

**AN EXAMINATION OF THE EFFECTS OF CAPITAL STRUCTURE DECISIONS ON
FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS:
A CASE OF SUGAR FIRMS IN KENYA**

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DECLARATION AND APPROVAL

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

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DEDICATION

This work is dedicated to my parents Mr. & Mrs. Tom and Jane Ndiwa for their constant support and encouragement throughout my studies at Kabarak University. Secondly to my siblings Godfrey and Margret Ndiwa who have been sources of guidance and strength throughout the period.

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ABSTRACT

Capital structure is the mix of securities used to finance the operations of a firm. This is through a combination of debt and equity. The purpose of this study was to examine the effect of capital structure decisions on the financial performance of sugar manufacturing firms in Kenya. The study was prompted by the poor financial performance and huge debt burden owed by sugar manufacturing firms in Kenya that has disrupted the normal operations of these firms thus threatening the collapse of the sugar subsector in Kenya. The objectives of the study were: - to examine the effects of financial gearing on financial performance, to assess the relationship between cost of capital and financial performance and to investigate the relationship between debt to equity and financial performance. The study used gross profit margin, net profit margin, operating ratio and return on capital employed as measures of financial performance. The study adopted a descriptive design where secondary data from published financial statements of sugar manufacturing firms were used covering a period of eleven years from 2000 to 2010. Descriptive statistics, simple regression analysis, correlation analysis and multiple regression analysis were used for data analysis using Stata 13.0. The findings indicate that the capital structure decisions of sugar manufacturing firms in Kenya had a negative effect on the financial performance as measured by gross profit margin, net profit margin, operating ratio and return on capital employed (ROCE). The study recommended that the managers of sugar manufacturing firms should reduce their reliance on long term debt as a source of finance.

Key words: Capital structure, Sugar manufacturing firms, financial performance, Kenya

LIST OF ACRONYMS

COMESA	Common Market for Eastern and Southern Africa
GPM	Gross profit margin
KENATCO	Kenya National Taxis Corporation
KSB	Kenya Sugar Board
KSI	Kenya Sugar Industry Strategic Plan, 2010-2014
M&M	Modigliani and Miller
ROCE	Return on Capital Employed
NPM	Net profit margin

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The study on capital structure attempts to explain the securities and financing sources used by companies to finance investments (Myers, 2001). Brigham, (2004) referred to capital structure as a way in which an organization finances its operations which can be either through debt or equity capital or a combination of both.

The theory of capital structure originated from the seminar paper published by Modigliani and Miller, (1958) which proposed that the capital structure of a firm had no effect on its value since a firm's value was an aggregate of all its profitable investments. From this controversial theory other scholars emerged with theories that tried to explain the rationale behind the choice of a given capital structure, notable among them being the strategic trade off and pecking order theories.

The pecking order theory states that firms will prefer to borrow using debt than issue new units of equity this after exhausting the internally generated funds. Thus, debt ranks highly in preference compared to equity (Myers 1984). The strategic trade off theory states that firms will inject debt instruments into the capital structure up to a point when any additional unit of debt becomes an expense that affects its financial performance (Jensen and Meckling 1976).

One of the most important financing decisions facing the management of a firm is how to combine debt and equity in a manner that enhances its financial performance (Glen and Pinto, 2007). Thus the management of an organization should analyze all the determinants of corporate capital structure which according to Ross, (2008) include; the asset structure, tangibility of

assets, the size of the firm and availability of growth opportunities before choosing the appropriate mix of securities to use in financing its operations.

The use of debt in an organizations capital structure has both positive and negative effects on its financial performance. Organizations that use an optimum amount of debt in their capital structure have enhanced firm value which is manifested in the form of increased sales, efficiency in production and low taxes (Sagwa, 2013). While firms with sub optimal use of debt in their capital structure usually suffer from a variety of financial ailments which Rajani and Zingales (1995) describes as payment of high taxes, high proportions of accounts payable, large deficits in the firms cash flow and in some cases corporate dissolution.

According to Modigliani and Miller, (1963) firms should incorporate more debt in their capital structure in order to maximize the firms value which is manifested through high profits, increased share prices and efficiency in management. However, Harns (2011) warns of the dangers of high amounts of debt in the capital structure of a firm, which include, Bankruptcy, liquidity costs and in some cases corporate dissolution

Financial performance is the 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 provide a valuable tool to stake holders which aids in evaluating the past financial performance and current position of a firm.

Financial performance evaluation are designed to provide answers to a broad range of important questions, some of which include whether the company has enough cash to meet all its obligations, is it generating sufficient volume of sales to justify recent investment; does the company collect outstanding accounts from customers without creating burden on its cash flow, does the company make timely payments to suppliers to take advantage of

discounts, and does the company have sufficient working capital to finance its operations. An effective financial performance evaluation system should be able to attain the goals of promoting goal congruence and coordination, communicating expectations, motivating, providing feedback and benchmarking the organization, (Stanford, 2009).

Mwangi, (2014) established that there exists a statistically significant relationship between financial performance and a firm's capital structure. According to Mwangi, (2014) highly indebted firms at the Nairobi securities exchange registered low profits which if not checked could result in bankruptcy. This according to Kodongo and Maina (2013) is due to the effect of debt interest on a firm's cash flow which is manifested in the form of inadequate working capital financing that halts the management's ability to invest in profitable ventures.

The use of high proportions of debt in the capital structure of organizations has been associated with numerous cases of corporate bankruptcy. A study by Wellington, (2011) indicates that several firms in the United States of America have been placed under receivership due to issues related to their capital structure mix and in particular the use of debt. These firms include Gundhay steel firm, Imperial sugar, Rosella Inc, Washington mutual and general motors.

A study by Sing and Hamid, (2010) on the effects of capital structure on the financial performance of large manufacturing firms in Asia indicated that firms in Asia used a lot of debt in their capital structure compared to manufacturing firms in developed countries and this was among the reasons why such firms had deteriorating financial performance. These findings concurred with the findings of Munene, (2012) on the causes of corporate bankruptcy in Kenyan firms where the use of suboptimal capital structure was identified as the most outstanding reason as to why firms such as Kenatco, Pan Paper Company and Muhoroni Sugar Company were under receivership.

Sugar manufacturing firms in Kenya seem to concur with the above findings given that they seem to have an overreliance on debt as a source of financing (Kegode, 2011). This led to the closure of Ramisi Sugar Company in 1988, while Miwani, Muhoroni and Busia sugar manufacturing firms were placed under receivership in March 2001, April 2001 and August 2006 respectively (KSB, 2012). Most of these loans according to the Kenya sugar board are in the form of loans from the sugar development fund and commercial banks which are currently estimated at Ksh.50.175 Billion.

The use of debt among sugar manufacturing firms has adverse effects on a firm's financial health which is manifested through; severe cash flow shortage, liquidity crisis, inability to carry out routine maintenance and huge amounts of accounts payable (KSB, 2013). Most of the sugar-manufacturing firms, which are highly levered, have been recording deteriorating financial performance, which weakens their ability to service their financial obligations.

Due to the predicament facing the industry, the country is unable to meet the domestic demand for sugar, which is currently estimated at 700,000 metric tons against the industry's output of 500,000 metric tons. This makes the nation to be a net importer of sugar, which causes the country to lose approximately US\$ 20 Million annually.

A study by Transparency international, (2012) on institutional integrity of the sugar manufacturing firms in Kenya, concluded that the sugar industry in Kenya will face collapse if the current scenario characterized by frequent company shut downs, huge debt, and liquidity shortages are not resolved before the COMESA protectionism clause were lifted in 2014. However the clause was extended to June 2015 in order to enable the country realign her industries to compete favorably with other COMESA block members since, the countries, output is expensive compared to its competitors in the COMESA trading block (Hanzard, 2014) . Thus

these firms should strive for an optimal structure as Kraus, (2011) is of the opinion that optimum capital structure enhances cooperate efficiency at all levels of operations. This study therefore attempts to examine the effect of capital structure on financial performance of sugar manufacturing from a Kenyan business environment.

1.2 Statement of the problem

The Kenyan sugar sector is in crisis since most of the sugar manufacturing firms are riddled with a heavy debt burden and continuous poor financial performance (KSB, 2013). This predicament led to the closure of Ramisi sugar factory in 1988, while Muhoroni, Miwani and Busia sugar companies have been placed under receivership in March 2001, April 2001 and August 2006 respectively. Poor financial performance has been persisted despite the fact that the sugar manufacturing firms in Kenya have well branded commodities, sufficiently trained personnel and a huge domestic demand that they cannot fully satisfy. The reason for continuous poor performance cannot be easily discerned without focused investigations. Surveys on financial performance show that majority of firms that have highly qualified personnel, wide markets do perform exemplary. Certainly, the same cannot be said of the sugar subsector in Kenya since the highly indebted firms are unable to meet their financial obligations. It's on this basis that the researcher was propelled to investigate the effects of capital structure decisions on the financial performance of sugar manufacturing firms in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The overall objective was to examine the effects of capital structure decision on the financial performance of sugar manufacturing firms in Kenya.

1.3.2 Specific objectives

- i. To examine the effects of financial gearing on financial performance
- ii. To assess the relationship between weighted average cost of capital and financial performance
- iii. To investigate the relationship between debt to equity ratio and financial performance.

1.4 Research questions

The following research questions were formulated for the study.

- i. What is the effect of financial gearing on financial performance?
- ii. What is the relationship between weighted average cost of capital and financial performance?
- iii. Does total debt to equity ratio affect financial performance?

1.5 Significance of the Study

The study was intended to be beneficial to the Kenya government as it shed light on the importance of financing decisions on financial performance since most of the nation's parastatals are in financial crisis due to over reliance on debt. The study would be beneficial to the new industries such as Kwale International Sugar Company, Sony Sugar Company, Kibos Sugar, Butali Sugar Company, Sukari and Transmara among others on the desired capital structure mix that enhances financial performance.

1.6 Scope of the Study

This study examined the effect of capital structure decisions on the financial performance of sugar manufacturing firms in Kenya and it covered a period of eleven years from 2000-2010. This period witnessed financing boom in the Kenyan, financial market, global recession and high inflation in the country. It was also during this period that Miwani and Muhoroni sugar manufacturing company were placed under receivership while, Mumias Sugar Company was privatized.

