. His results show a significant and negative effect for most countries. He found that the type of debt, bank loans or trade credit is not of major importance, what matters is debt in general. (Mesquita and Lara 2003), in their study found that the relationship between rates of return and debt indicates a negative relationship for long-term financing. They however, found a positive relationship for short-term financing and equity. (Abor, 2007) in his scholarly works on debt policy and performance of Medium Sized Enterprises found the effect of short-term debt to be significantly and negatively associated with gross profit margin for both Ghana and South African firms. This indicated that increasing the amount of short-term debt would result in a decrease in the profitability of the firms.

(Kangila, 2007) sought to find which variables affected capital structure decisions. He concluded that assets tangibility, profitability, business risk, growth size, and non-debt tax shield are significant variables in the capital structure of the company.

In his study to investigate the determinants of capital structure of commercial banks in Kenya, (Opuodho, 2005) concluded that profitability was the predominant determinant of capital structure. (Rajan, 1994) found a significantly positive association between

profitability and debt ratios in a study designed to investigate the relationship. They argued that profitable firms are more attractive to financial institutions as lending prospects. The reason is that, those firms are expected to have higher tax shields and low bankruptcy costs. Furthermore, (Abor, 2008) has reported a significantly positive relationship between the ratios of short term debt to total assets and profitability but a negative association between the ratio of long term debt to total assets and profitability. (Dimitris, M. and Maria, P. 2008) investigated the relationship between capital structure, ownership structure and firm performance across different industries using a sample of French manufacturing firms. They found that there was a negative relationship between past profitability and leverage.

2.5 Research Gaps

Volumes upon volumes of theoretical and empirical research have focused on the area of capital structure. However, most of the research work has been carried out in developed economies and very little is known about the capital structure of firms in developing economies. More over Capital structure has almost always been taken as the dependant variable. With this very little research, we are not sure whether conclusions from theoretical and empirical research carried out in developed economies are valid for developing countries too; or whether conclusions from researches are portable across countries in general.

(Booth, et al, 2001) including some data from emerging markets. The conclusions from their study was that were some common features in the capital structures of firms in different countries but that further research was necessary in particular institutional

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The chapter presents the research design and methodology that was used to carry out research. It represents the research design, the population, sample size and sampling procedure and analysis.

3.2 Research Design

Research design refers to the process the investigator follows from inception to completion of the study (Mugenda, 2008). This study used correlation design approach to assess the relationship between capital structure and profitability. Correlation approach is best since it is based on the premise that if a statistically significant relationship exists between two variables, then it is possible to predict one variable using the information available on another variable.

3.3 Empirical model

Empirical models are those that are based entirely on data. These models are not derived from assumptions concerning the relationship between variables and they are not based on physical principles. Regression analysis will be carried out to test the impact of capital structure on profitability. Here capital structure is the independent variable and profitability is the dependent variable. From these independent and dependent variables, the following relationships are formulated. Profitability of the cement firms is dependent upon the capital structure. It is represented as follows;

$$P = f (CS)$$

Which shows profitability is the function of capital structure.

Where; P = Profit

CS = Capital Structure

Here, profitability is measured with the help of three ratios namely Net profit margin, Return on Capital Employed and Return on Equity. Capital structure is measured through Debt/Equity ratio and Fixed charge to total capital ratio. Therefore, the regression model will be formulated in the following manner;

$$NP = \hat{a}_0 + \hat{a}_1x_1 + \mu \dots\dots\dots \text{Model 1}$$

$$NP = \hat{a}_0 + \hat{a}_1x_2 + \mu \dots\dots\dots$$

$$ROCE = \hat{a}_0 + \hat{a}_1x_1 + \mu \dots\dots\dots \text{Model 2}$$

$$ROCE = \hat{a}_0 + \hat{a}_1x_2 + \mu \dots\dots\dots$$

$$ROE = \hat{a}_0 + \hat{a}_1x_1 + \mu \dots\dots\dots \text{Model 3}$$

$$ROE = \hat{a}_0 + \hat{a}_1x_2 + \mu \dots\dots\dots$$

Where; X₁ = Debt/Equity ratio

X₂ = Fixed Charge to total capital ratio

NP = Net profit margin

\hat{a}_0 = Constant

ROCE = Return on Capital Employed

ROE = Return on Equity

μ = Error Term

3.3.1 Operationalization and Measurement of Variables

Capital Structure

Capital structure is measured in terms of debt to equity ratio, which is measured as:

$$\text{Debt - Equity Ratio} = \frac{\text{Fixed Charge Capital}}{\text{Equity}}$$

And Fixed Charge Capital to Total Capital ratio measured as;

$$\text{Fixed Charge to total capital ratio} = \frac{\text{Fixed Charge Capital}}{\text{Total Capital Employed}}$$

Financial Performance

Though financial performance can be measured in different aspects including liquidity and profitability ratios, in this study it will be looked at in terms of profitability.