1.7 Limitations and Delimitations of the study.

Most of the data was obtained from financial statements prepared under different accounting policies and procedures. For example, the study noted that there was no uniformity in the treatment of items in the financial statements especially biological assets and classification of loans as to whether long term or short term. Thus the study was constrained by limitations arising from such financial statements preparations.

1.8 Definition of Terms

Capital structure	The proportions of equity to debt used to finance a firm's operations (Fambozzi and Drake, 2009).
Creditor	This an entity, a company or a person of a legal nature that has provided goods, services or monetary loan to a firm (Damodoran, 2011).
Debt to equity ratio	Measure of a company's financial leverage calculated by dividing its total liability, by stockholders equity, it indicates what proportion of equity and debt a company is using to finance its assets (Ojo, 2010).
Debt	Is a fixed return finance as the interest is fixed and is ideally used if a firm has strong equity base. Debt finance includes loans, debentures, overdraft, bonds and lease financing (Mayo, 2011).
Equity Shares	These are units which represent ownership in a firm. Equity can be in the form of ordinary shares or preference shares, (Ferran, 2009).
Financial gearing	This is a ratio of total debt to total assets and defines the total amount of debt relative to assets.

Gross profit margin	Financial metric used to assess firm's financial health by revealing the proportions of money left over from revenues after accounting for cost of goods sold it is calculated as Gross profit margin
Hybrid security	This is a special type of security that combines the features of both debt and equity. Examples include preference share and perpetuity bonds, (Welch 2009).
Insolvency	A situation where the firm is unable to repay its creditors and the only means that repayment can be done is through the appointment of receiver manager to pay the creditors, (Triole, 2010).
Operating ratio	The ratio that shows the efficiency of a company's management by comparing operating expenses to net sales (Eljelly, 2004).
Receivership	A company goes into receivership if it faces financial failure and the administration of its business is handled by the receiver manager whose core responsibility is to run the business in a way that ensures creditors are paid, (Cheng and Tzeng, 2010)
Return on capital employed	This is a measure of profitability that measures how efficiently a company can generate profits from its capital employed by comparing net operating profits to capital employed (Joshua, 2007).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the available literature and evaluates the independent variable of the study which include financial gearing, weighted average cost of capital and debt to equity ratio whereas the dependent variable is financial performance while the intervening was inflation.

2.2 Theoretical Review

Capital structure put's into perspective the way in which a firm finances its operations, (Brigham, 2004). This can be through a combination of debt and equity (David, 2011). The theory of capital structure is attributed to Modigliani and Miller (1958) who in their seminal paper entailed cost of capital, corporate finance and the theory of investment, concluded that the method used to finance a firm's operation does not affect its value since a firm's value is a sum of all its profitable investments. This study was based on the assumptions that there were no taxes, brokerage costs, the firm's earnings were not affected by the use of debt and lastly no information asymmetry. According to Modigliani and Miller,(1958) the existence of a preferred source of financing was irrelevant since in the long run such a choice would not affect the value of the firm. The theory how ever had assumptions that would not hold in the real world since brokerage costs and taxes exist, while a firm's earning is affected by debt. A number of theories from then on were advanced to try and explain the rationale behind a given capital structure decision notable among them being the tradeoff theory and the pecking order theory.

2.2.1 Trade-off Theory

The trade-off theory of capital structure refers to the idea that a company chooses how much debt and equity to use in financing its operations by balancing the cost and benefits associated with each source of financing. According to the theory firms will chose an optimum capital structure that balances the benefits and disadvantages of both debt and equity.

According to Jensen and Meckling, (1976) the tradeoff theory predicts that weak firms will rely heavily on banks for debt while profitable and financially stable firms will rely on internally generated funds for investment. Within the trade of theory, there is a debt pecking order with bank debt being preferred over market debt due to the lower implied bankruptcy costs.

The tradeoff theory states that a company should not borrow up to a point where the costs of debt become too expensive for the firm to bear. The attractiveness of debt decreases with the amount of money paid out as interest to financiers. A firm will experience financial distress when it is unable to cope with its financial obligation and is thus declared insolvent prompting proceeding to recover the debt to be instituted which can result in the death of a firm.

2.2.2 Pecking order theory

Pecking order theory (also referred to the information asymmetry theory), was proposed by Myers (1984). According to Myers, (1984) firms prefer to finance new investments, first internally with retained earnings, then debt, and finally with the issue of new equity. Myers (1984) argues that an optimum capital structure is difficult to define as equity appears at the top and bottom of the “pecking order”. According to Myers (1984) internal funds incur no floatation costs thus firms will prefer to use them to finance their investments since they have no conditions attached to it unlike debt.

The pecking order theory is about what the firm's management will prefer in terms of the sources of finance to use. Firstly firms will chose internal finance that is using profits from previous years. Secondly if there is insufficient internally generated funds, firms will chose to lend money from credit institutions such as banks and thirdly as a last resort, firms will issue additional shares. In a nut shell the pecking order theory states that a firm's management favors internal financing to external financing.

2.3. Empirical literature

This section examines the empirical studies conducted by various researchers relevant to this study. The literature is organized in tandem with the study objectives.

2.3.1 Concept of Capital Structure

A firm's capital structure refers to the mix of its financial liabilities. There are two different ways of financing the assets of a company this is through equity or debt. Capital structure refers to the way a corporation finances its assets through some combination of equity and debt (Chava and Roberts, 2008).

The concept of capital structure has been defined by numerous scholars in different ways, notable among them being Shefrin, (2005) who referred to capital structure as the mix of different types of securities (long term debt and common stock) which are issued by a company to finance its assets. While, Chung, (2007) and Webster, (2012) see capital structure as a mix of debt and equity financing in a firm. From all the definitions above, it is eminent that capital structure in summary refers to the structure of a firm's liability.

According to kavindu, (2013) and later expounded by Gunzeh, (2013) the Kenyan financial markets is not fully developed hence the most commonly traded financial instruments include equity shares, debentures and treasury bills. This has a significant impact on the capital structure

of firms trading in the region since their capital structures are restricted to combinations of equity, debentures and bank debts.

Magara, (2012) did a study on the determinants capital structure among firms listed at the Nairobi securities exchange where the study sought to find out the major determinants of capital structure. It was established that from the period 2007 to 2011, there was a positive significant relationship between firm size, tangibility of assets and growth rate and the degree of leverage of the firms listed at the Nairobi securities exchange.

2.3.2 Effect of financial gearing on financial performance.

Financial gearing according to Aliu (2010), is the mix of long-term corporate funding provided internally by shareholders and that contributed externally by lenders. Surprisingly, there is no clear-cut definition of gearing in the academic literature. The specific choice depends on the objective of the analysis.

Rajan and Zingales (1995) applied four alternative definitions of gearing. The first and broadest definition of gearing was the ratio of total (non-equity) liabilities to total assets. This can be viewed as a proxy of what is left for shareholders in case of liquidation. However, this measure does not provide a good indication of whether the firm is at risk of default in the near future. In addition, since total liabilities also include items like accounts payable, which are used for transaction purposes rather than for financing, it is likely to overstate the amount of leverage. In addition, this measure of leverage is potentially affected by provisions and reserves, such as pension liabilities.

A second definition of gearing is the ratio of debt (both short term and long term) to total assets. This measure of leverage only covers debt in a narrower sense (i.e., interest-bearing debt) and excludes provisions. However, it fails to incorporate the fact that there are some assets that are

offset by specific non debt liabilities. For example, an increase in the gross amount of trade credit is reflected in a reduction in this measure of gearing. Because the level of accounts payable and accounts receivable may differ across industries, Rajan and Zingales (1995) suggest using a measure of leverage unaffected by the gross level of trade credit.

A third definition of gearing is the ratio of total debt to net assets, where net assets are total assets less accounts payable and other current liabilities. This measure of gearing is unaffected by non-interest bearing debt and working capital management. However, it is influenced by factors that have nothing to do with financing. For example, assets held against pension liabilities may decrease this measure of gearing. In Switzerland this should not be important because pension liabilities need not be expensed in the balance sheet. In contrast to most other continental European countries, pension money is managed in separated entities.

Our fourth and final definition of gearing is the ratio of total debt to total assets, where assets total is defined as total of noncurrent assets and short term assets. . This measure of gearing looks at the percentage of total assets that was financed by creditors, liabilities and debt. It directly relates to the agency problems associated with debt, as suggested by Jensen and Meckling (1976) and Myers (1977) and will be used as the definition of financial gearing in the study.

Financial gearing is used in finance to show the ratio amount of debts used to finance a business (Ebaid, 2008). Company with high gearing are usually faced with working capital shortages since such companies use a bigger portion of cash flow generated from operating activities to meet the demands of external financier which range from payment of interest and principle to payment of accounts receivables, (Burja, 2011).

According to Akitonye, (2008) many highly geared manufacturing firms in Nigeria have been unable to finance their working capital adequately due to over gearing and have been wound up. This is due to the importance of working capital to manufacturing firms which range from the purchase of raw materials, payment of accounts payable and finally credit management. Thus firms with high gearing ratios are usually forced to issue equity as a mechanism of counteracting the effect of debt on the operating cash flow in order to positively enhance their working capital which according to Nyabwanga, (2011) is the lifeline of a firm. This notion upholds the underlying principle of the pecking order theory as opined by Myers, (1984) since equity appears both at the beginning and the end of the capital structure of an organization.

2.3.4 The effect of weighted average cost of capital on financial performance.

The cost of capital according to Aghion, (2006) is the rate of return that an enterprise must pay to satisfy the providers of funds. It is the weighted sum of the cost of equity and the cost of debt. For an investment to be worthwhile, the estimated return on capital must be greater than the cost of capital. Otherwise, the risk-adjusted return on capital must be higher than the cost of capital. The cost of equity is the return that ordinary stockholders expect to receive from their investment. The cost of loan stock is the rate which the company must provide its lenders as debt servicing. The weighted average cost of capital (WACC) of a firm, is the average of the cost of its equity, preferred stock and loan stocks. The cost of debt is a composition of paid interest (interest rate) and cost of risk (that is risk of default on debt).

In practice, interest paid by a company always include the risk-free rate plus a risk component which itself incorporates a probable rate of default. From a firm's perspective, a higher cost of debt capital can increase its attractiveness to various stakeholders and greater external control by debt-holders. This may interfere with the firm's ability to navigate effectively

within its competitive environment as it indicates that the firm engages in riskier business activities as it responds to changing competitive pressures. Thus, the use of debt financing would be an impediment subjecting managers to both the discipline and constraints of the capital markets.

Chen, (2004) established that Chinese firms that had a higher cost of capital were unable to remain profitable since the high rate at which investment projects were discounted meant that huge sums of money was required to pay the supplier of funds which affected their free cash flow. The study however neglected the effect of government intervention in china which in the past has been responsible for poor financial performance of Chinese firms. In summary firms that have lower cost of capital have ability to effectively plan and execute their financial plans due cheaper sources of funding available to them. Riskier firms usually have higher cost of capital that make it had for them to meet the financier's obligation which mostly results in corporate failure.

2.3.5 The effect of debt to equity ratio on financial performance.

The debt to equity ratio compares the company's total liabilities to its total shareholder equity. This a measure of how much suppliers, lenders, creditors and obligors have committed to the company versus what shareholders have committed

A company's debt to equity ratio has a significant impact on a firm's financial performance as shown by empirical research done in Kenya and in other African states. Maina and Kodongo, (2013) carried out a study on the effects of capital structure on the financial performance of firms listed at the Nairobi securities exchange. The study used debt to equity ratio as one of the capital structure proxies uses to measure leverage. The findings indicate that there was a negative but significant correlation between debt to equity ratio and financial performance of firms listed at

the Nairobi securities exchange. These findings collaborate with the findings of Mwangi *et al*, (2014) where she examined the relationship between capital structure and performance of non-financial companies listed at the Nairobi securities exchange. The findings indicated that, there existed a negative but significant relationship between debt to equity ratio and financial performance as measured by return on assets (ROA) and return on equity (ROE).

Kaumbuthu, (2011) carried out a study to determine the relationship between capital structure and return on equity for industrial and allied sectors in the Nairobi securities exchange during the period 2004 to 2008. Capital structure was measured by debt to equity ratio while performance focused on return on equity. The study applied regression analysis and found a negative relationship between debt equity ratio and ROE. The study focused on only one sector of the companies listed in Nairobi Securities Exchange and paid attention to only one aspect of financing decisions. The results of the study, therefore, may not be generalized to the other sectors.

Abor, (2007) conducted a research on SMEs in Ghana and used 160 SMEs. The results were consistent with pecking order hypothesis the coefficients for performance measured by profitability were negative and significant to this was in relation to capital structure proxies measured by long term debt and short term debt to equity ratios. This implied that internal financing increases profits hence SMEs should avoid using debt to finance their activities.

Abor (2008) researched on determinants of the capital structure of Ghanaian firms listed on the Ghana Stock Exchange (GSE) during the six-year period, 1998–2003. The results also revealed that both long-term and short-term debt ratios were negatively correlated with profitability in all the sample groups. The results of this study clearly supported the pecking order

hypothesis, where profitable firms initially rely on less costly internally generated funds and subsequently look for external resources if additional funds are need for investments.

2.3.6 Effect of economic environment on capital structure and financial performance

The choice of an optimal capital structure is heavily influenced by the macro economic variables present in the business environment. Inflation is one of the most important indicators of the health of an economy. Modigliani and Miller, (1958) classical paper gave origin to a huge literature concerning the behavior of a firms capital structure under inflation.

Financial economic theory explains that there is a relationship between inflation and capital structure decisions of firms. Many classical authors including Adam smith support the idea that inflation is a key ingredient in determining the composition of debt to equity ratio that a firm uses to finance its operations. They argue that inflation encourages firms to finance their operations through the use of debt if the actual cost of borrowing has declined.

Kim, (2009) considers that an increase in the levels of inflation causes a decrease in the value of real debt, if inflation and interest rates increase equally the cost of financing debt will fall after tax deductions fail. However Boyles and Frank (2010) hold a contrary opinion they argue that many companies perceive lending to be inappropriate in times of inflation as banks and other financial institutions lend more expensively. Thus Kim, (2009) ignored the effect of banks raising their interest rate which affects the choice of financial instruments to be used in financing.

According to Corcoran, (2009) inflation affects a firm's capital structure and firm's value thus the higher inflation rates fosters investors to sell bonds in exchange for stocks and hence firm's capital structure measured as debt-capital ratio tends to drop. Related to this literature,

Domodoran, (2009) finds empirical support for a change in expected inflation to create wealth redistribution between creditors and debtors.

According to Anand and Manjor (2009) firms actively rebalance their capital structures in order to adjust to new economic conditions. They are of the opinion that during times of economic depression firms will heavily rely on debt due to shrinking profitability which affects their ability to use retained earnings as a source of finance. Thus raising the firms leverage However their study on the effects of the American economic recession of Indian firms did not put into perspective the effect of financial innovations on a firm's capital structure. Since financial tools such hedging and stock options are designed to mitigate the effect economic fluctuations on financial securities.

Rudolph, (2005) built a theoretical model on the effect of trade fluctuation on capital structure. According to the model as the economy moves from a period of economic recession to recovery the company will increasingly rely on debt as a source of financing. He explains that companies fund their operations with generated profits during times of economic boom and only use debt during the times of recovery where the future has great potential. In a nut shell the capital structure of a firm keeps on changing in response to the prevailing economic conditions.

2.3.6 The relationship between capital structure and firm's financial performance.

Capital structure and firms financial performance are important issues for both academicians and practitioners. In practice managers of firms who are able to identify an optimal capital structure are rewarded by minimizing the firms cost of finance thereby maximizing the firms revenue.

Mohammadzadeh, (2011) studied the effects of capital structure on profitability of firms listed at the Tehran Stock Exchange and found that firms performance which is measured by (EPS & ROA) was negatively related to capital structure. These findings are consistent toChakraborty,

(2010), and Abor (2008) who indicated that a firm's performance is negatively related to capital structure. Ngoc-Phi-Anh and Jeremy (2011), examined the relationship between firm characteristics, capital structure and operational performance among a sample of 427 companies listed on the Vietnamese stock exchange during the three years 2007-2009. The results showed that both long term debt and short term debt were negatively correlated to performance shown by return on asset (ROA), but positively correlated with long-term assets ratio (LTDA) and negatively correlated with short term ratio (STDR). Vedran (2012), researched on capital structure and firm performance in the Financial Sector in Australia the results showed that a significant and robust quadratic relationship between capital structure and the firm's financial performance at relatively low levels of leverage capital structure is positively correlated to performance and at relatively high levels of leverage capital structure is negatively correlated to performance. This was attributed to financial distress outweighing any gains made from managerial performance. Mohammad and Jaafer, (2012) seeking to extend Abor's, (2005b) work, on the effect of capital structure on profitability in a study with sample of 39 Jordan companies which revealed significantly negative relationship between debt and profitability. These findings show that an increase in debt position is associated with a decrease in profitability; thus, the higher the debt, the lower the profitability of the firm. The results also show that profitability increases with control variables; size and sales growth.

Abdul, (2012) studied the relationship of capital structure decisions on the financial performance of Pakistan firms measured by Tobin's Q. The results showed that a negative and significant relationship exists between short term debt to total assets and total debt to total assets measures of capital structure and the Tobin's Q. The relationship between long term debt to total assets and Tobin's Q is positive whereas the control variable (firm size) shows a

significantly negative relationship with the performance variable measured by Tobin's Q, as large size firms shows inefficiency and affects the firm performance negatively. Nour, (2012) studied the relationship between Capital Structure and Firm Performance of Palestinian firms, the results indicated that firm performance is positively related to capital structure and statistically significant with total debt to total assets except Market value of equity/ Book value of equity was significant with total debt to total assets & short-term debt to total assets.

Iorpev and Kwanum, (2012) found a negative and insignificant relationship between capital structure and firm performance for firms listed on Nigeria stock exchange. The study concludes that statistically, capital structure represented by short-term debt to total assets (STDTA), long-term debts to total assets (LTDTA) and total debt to equity (TDE) is not a major determinant of firm performance. Abor (2005 a) reports a positive relation between capital structure, which measured by STD and TD, and performance over the period 1998-2002 in the Ghanaian firms. Puwanenthiren, (2012) analyzed the impact of capital performance on Sri Lanka business firms. The results show that performance shown by ROE and ROA have negative relationship with capital structure at -0.104, -0.196 respectively. The F and t values were 0.366, -0.605 respectively and the relationship was insignificant. Thus firms which depend on debt capital pay much as debt interest.

Abdul, (2012) researched on the relationship of capital structure decisions with firm performance of the engineering sector of Pakistan, the results showed that financial leverage measured by short term debt to total assets (STDTA) and total debt to total assets (TDTA) had a significantly negative relationship with the firm performance measured by return on assets (ROA), and return on equity (ROE) had negative but insignificant relationship with leverage.

Firms in the engineering sector of Pakistan were largely dependent on short term debt but debts were attached with strong covenants which affected the performance of the firms

2.4 Financial performance

Van Horn, (2005), defined financial performance as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term according to Pandey, (2000) is used as a general measure of the overall financial health of a business. Research on the firm's financial performance emanates from organizations theory and strategic management. The notion of financial performance is used to describe performance of an entity with the legal status of a company.

The concept of financial performance is a controversial issue in finance due to its multidimensional meaning. In analyzing a firm's financial performance, emphasis should be made in formulating an adequate description of the concept of a financial performance. Which will uncover the different forms upon which firms financial performance can be measured Webster, (2012) defines financial performance as what is accomplished. Vekataran and Varadarajan, (2011) defined financial performance as, the best test of any strategy. In analogy with these definitions of performance, the financial performance of a firm will be defined as the outcome of a firm's strategy or an assessment of how well a firm has succeeded in reaching its objective.

2.4.1. Measures of financial performance

Financial performance has been defined by Webster, (2012) as a test of the effectiveness of the strategies employed by the firm. Operational performance measures, such as growth in sales and growth in market share, provide a broad definition of performance as they focus on the factors that ultimately lead to financial performance. According to Erasmus (2008), the

most commonly used performance proxies are Gross profit margin (G.P) Net profit margin (N.P) and operating ratio and return on capital employed (ROCE. These measures are from balance sheet and income statements have been used by many researchers (for example Demsetz and Lehn, (2005), Gorton and Rosen, (2009), Mehran, (2007), and Ang, Cole and Line, 2003). These are also the measure of performance used for the study.