Profitability will be measured as a margin in relation to sales and also in relation to investment.

In relation to sales, Net profit margin will be obtained by dividing profit after tax by sales denoted by;

$$\text{Net Profit Margin} = \frac{\text{Net Profit (earnings after tax and interest)}}{\text{Sales}}$$

Profitability in relation to investment will be measured by Return on Capital Employed and Return on Equity. Both measures are denoted by formulas indicated below:

$$\text{Return on Capital Employed} = \frac{\text{Profit before interest and Taxes}}{\text{Capital Employed}}$$

$$\text{Return on Equity} = \frac{\text{Net profit}}{\text{Equity}}$$

3.4 TARGET POPULATION

A population is the total collection of elements about which the researcher wishes to make some inferences from. The target population was all the Kenya's cement manufacturing firms listed in the Construction and Allied Sector of the Nairobi Securities Exchange. These are:

- Athi River Mining Company Limited
- Bamburi Cement limited
- East Africa Portland Cement Limited

3.5 Data Collection Methods and Procedures

This study used secondary data for the analysis. Secondary data is data that have been previously collected for some other project rather than the one at hand but found useful by the researcher. The financial statements which are made up of income statements and statements of financial position of the three listed Kenyan cement manufacturing firms will be the main sources of data for this study. These will be obtained from the annual reports of respective firms. Specifically, the financial statements of the cement firms in the study will be collected for the period: 2006-2011 as this will represent the most recent data.

3.6 Data Analysis

The quantitative research approach is employed to find out the findings of the research study. Since numerical and secondary data is used, quantitative approach is considered to

be a suitable approach for the study. According to (Leavy, 2004), statistical analyses are used to describe an account for the observed variability in the data. This involves the process of analyzing the data that has been collected. Thus the purpose of statistics is to summarize and answer questions that were obtained in the research. Descriptive statistics will be used to describe and summarize the behaviour of the variables in a study. They refer to the ways in which a large number of observations are reduced to interpretable numbers such as averages and percentages. Inferential statistics are used to draw conclusions about the reliability and generalizability of the findings (Leary, 2004,). In order to test the research model; the inferential tests will use Regression Analysis.

CHAPTER FOUR

RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter outlines the findings of the study derived from secondary data the relationship between variables as ascertained by regression analysis. The findings were interpreted in relation to research objectives and in consistence with the literature reviewed in chapter two. The companies investigated were Athi River Mining Company Limited, Bamburi Cement Limited and East Africa Portland Cement Limited as presented in table 1 (see appendix 1).

4.2 Descriptive statistics

Table 1 below provides the descriptive summary statistics for the variables tested.

Table 1: Descriptive summary statistics

	N	Range	Minimum	Maximum	Mean	SD
Net profit	3	20.96	-3.6	17.36	8.8789	5.90755
Return on Capital employed	3	16.11	9.32	25.42	14.8218	5.16101
Return on equity	3	62.04	-42.55	19.48	9.5116	18.51050
Debt Equity ratio	3	1353.56	182.25	1535.88	825.1531	801.59839
Debt to total funds ratio	3	17.91	77.48	95.39	88.6591	6.84658

Source: Survey data 2013

The descriptive statistics show that over the period under study, the profitability ratios measured by net profit, return on capital employed and return on equity averaged 8.9%,

14.8% and 9.5% respectively. The debt equity ratio stood at 825.2% and debt to total funds averaged 88.7%. This indicates that approximately 89% of total assets in the cement sector in Kenya are represented by debt, confirming that cement manufacturing companies are highly geared institutions. The maximum and minimum values for debt equity ratio indicate that the debt equity composition varies substantially among listed cement manufacturing companies in Kenya.

4.3 Regression Analysis

A multivariate regression analysis was used to investigate the extent to which explanatory variables captured in the model contribute to the explained variance in the dependent variable. The model takes NP, ROCE and ROE as proxies of financial performance. Explanatory variables include Debt/Equity ratio and fixed charge to total capital ratio.

4.3.1 Debt Equity Ratio

Table 2: predictors of profitability

Model	Dependent Variable	R	R ²	Adjusted R Square	Std. Error of the Estimate
1	NP	0.370 ^a	0.137	0.029	5.82134
2	ROCE	0.388 ^a	0.150	0.044	5.04167
3	ROE	0.328 ^a	0.107	-0.004	18.54840

a. Predictors: (Constant), DER

The R² values of 0.137, 0.150 and 0.107 which are in the above mentioned table denotes that 13.7%, 15% and 10.7% of the observed variability in NP, ROCE and ROE is explained by the observed variability in the independent variable Debt/Equity ratio.