2.5 Summary and Gaps filled by the study

This chapter critically reviewed related studies carried out in this field by past researchers on the relevance of capital structure on financial performance resulting from the pioneering work of Modigliani and Miller,(1958). The current study examined the effect of financial gearing, weighted average cost of capital and debt to equity ratio on financial performance of sugar manufacturing firms in Kenya. Most of the studies carried out to date in Kenya on the effects of capital structure on financial performance have focused on other sectors of the economy namely banking and manufacturing thus, Musienga, et al, (2013) examined the effect of capital structure on the performance of listed non-financial firms on the Nairobi securities exchange. While Gicheha, (2012) examined the effects of capital structure on financial performance commercial banks in Kenya. It is evident from the studies conducted to date on the effects of capital structure on financial performance in Kenya none have been focused on the agricultural sector which is the backbone of the Kenyan economy.

2.6 Conceptual Framework

The purpose of this study was to examine the effect of capital structure decision on the financial performance of sugar manufacturing firms. The study thus examined the effect of financial gearing, weighted cost of capital and debt to equity ratio on financial performance of sugar manufacturing firms in Kenya. With inflation being the economic factor that hinders the

achievement of planned financial outcomes which was measured through the use of financial ratios which comprise of gross profit margin, net profit margin, operating ratio and return on capital employed.

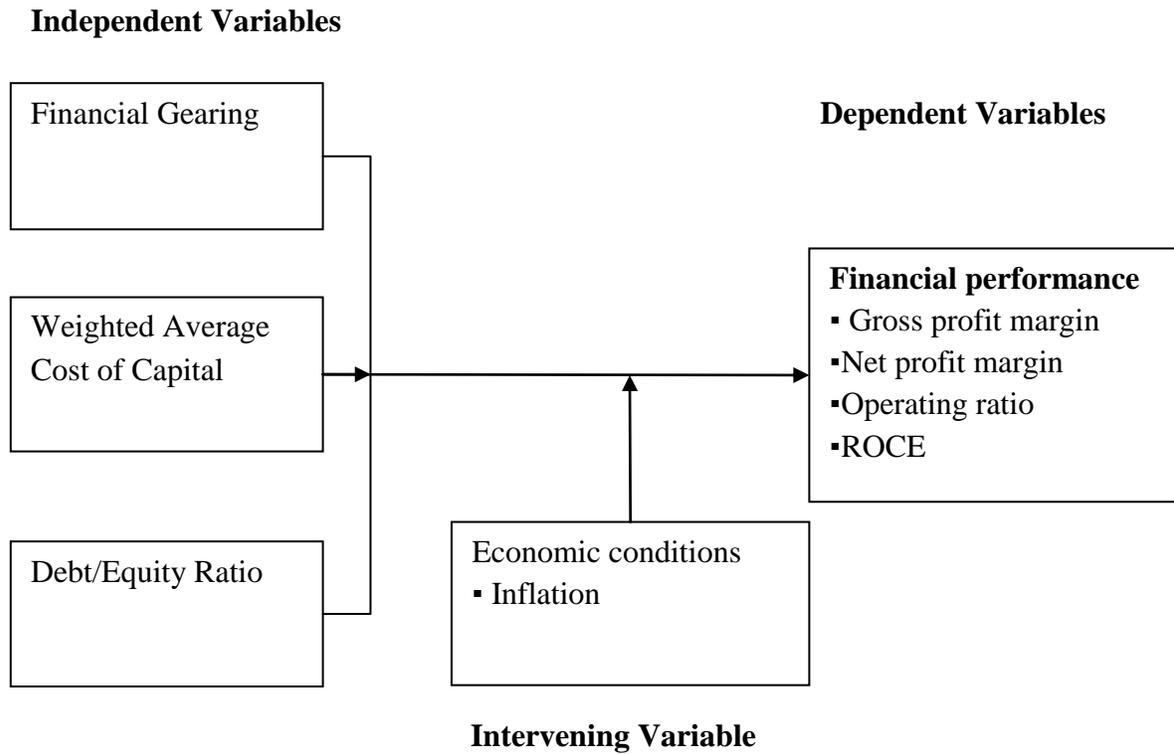


Figure 2.1: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study employed a descriptive research design. Descriptive research design was particularly suited to the study as it involved analysis of the situation as it were, without manipulation (Osoo and Onen, 2008). Thus, the study provides a descriptive profile of the effects of capital structure decisions on the financial performance of sugar manufacturing firms in Kenya.

3.2 Target Population

The study was carried out in the sugar-manufacturing firms, which are predominantly found in Western, Rift valley, Kano and Nyando sugar belts in Kenya. The population consisted of nine Sugar manufacturing firms as licensed by the Kenya sugar board as of July 2013 (See Appendix 3). The study period chosen covered a period of eleven years from the year 2000-2010.

3.3 Sampling Technique

The study conducted a census as the total target population was low (Mugenda and Mugenda, 2003). This enabled the study to get reliable and more accurate information as all firms concerned were analyzed.

3.4 Data Collection Method

An authorization letter was obtained before conducting the study from the sugar firms' management. The research involved collection of secondary data through documentary analysis of the financial books of accounts from the sugar manufacturing firms in the period 2000-2010. The period was chosen due to data availability besides coinciding with the period that witnessed increased financing activities in the Kenyan securities market coupled with the high

inflation in the country. It's during this period that Miwani and Muhoroni sugar manufacturing firms were placed under receivership while Mumias Sugar Company was privatized.

3.5 Data Processing, Analysis and Presentation

The nature of data collected determines the tools to be used for analysis. For the purpose of this study correlation, factor analysis and multiple regression analysis was used. Statistical Package for data analysis (Stata version 13.0) was used for data analysis. This was for the reason that the study examined effect of capital structure represented by financial gearing, cost of capital, and debt to equity ratio which are the independent variables on the financial performance of sugar manufacturing firms represented by the following financial ratios:- gross profit margin, net profit margin, operating ratio and the return on capital employed. Therefore, descriptive statistics, simple regression analysis, correlation analysis, and multiple regression analysis were used for analysis. Simple regression analysis was used to directly assess the impact of independent variables on dependent variable. The following simple regressions equation was developed for the study.

$$y_{it} = \alpha_{it} + \beta x_n + \varepsilon_{it}$$

Where,

y_{it} = represents each financial performance ratio of gross profit margin, net profit margin, operating ratio and return on capital employed.

x_n = represents each of the independent variables of financial gearing, Wacc and debt to equity ratio.

β = slope the slope which represent the degree in which firm performance as independent variables change by one unit variable.

ε =error term.

Bivariate correlation using the Product Moment Correlation Model was used to augment the simple regression analysis. Multiple linear regressions were then applied to measure the impact of capital structure on financial performance of sugar manufacturing firms in Kenya. Where the following multiple regression equations were formulated for the study.

$$\text{Model 1 } Gp_{it} = \alpha_{it} + \beta_1 Gr + \beta_2 Wacc + \beta_3 D/E + \varepsilon_{it} \dots\dots\dots (1)$$

$$\text{Mode 2 } Np_{it} = \alpha_{it} + \beta_1 Gr + \beta_2 Wacc + \beta_3 D/E + \varepsilon_{it} \dots\dots\dots (2)$$

$$\text{Mode 3 } Op_{it} = \alpha_{it} + \beta_1 Gr + \beta_2 Wacc + \beta_3 D/E + \varepsilon_{it} \dots\dots\dots (3)$$

$$\text{Model 4 } ROCE_{it} = \alpha_{it} + \beta_1 Gr + \beta_2 Wacc + \beta_3 D/E + \varepsilon_{it} \dots\dots\dots (4)$$

Where,

Gp_{it} = Gross profit margin.

Np_{it} = Net profit margin.

Op_{it} = Operating ratio.

$ROCE_{it}$ = Return on capital employed.

Gr = Financial gearing.

$Wacc$ = Weighted average cost of capital.

D/E = debt to equity ratio.

α_{it} = intercept/ constant

ε_{it} = Error term

CHAPTER FOUR

RESULTS, ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of analysis together with the contextual discussions. Data summary was done using descriptive statistics while inferential statistics was used to provide insights regarding the nature of relationships between the variables under investigation. Only 7

4.2 Descriptive Statistics

The study conducted analyses aimed at describing the general distributional properties of the data, to identify any unusual observations (outliers) or any unusual patterns of observations that may cause problems for later analyses to be carried out on the data. Table 4.1 presents the descriptive statistics of the variables used in the study. Regarding the firms' gearing, it was noted that the sugar manufacturing firms in Kenya are heavily geared with a mean of 6.73909 and standard deviation of 13.3607 indicating that these firms had an amount of debt that was on average six times the value of total assets they owned. The Findings further indicate that the greatest proportions of assets used for operations were financed through long term debt, this is in line with the findings of Abor, (2005a) where many Ghanaian firms used debt to finance their long term assets to be used due to the persistent believe that debt was a cheaper source of financing compared to equity thus collaborating the findings of Anand and Manoj (2002) where many manufacturing firms in India preferred to finance their fixed assets entirely on debt. The weighted average cost of capital is a key indicator of what an investor would receive as compensation for accepting financial risk. Findings indicate that sugar manufacturing firms in Kenya that are privately owned have positive weighted average costs of capital with averages of

Of 9.015% and 7.9 % which according to Weiding (2013) encourages investments and growth in these firms. However the remaining firms had huge negative weighted average cost of capital which made them unattractive to invest in with averages of -4.25, -446.117, -225.507, -5.045 and -4.14 for Chemelil, Miwani, Muhoroni, Nzoia and south Nyanza sugar companies. Which translated to an industry average of -94.0256 with standard deviation of 232.299 respectively.

Debt to equity ratio referred to the proportion of assets financed with the firms total liabilities. On average, the proportion of total assets financed with both long term and short term debt was found to be 0.3279 with a standard deviation of 1.74389. These averages presents a remarkable difference that exists between the capital structure choices of private firms (Mumias and west Kenya) and state owned sugar manufacturing firms in Kenya which included the remaining five firms. These findings show that government owned sugar manufacturing firms in Kenya have injected more debt in their capital structure due to the perception that debt does not dilute the firms ownership structure hence enabling them to achieve their objectives this is in line with the arguments proponed by Kavindu (2012), where the findings indicate debt financing was rampant among state owned sugar companies in order to enable them serve the country better and achieve the government's objective of providing a means of economic empowerment to communities living close to the sugar manufacturing firms.

In terms of financial performance, sugar manufacturing firms showed remarkable differences with Mumias and West Kenya Sugar Company being profitable while the remaining government owned sugar factories were incurring losses. The key performance indicators included the Gross profit margin with mean performance of -3.82156 and standard deviation of 9.9598. This indicates that the sugar manufacturing industry in Kenya had a high cost of production which affected their ability to trade efficiently not only in the Kenyan market but in the international

market as well. The higher cost of production was the reason why Kenya applied for protectionist clause in the COMESA agreement in order to protect her industries from unfair competition from developed sugar industries with cheaper sugar, (Hanzard, 2014). The sugar sub sector had a Net profit margin with a mean of -4.37455 and a standard deviation of 11.45135 indicating that the industry had severe cash flow difficulties which forced the affected firms to inject more debt instruments in order to finance their operations.

The findings further found out that the sugar manufacturing were not efficient in their operations as anticipated. This was due to a high Operating ratio with a mean of 5.14987 and standard deviation of 10.40341, this was due to the presence of government owned sugar manufacturing which have other objectives to attain such as economic empowerment, provision of employment among others and were not guided with the profit maximization objective in their operations unlike privately owned sugar manufacturing firms such as Mumias and west Kenya that registered lower operating ratios which imply that these firms were highly efficient in their operations

The findings show that return on capital employed (ROCE) had an industry average was 4.3582 with standard deviation 11.397 indicating that the sugar manufacturing industry in Kenya made only forty three cent for every shilling invested in the production of revenue this according to Akitonye, (2010) points out to bad investment decisions that many manufacturing firms in Africa make that have low returns hence affecting their ability to remain profitable in the long run.

Table 4.1: Descriptive analysis table

	Gearing	WACC	Debt/Equity ratio	Gross profit margin	Net profit margin	Operating ratio	ROCE
Observations	77	77	77	77	77	77	77
Mean	6.73909	-94.0256	0.32	-3.82156	-4.37455	5.14987	4.3582
Median	0.73	-2.01	0.69	-0.02	-0.02	1.04	-0.02
Std. Deviation	13.3607	232.299	1.71935	9.9598	11.45135	10.40341	11.397
Skewness	3.6320	-3.5844	.7098	-2.4942	-2.5138	2.3136	-2.515
Std. Error	1.5226	26.4728	0.1959	1.1350	1.3050	1.1856	1.2988
Kurtosis	16.4621	14.6877	1.0587	4.7187	4.8304	3.7456	4.8423
Range	83.91	1414.35	8.94	40.88	47.66	40.87	47.66
Minimum	0.30	-1369.84	-2.11	-40.18	-46.96	0.31	-46.96
Maximum	84.21	44.51	6.83	0.69	0.7	41.18	0.7

Findings in Table 4.1 above indicate that there were high amounts of variability between capital structure items of financial gearing, weighted average cost of capital and debt to equity ratio and financial performance measures gross profit margin, net profit margin, operating ratio and return on capital employed among the sugar manufacturing firms. Graphical displays were used to assess more directly the existence of outliers among the sugar manufacturing firms. Consequently, two sugar manufacturing firms Miwani and Muhoroni were identified as outliers since they exhibited characteristics that were not in conformity with the entire group and were removed from inferential analysis as they posed the challenge of giving inconsistent results for the entire group as illustrated in the bar graphs below.

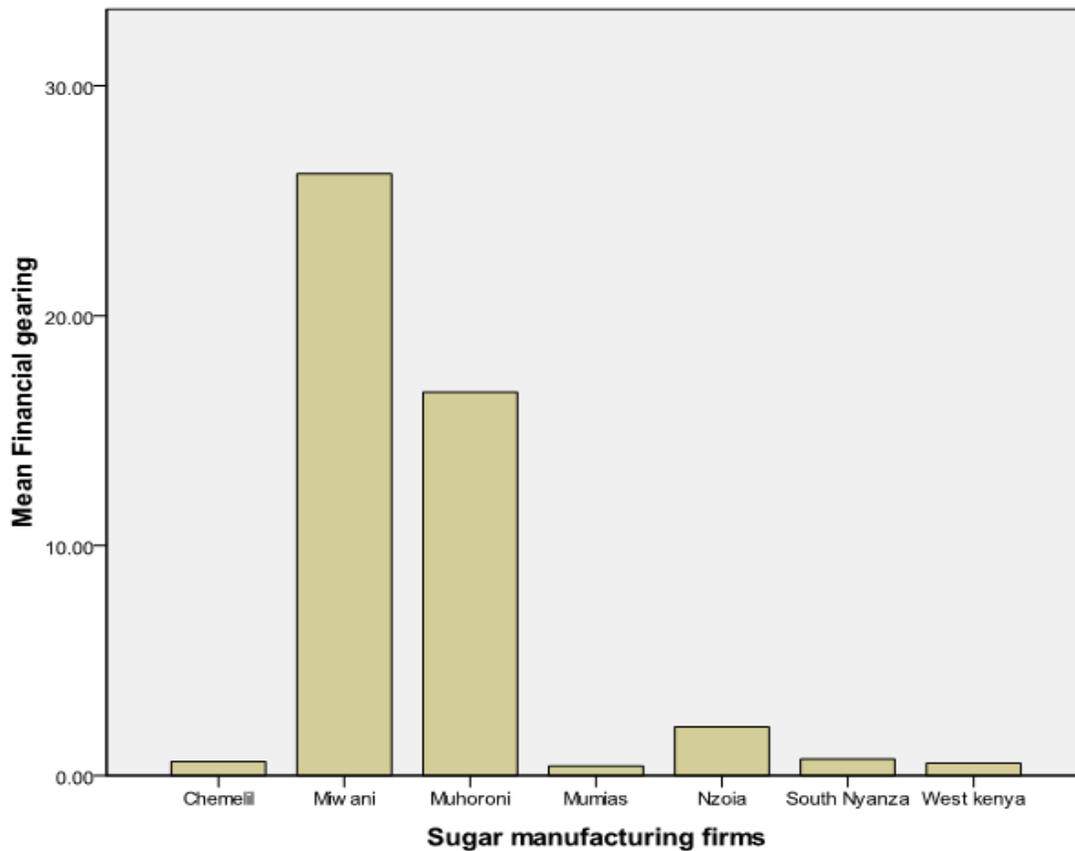


Figure 4.1 Gearing data

According to figure 4.1 Sugar manufacturing firms in Kenya have both the highly and lowly geared firms. According to Rajani and Zingales (1995) highly geared firms have a gearing ratio of above 0.8 while those that are regarded as being lowly geared have a gearing ratio of less than 0.5 thus the highly geared firms as per the findings include Muhoroni, Mwangi and Nzoia sugar company with averages of 16.67, 26.17, and 2.11 respectively, this indicates that these sugar manufacturing firms have huge debt obligations that they cannot satisfy even through sale of their assets hence according to Ojo, (2012) are declared technically insolvent as they cannot finance their working capital needs. The findings in indicate that Mumias and West Kenya sugar

companies had financial gearing averages 0.41 and 0.52 which signify that they were in sound financial health and able to meet their financial obligations as they occur.

The findings above further point out the possibility of Sony and Chemelil sugar companies falling into the debt trap since their financial gearing averages were above 0.6 hence, if nothing was done to correct their current financial gearing positions they will be declared technically insolvent which will cripple the subsector.

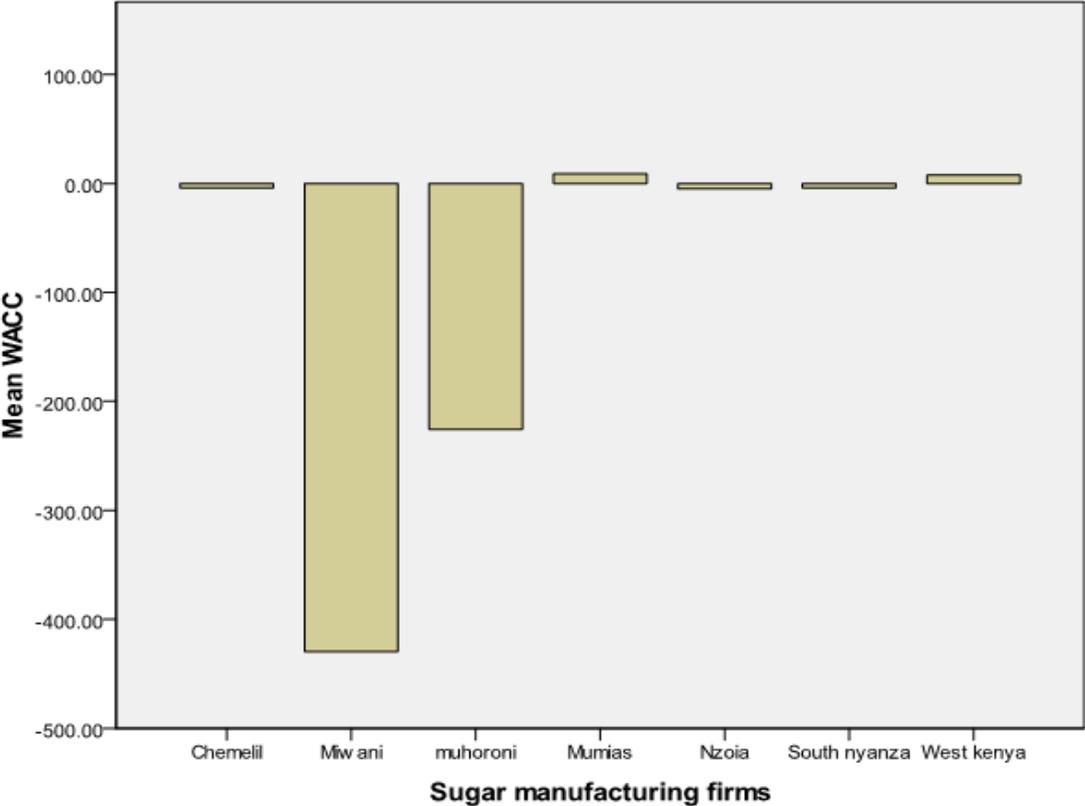


Figure 4.2 Weighted average cost of capital data.