These R² values indicate that there may be number of variables which can have an impact on profitability other than the Debt/Equity ratio. Hence this area indicated a scope for future research.

4.3.2 Fixed Charge to total capital ratio

Table 3: predictors of profitability

Model	Dependent Variable	R	R ²	Adjusted R Square	Std. Error of the Estimate
1	NP	0.711 ^a	0.505	0.443	4.40927
2	ROCE	0.561 ^a	0.314	0.229	4.53314
3	ROE	0.246 ^a	0.061	-0.057	19.02977

a. Predictors: (Constant), Fixed charge to total capital ratio

The above mentioned table show that fixed charge to total capital ratio is having an impact of 50.5% and 31.4% on net profit margin and return on capital employed. This indicates that fixed charge to total capital ratio is a major determining factor of net profit and return on capital employed of listed cement manufacturing companies in Kenya. Only 6.1% of the variations in return on equity are explained by fixed charge to total capital ratio. The remaining 93.9% is influenced by factors other than fixed charge to total capital ratio.

Table 4: coefficient for predictor of performance

Model	Unstandardized Coefficients Beta	Unstandardized Coefficients Std Error	Standardized Coefficients Beta	t- value	Sig
1 NP					
Constant	12.474	3.685		3.385	0.010
DE	-0.004	0.004	-0.370	-1.126	0.293

Constant	63.232	19.083		3.313	0.011
D/TF	-0.613	0.215	-0.711	-2.856	0.021
2 ROCE					
Constant	18.113	3.194		5.670	0/000
DE	-0.004	0.003	-0.388	-1.189	0.268
Constant	52.286	19.620	-0.561	2.665	0.029
D/TF	-0423	0.221		-1.915	0.092
3 ROE					
Constant	-0.471	11.741		-0.040	0.969
DE	0.012	0.012	0.328	0.981	0.355
Constant	64.490	82.362		0.832	0.430
D/TF	-0.665	0.926	-0.246	-0.718	0.493

$$NP = 12.474 - 0.370x_1 \dots\dots\dots$$

Model 1

$$NP = 63.232 - 0.711x_2 \dots\dots\dots$$

$$ROCE = 18.113 - 0.388x_1 \dots\dots\dots$$

Model 2

$$ROCE = 52.286 - 0.561x_2 \dots\dots\dots$$

$$ROE = -0.471 + 0.328x_1 \dots\dots\dots$$

Model 3

$$ROE = 68.490 - 0.246x_2 \dots\dots\dots$$

As shown in the above models t – values were found to be significant in model 1 only for the independent variables of debt to total funds. It is also clear that negative association was found between all the independent and dependent variables except the association between Debt Equity ratio and Return on Equity.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, as regard to objectives of the study, also the conclusion is drawn based on the findings. Recommendations and area for further research is highlighted within the chapter.

This study examined the Effect of capital Structure on financial performance of listed cement manufacturing companies in Kenya. The study covered 3 listed cement manufacturing companies over the period 2006 to 2011 and the major findings of the study are summarized below.

5.2 Summary of Findings

The findings of this study were summarized around specific objectives of the study which were to examine the relationship between debt to equity ratio and debt to total funds ratio on financial performance of the Kenya's listed cement manufacturing companies as measured by Net profit margin, Return on Equity and Return on capital employed.

The analysis involved the use of R and R – squared values to determine the strength of the relationship between independent and the indicators of financial performance. It was intended to investigate the extent to which the identified explanatory variables influence the dependent variable.

Total debt was found to be significant in determining net profit and return on capital employed in the cement manufacturing industry in Kenya. The mean values of debt/equity ratio and debt to total funds were 825.15% and 88.68% respectively. The mean value of debt/equity ratio suggests that debt is 8.25 times higher than equity capital. The debt/equity ratio is normally safe up to 2. It shows the fact that listed cement manufacturing companies in Kenya depends more on debt (Long – Term loans) rather than equity capital. The mean value of debt to total funds ratio indicates 89% of the total capital of listed cement companies in Kenya is made up of debt. Long term debt and total debt were found to be insignificant in determining return on equity in Cement manufacturing industry.

The R^2 values were found to be significant for the impact of debt to total funds on net profit. But no significant impact was found on the remaining dependent variables. Total debts impact on net profit was found to be 50.5%. The effect of total debt on return on equity as the least ($R^2 = 6\%$). This reveals that the remaining 94% is influenced by other factors other than total debt. This means that other factors are probably a better predictor of return on equity than total debt.

5.3 Answers to research questions

5.3.1 Is there a relationship between debt to equity ratio and net profit margin?

From the study it can be observed that 13.7% of the observed variability in Net-profit is explained by the variability in the Independent variable Debt equity ratio. The

relationship though is not strong and there may be a number of variables which can have impact on profitability other than debt equity ratio.