The weighted average cost of capital is the rate of return that a company is expected to pay on average to all its security holders who finance its assets. The findings in Figure 4.2 indicate that investing in Chemelil, Miwani, Muhoroni, Nzoia and South Nyanza Sugar companies would result in financial losses this is attributed to their negative mean weighted average cost capital of

-4.25, -446.117, -225.507, -5.045 and -4.14 for Chemelil, Miwani, Muhoroni, Nzoia and South Nyanza sugar companies. The findings in figure 4.2 above indicate that Mumias and West Kenya sugar companies had positive averages of 9.015% and 7.9% indicating that these firms were worthy investing in. The negative WACC in the above firms is attributed to negative equity in this firms due to their debt obligation exceeding the shareholders equity and constant government bailout among the ailing sugar millers as pointed out by Scoping report, (2012) where the government spent Ksh. 0.5 billion in the year 2000, Ksh 0.3 billion in the year 2008 to bail out Miwani Muhoroni and Nzoia form eminent factory shut down.

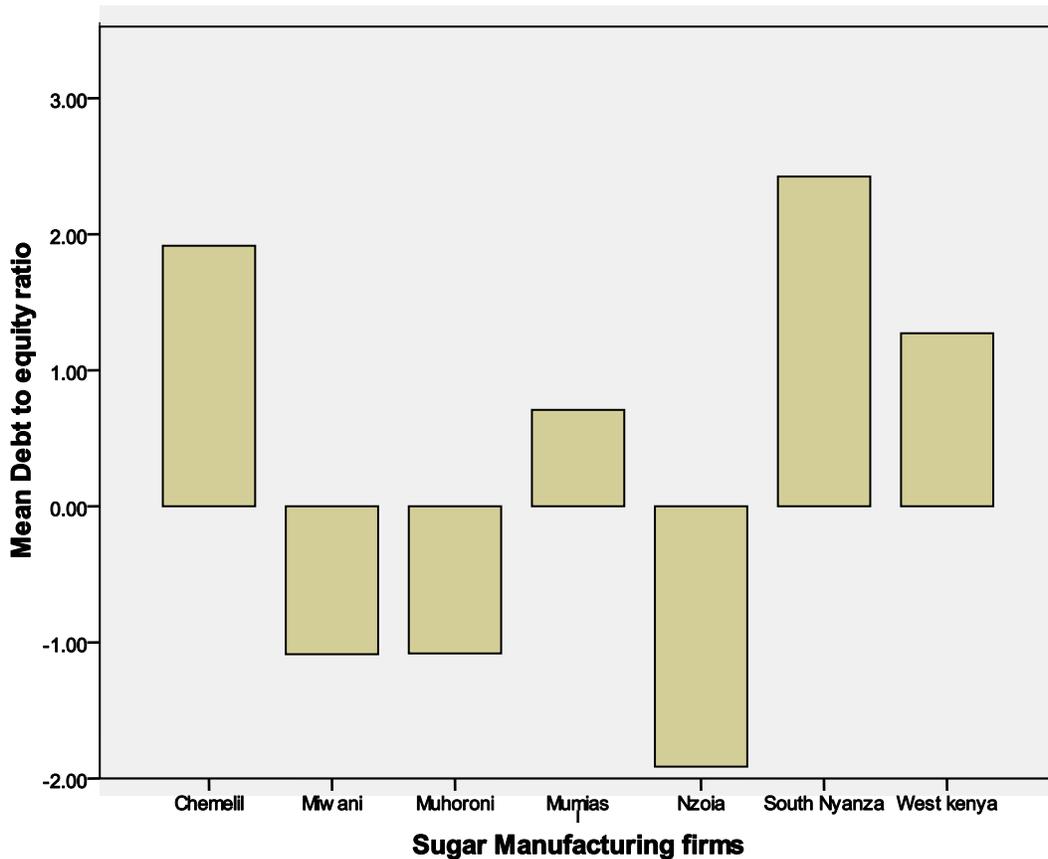


Figure 4.3 Debt to equity ratio data

The debt to equity ratio measures the proportion of equity and debt a company is using to finance its assets. The findings in Figure 4.3 indicate that sugar manufacturing firms in Kenya have both

positive and negative debt to equity ratios. According to Kraus, (2005) a negative debt to equity ratio indicates that a company's net worth is negative due persistent financial losses incurred by the company and are bankruptcy thus Miwani, Muhoroni and Nzoia sugar companies have negative debt to equity ratios with averages of -1.08, -1.08 and -1.913. While Chemelil, Mumias, South Nyanza and West Kenya sugar companies had strong positive debt to equity ratios with averages of 1.92, 0.71 2.43 and 1.32 which indicates that these firms were aggressive in financing their growth through debt thus opining the findings of Vedran, (2012) where Australian firms preferred to inject more debt in their capital structures before issuing additional units of equity to finance their operations.

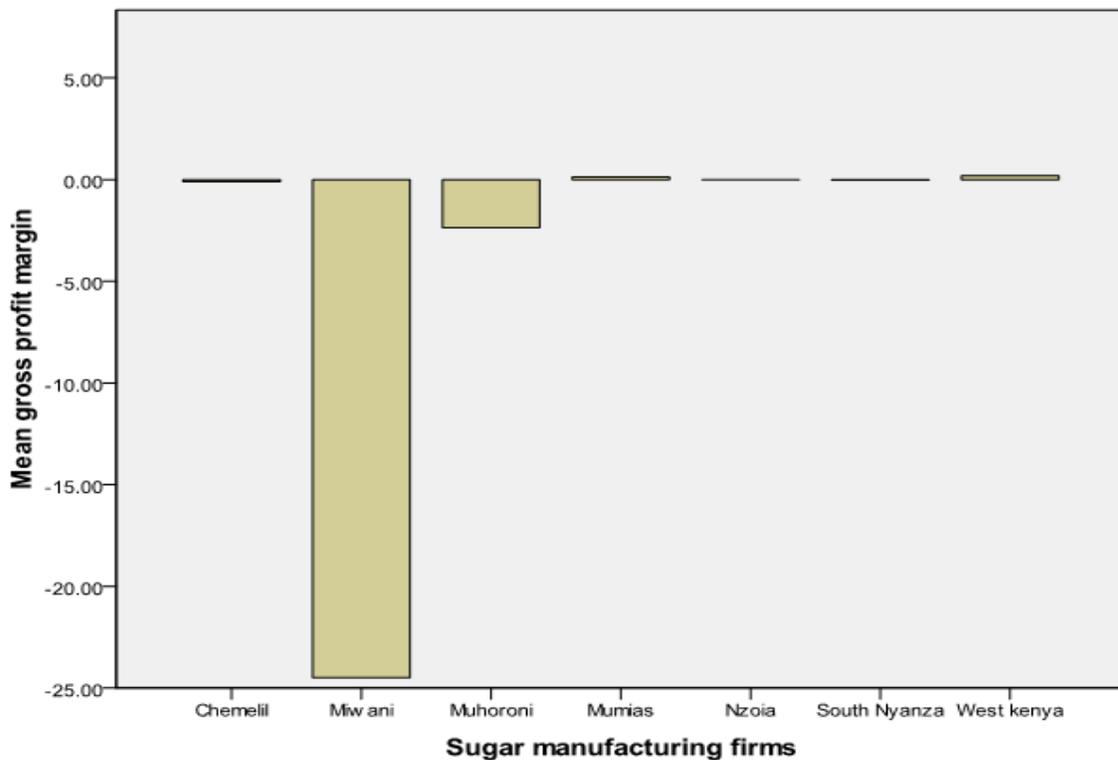


Figure 4.4 Gross profit data

Gross profit margin assess the financial health of a business by revealing the proportions of money left after accounting for cost of goods sold. The findings above indicate that Chemelil

Miwani , Muhoroni, Nzoia and South Nyanza sugar manufacturing firms had negative gross profit margins averages of -0.10, -26.4, -2.4, -0.001 and -0.003 respectively which translates to high cost production due to use of obsolete technology in production of sugar and its byproducts. Companies that had heavily invested in modern production techniques such as Mumias and west Kenya Sugar Company had averages of 0.062 and 0.205 respectively.

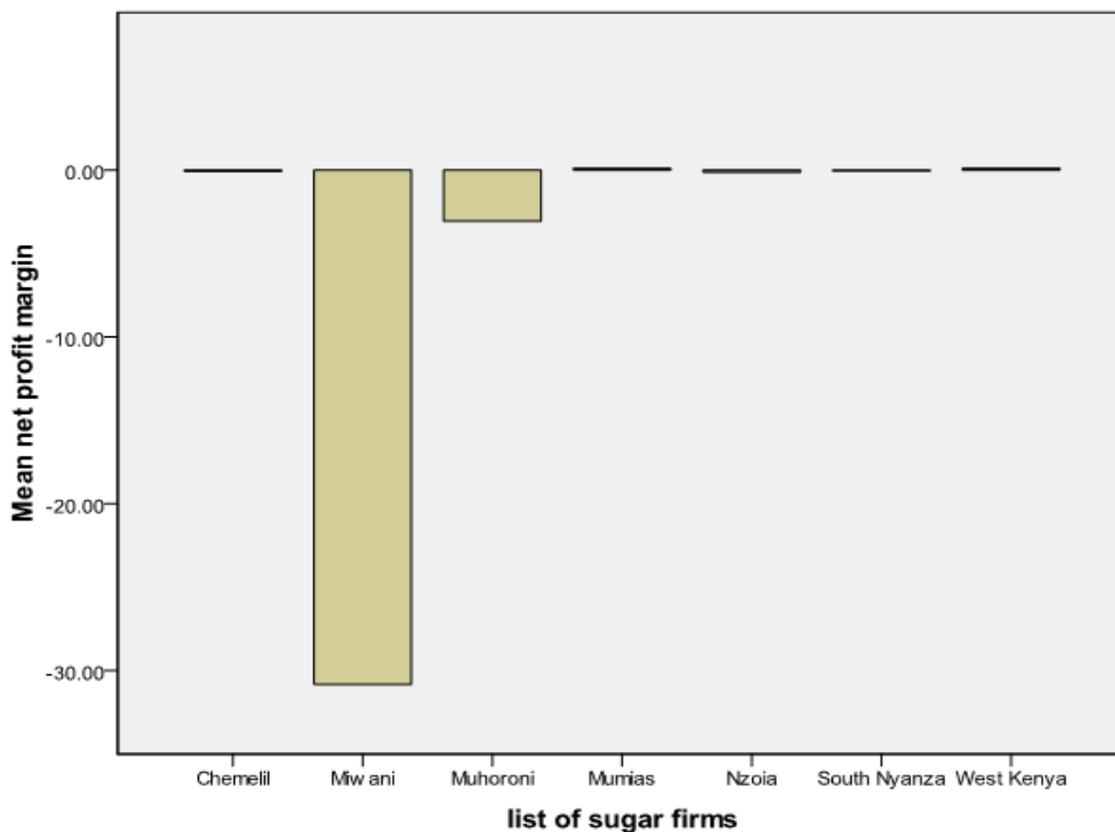


Figure 4.5 Net profit Margin Data.

Net profit margin is a measure of how much out of every shilling of sales that sugar companies keeps in earnings. Findings indicate that Chemelil, Nzoia and South Nyanza sugar companies had fluctuating net profit margins over the study period which according to the Kenyan facts and figures, (2012) corresponded to changes in the bank’s lending rates in the study period which

affected their debt interest obligations. Thus these firms were spending more money than they could make hence faced severe cash flow difficulties which hindered their ability to reinvest in more profitable business ventures. These findings further point out that Miwani sugar factory was persistently making losses over the study period with a net profit average of -30.212 which indicates that the company made a 30% loss on every shilling it made thus the company could not be turned around under the prevailing market conditions. As for Muhoroni sugar company findings indicate that company had incurred losses during the study period which indicates that the firm was under severe cash flow difficulties and was being maintained artificially through government support but could be turned around if investments could be made in diversification strategies such as production of ethanol and electricity generation.

The findings in Figure 4.5 above further indicate that Mumias sugar and West Kenya sugar companies had positive net profit margins with averages of 0.099 and 0.108 which indicated that although these were profitable, they not very efficient in their operations as expected due to lower net profit margins. These finding indicate that if the current trend is not changed Mumias sugar and west Kenya will require additional funding to maintain their operations due to their inability to generate sufficient profits. The poor financial performance exhibited by Mumias Sugar Company is attributed to an expansionist policy currently undertaken by the firm in order to diversify its production of electricity and ethanol which has forced the firm to issue debt instruments in both the local and international markets which currently according to the Mumias sugar financial records 2013 is as at US\$ 20 million. This loan has severely affected the sugar manufacturing firm's free cash flow which affects its ability to operate efficiently.

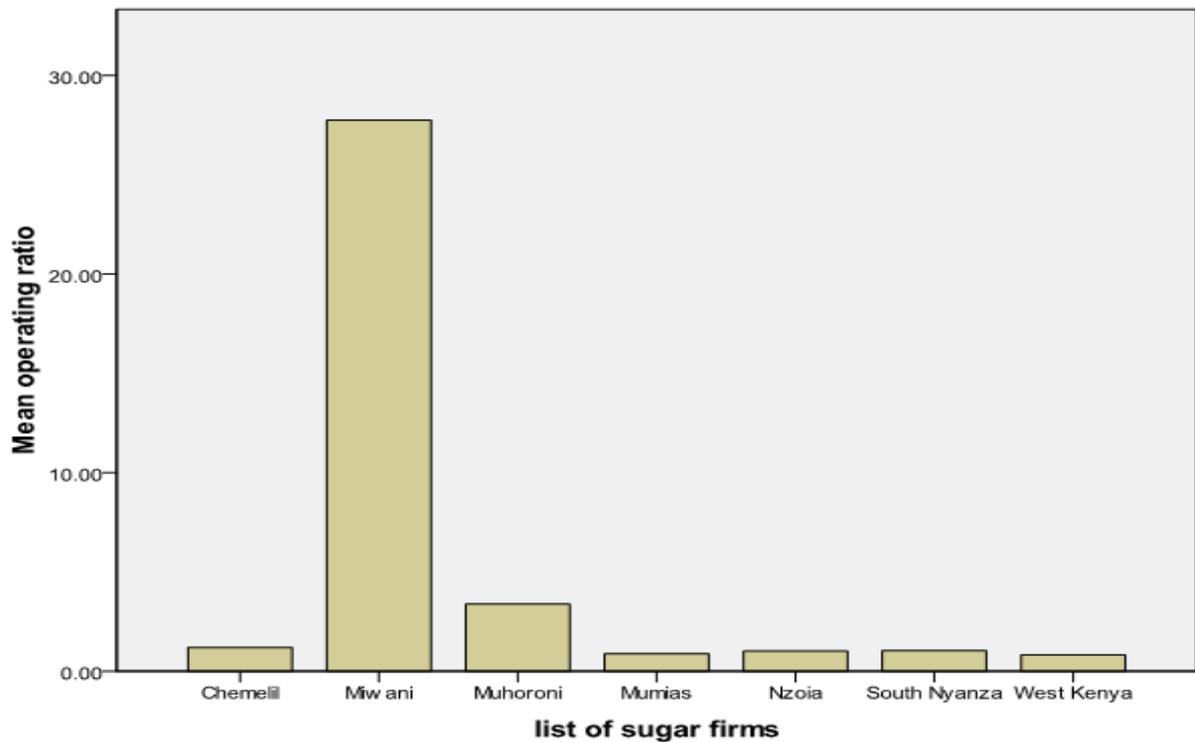


Figure 4.6 Operating ratio data

Operating ratio shows the efficiency of management by comparing operating expenses to net sales. According to Farman and French (2013) efficient companies are those with the lowest operating ratio closer to zero. The findings in figure 4.6 indicate that management efficiency is lacking in the sugar subsector with firms such as Chemelil, Muhoroni, Nzoia and South Nyanza having averages of 1.2, 3.37, 1.0 and 1.03 indicating that most of this firms do not operate with the aim of maximizing profits. As with the case of Miwani Sugar Company the findings point out to gross miss conduct by those charged with the responsibility of managing the institution since the average operating ratio for the company is 27.404. However two Sugar manufacturing companies, Mumias and West Kenya had exemplary averages of 0.88 and 0.799 which according to Mohammad (2012), are within the range of efficiency portrayed by manufacturing firms since some operating expenses are inevitable as long as production is ongoing.

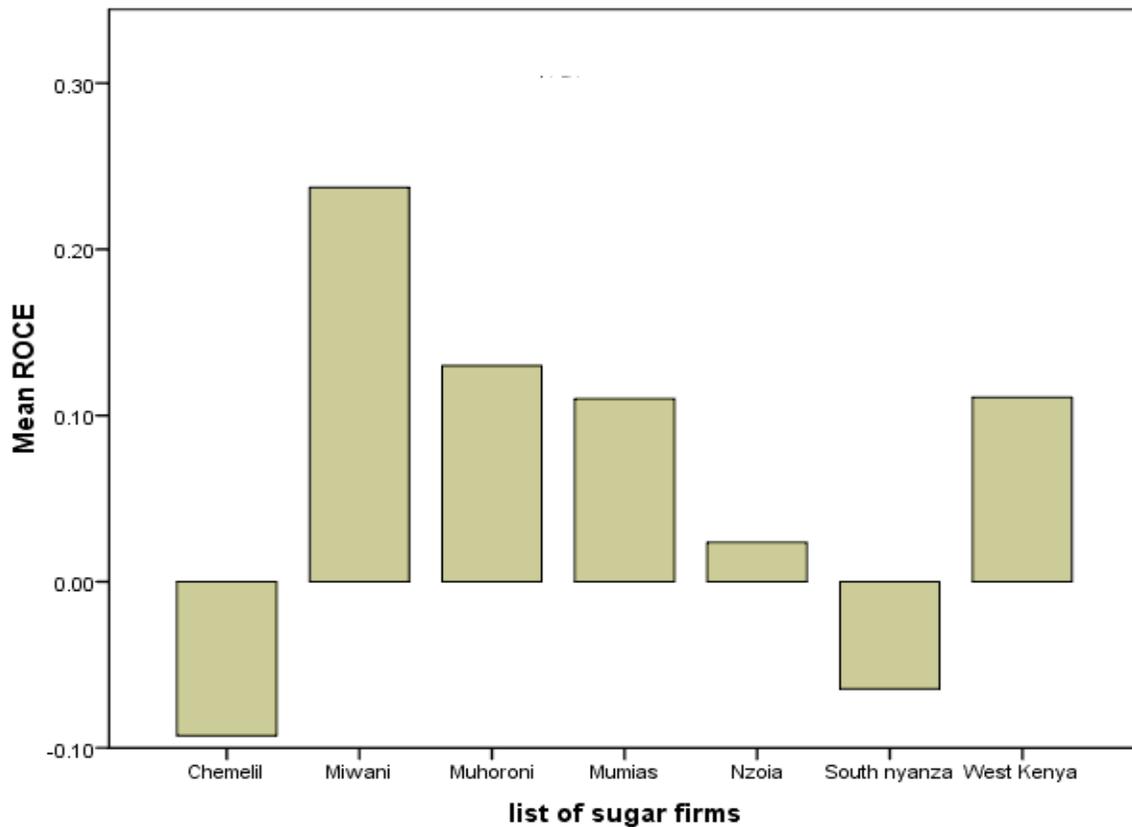


Figure 4.7 Return on capital employed data.

The return on capital employed is a profitability ratio that measures how efficiently a company can generate profits from capital employed, (Mayo, 2011). Findings graphed in figure 4.7 indicate that sugar manufacturing firms are surprisingly more efficient than anticipated in generating revenues from capital employed with companies such as Miwani, and Muhoroni leading with averages of 0.218 and 0.13 this can be attributed to the efforts of the receiver managers to pay off the debt owed by these firms. The remaining firms were not as efficient as the two with Mumias, Nzoia, and west Kenya having averages of 0.11, 0.02 and 0.116 which translates to, as for the case of Mumias sugar company that the company made eleven cents for every shilling of capital, while Nzoia sugar company made only two cents for every shilling

invested and lastly West Kenya made on average twelve cents for every shilling employed in production. The other remaining firms were unable to utilize their capital employed profitably with Chemelil and South Nyanza sugar companies having averages of -0.09 and -0.06 per shilling employed which according to Nour, (2011) a negative return on capital employed implies that the company has been making persistent losses and cannot be turned around under the prevailing market conditions.