5.3.2 Is there a relationship between debt to equity ratio and return on capital employed?

To answer this research question, statistics prove that there is a slight positive relationship between the two variables.

5.3.3 Is there a relationship between debt to equity ratio and return on equity?

From the data collected from financial statements it is clear that a weak positive relationship exists between the two variables.

5.3.4 Is there a relationship between debt to total funds and net profit margin?

The study shows that there is a relationship between debt to total funds and net profit margin.

5.3.5 Is there a relationship between debt to total funds and return on capital employed?

The study shows that there is a relationship between debt to total funds and return on capital employed.

5.3.6 Is there a relationship between debt to total funds and return on equity?

From the findings of the study there is a negligible relationship between debt to total funds and return on equity.

5.4 Conclusions

The cement manufacturing sector generally plays a crucial role in the economic development of every country. One critical decision cement manufacturing companies face is the debt – equity. Among others, this choice is necessary for the profit

determination of the firms. As a result cement manufacturing firms that make their financing decisions prudently would remain competitive in the industry and thereby make higher profits. This will work though if the firms are able to appreciate how the debt policy influences their profitability.

5.5 Scope of future research

The current research is restricted only to the listed cement manufacturing companies in the manufacturing and allied sector of the Kenya's Nairobi Securities Exchange. With over 64 companies listed in the NSE across 11 sectors, additional investigation is required to examine the firms in different sectors. Further it would be desirable to extend the study and examine capital structure and profitability of non listed cement manufacturing companies.

This study has only utilized standard forms of profitability measures. A more precise measure of profit can be obtained with the help of Economic Value added concept.

Furthermore this research was mainly conducted based on secondary data, other data collection models have not been considered.

REFERENCES

- Abor, J. (2008). *Determinants of the Capital Structure of Ghanaian firms*. African Economic Research Consortium. Retrieved from <http://www.aercafrica.org/documents/RP176.pdf>
- Barbosa, N., & Louri, H. (2005). Corporate performance: does ownership matter? A comparison of foreign-and domestic-owned firms in Greece and Portugal. *Review of Industrial Organization*, 27(1), 73–102.
- Bierman, H., & Smidt, S. (2006). The capital budgeting decision economic analysis of investment projects (POD). *Recherche*, 67, 02.
- Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance*, 56(1), 87–130.
- Copeland, T. E. (1986). *Managerial Finance-8/E*.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305–360.
- Lawrence, D. S., & Charles, W. H. (1977). *Introduction to financial management*. New York: McGraw Hill Book Company.
- Lopez de Silanes, F., Vishny, R., & Shleifer, A. (2000). Agency problems and dividend policies around the world. *Journal of finance*, 60(1), 1–33.
- Mahmud, M., Herani, G. M., Rajar, A. W., & Farooqi, W. (2009). Economic factors influencing corporate capital structure in three Asian countries: Evidence from Japan, Malaysia and Pakistan. Retrieved from <http://mpira.uni-muenchen.de/15003/>
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, 48(3), 261–297.
- Mugenda, A. G. (2008). *Social science research: Theory and principles*. Nairobi: Applied Research and Training Services Press.
- 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(2), 187–221.
- Rajan, R. G., & Zingales, L. (1994). *What do we know about capital structure? Some evidence from international data*. National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w4875>
- Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. *The Bell Journal of Economics*, 23–40.
- Stulz, R. M. (1990). Managerial discretion and optimal financing policies. *Journal of financial Economics*, 26(1), 3–27.
- Titman, S., & Tsyplakov, S. (2007). A Dynamic Model of Optimal Capital Structure. *Review of Finance*, 11(3), 401–451. doi:10.1093/rof/rfm017
- Van Horne James, C. (2002). *Financial Management & Policy, 12/E*. Pearson Education India.

APPENDICES

APPENDIX I

CEMENT COMPANIES LISTED IN THE CONSTRUCTION AND ALLED SECTOR OF NAIROBI SECURITIES EXCHANGE

Athi River Mining Company Limited

Bamburi Cement Limited

East Africa Portland Cement Limited

Source: www.nse.co.ke

APPENDIX II BUDGET

	Kshs
Transport	5,000
Typing and Printing	10,000
Research Materials	10,000
Photocopying Services	5,000
Stationary	4,000
Miscellaneous expenses	6,000
Research assistant	5,000
TOTAL	45,000

APPENDIX III DATA COLLECTION SHEET

VARIABLE	Athi River Mining Company Limited	Bamburi Cement Limited	East Africa Portland Cement Limited
Turnover			
Cost of Sales			
Gross Profit			
Profit After Tax			
Non current Assets			
Inventory			
Current Assets			
Current liabilities			
Non Current Liabilities			
Equity			