4.3 Inferential Statistics

The inferential statistics used were the simple regressions, factor analysis, multiple regression, and correlation analysis. Tests were conducted at $\alpha=0.05$ and $\alpha=0.01$.

4.3.1 Heteroskedasticity test results

The study tested for panel level heteroskedasticity using the cook-Weisberg test for heteroskedasticity. The null hypothesis of this test was that the error variance is all equal versus the alternate hypothesis that the error variances are a multiplicative function of one or more variables. Findings indicate that in all the regression carried out the p-value exceed 0.1 hence the researcher failed to reject the null hypothesis to signify that there was no heteroskedasticity problem with the data as indicated in the table below.

4.3.2 Effect of Financial Gearing on Financial Performance

A simple regression was used to examine the nature of relationship between Financial Gearing and each of the Performance measures Gross profit margins, Net profit margin, Operating ratio and ROCE.

Table 4.2: Effects of Financial Gearing on Performance

	GPM	NPM	Operating ratio	ROCE
Intercept	0.401	0.351	0.599	0.426
Beta (β)	-0.639**(-3.841)	-0.594**(-4.693)	0.639**(3.841)	-0.730**(-5.168)
Adjusted R ²	0.251	0.339	0.251	0.385
R ²	0.269	0.355	0.2.69	0.4
SE of regression	0.166	0.127	0.166	0.141
F statistics	14.753	22.02	14.753	26.713
Prob. (F statistics)	0	0	0	0
Chi2(1)	0.88	1.36	2.44	1.54
Prob> chi2	0.3478	0.2444	0.1182	0.2139

Note: ** Significant at $\alpha=0.01$

t statistic given in parentheses

The model fit measures indicated that the model explained 0.251, 0.339, 0.251, and 0.385 of the variation in each of the dependent variables, respectively. Further, ANOVA test resulted in significant F-values of 14.753, 22.02, 14.753, 26.713 in each dependent variables respectively, which were highly significant indicating linearity in the relationship between gearing and financial performance proxies. Thus the slope parameter which enables the prediction performance were found to be negative with respect to Gross profit margin, Net profit margin, and ROCE ($\beta=-0.639,-0.594,$ and $-0.730,$ respectively) while positive in relation to Operating ratio ($\beta=0.639$) implying that an increase in financial gearing had a negative impact on the profitability of sugar manufacturing firms. These findings were consistent with the findings of Abor (2005a) where the study findings indicated that small and medium enterprises that were highly geared were unable to remain profitable due to the adverse effect of debt on their cash flows.

These findings were found to be against the capital structure irrelevancy theory that was first postulated by Modigliani and Miller (1958). These traditional capital structure theories argue that the amount of debt in the capital structure does not affect performance and the value of the firm. Abdul (2012) however, concluded that financial gearing has a significant negative relationship with a firm's performance as measured by gross profit margin, net profit margin and ROCE. The findings of this present study collaborate the empirical results obtained by Mwangi *et al* (2014) who opined that financial gearing has a significant negative relationship on the financial performance of firms listed at the Nairobi securities exchange.

4.3.3 Relationship between Weighted Average Cost of Capital and Financial Performance

Table 4.3: Effects of WACC on Performance

	GPM	NPM	Operating ratio	ROCE
Intercept	0.025	-0.021	0.975	0.010
Beta (β)	0.016**(12.272)	0.016**(14.990)	-0.016**(-12.272)	0.014**(10.142)
Adjusted				
R ²	0.742	0.811	0.742	0.662
R ²	0.747	0.815	0.747	0.669
SE of				
regression	0.001	0.001	0.001	0.001
F statistics	150.612	224.709	150.612	102.855
Prob. (F				
statistics)	0	0	0	0
Chi2(1)	0.00	0.18	0.06	0.12
Prob>chi2	0.6732	0.6732	0.8083	0.7246

Note: ** Significant at $\alpha=0.01$

t statistic given in parentheses

Table 4.3 shows the effect of weighted average cost of capital on financial performance of sugar manufacturing firms in Kenya. The findings indicate that WACC had R² values of

0.742, 0.811 and 0.662 in relation to profitability measures of Gross profit margin, Net profit margin, and ROCE respectively. WACC also accounted for 0.742 of the total variation of operating expenses relative to firm revenues indicating that weighted average cost of capital accounted for 74.2%, 81.1% 74.2% and 66.2% of the variance in financial performance. Further, the results showed that WACC decreases were associated with decreased profitability levels ($\beta=0.016$, 0.017 and 0.014 for Gross profit margin, Net profit margin and ROCE respectively). Whereas this may seem counterintuitive, it is in fact supported by the fact that since most of these firms had heavy debt burden that exceeded their companies' equity shares thus leaving them with negative WACC from conventional computations. However, the relationship between WACC and Operating ratio was found to be negative implying that an increases in WACC predicted decreases in management efficiency as measured by operating ratio of ($\beta=-0.016$). This may be explained by the fact that thin capitalization in these firms significantly increased the financing expenses associated with debt thus increasing the firm operating ratio which signifies decreased management efficiency.

The above findings are in line with the findings of Sanford, (2009) who noted that investors providing equity capital were in more risky position as opposed to those providing debt since owners are residual claimants of company's net cash flows. These findings collaborate the works of Nour, (2012) where the findings indicate that Palestinian firms had lower cost of capital due persistent used of debt which in the long run affected their ability to remain profitable due to liquidity crisis in these firms.

4.3.4 Effect of Debt to Equity Ratio and Financial Performance

Table 4.4: Effects of Debt/Equity Ratio on Performance

	GPM	NPM	Operating ratio	ROCE
Intercept	0.173	0.132	0.827	0.010
Beta (β)	-0.082**(-4.170)	-0.072**(-4.776)	0.082**(4.170)	-0.097**(-6.132)
Adjusted				
R ²	0.286	0.347	0.286	0.472
R ²	0.303	0.363	0.303	0.485
SE of				
regression	0.020	0.015	0.020	0.016
F statistics	17.385	22.810	17.385	37.607
Prob. (F				
statistics)	0	0	0	0
Chi2(1)	2.40	0.29	1.86	0.38
Prob>chi2	0.1215	0.5917	0.1725	0.5390

Note: ** Significant at $\alpha=0.01$ t statistic given in parentheses

The final simple regression analysis related the effect of Debt to Equity ratio on financial performance of sugar manufacturing firms. Findings indicate that debt to equity accounted for 30.3%, 36.3% 30.3% and 48.5% of the total variance among financial performance proxies of gross profit margin, net profit margin operating ratio and return on capital employed implying that there were other factors that were involved influencing the financial performance of sugar manufacturing firms in Kenya which the Scopin report, (2012) identifies as sugar poaching, political interference and illegal importations of sugar and its byproducts.

The findings further found out that debt to equity ratio had negative effect on financial performance as measured by beta coefficient of -0.082 ,-0.072-0.082 and-0.072 for gross profit margin, Net profit margin and return on capital employed. It can therefore be concluded that that increases in Debt/Equity ratio was associated with decreases in Gross profit margin, Net profit

margin and ROCE. These findings are in line with the findings of Maina and Kondongo (2013), where the study found a significant negative relationship between debt to equity ratio and measures of financial performance. These results contradicted the Agency theory by Jensen and Meckling, (1976) where debt was viewed as disciplining tool which enhanced management efficiency since increase in debt to equity ratio resulted in a higher operating ratio which signifies low management efficiency

4.4 Correlation Analysis

Table 4.5: Correlation between Capital Structure and financial Performance

		Gearing	WACC	Debt/Equity ratio	GPM	NPM	Operating ratio	ROCE
Gearing	r	1						
	p	0						
	n	53						
WACC	r	-.437**	1					
	p	0.001						
	n	55	55					
Debt/Equity ratio	r	-.697**	-0.076	1				
	p	0	0.59					
	n	55	55	55				
Gross profit margin	r	-0.205	.864**	-0.22	1			
	p	0.14	0	0.114				
	n	55	55	55	55			
Net profit margin	R	-.429**	.903**	0.024	.872**	1		
	p	0.001	0	0.867	0			
	n	55	55	55	55	55		
Operating ratio	r	0.205	-.864**	0.22	-1.000**	-.872**	1	
	p	0.14	0	0.114	0	0		
	n	55	55	55	55	55	55	
ROCE	r	-0.092	.818**	-.424**	.848**	.661**	-.848**	1
	p	0.511	0	0.002	0	0	0	
	n	55	55	55	55	55	55	55

Note: ** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.5 establishes correlation according to Pearson's matrix between capital structure proxies represented by financial gearing, WACC, and debt to equity ratio against performance proxies represented by gross profit margin, net profit margin, operating ratio and return on capital employed.

The variable financial gearing measures the long term debt to asset ratio. The results show a significant negative correlation between financial gearing and net profit margin ($r=-.429$) at 99% confidence level, while the correlations between gearing and other financial performance proxies were not significant. Thus gearing correlated with gross profit margin at ($r=-0.205$), ($r=-0.092$) with ROCE and positively with Operating ratio at($r=0.205$,). This due to increased administrative and financing expenses associated with more debt among the sugar manufacturing firms in Kenya. These findings are consistent with the findings of Khan *et al*, (2013) where firms that were highly geared were unable to remain profitable due increased production costs and increased administrative financial expenses associated with debt. These findings further collaborate with the strategic trade of theory by Jensen and Meckling, (1967), which postulates that firms should inject an optimum amount of debt in their capital structure if they were to remain profitable.

The findings indicate that weighted average cost of capital had a strong positive correlation with gross profit margin, net profit margin and return on capital employed with Pearson's correlation coefficient of 0.864, 0.903 and 0.818 for gross profit margin, net profit margin, and return on capital employed.

These findings are in line with the findings of Stanford, (2006) and Eljelly, (2004) where injection of debt in the capital structure of a firm lowered the firms cost of capital and enhanced its profitability. However the correlation results between weighted average cost of capital and

operating ratio did conform to the classic capital irrelevancy theory this is attributed to poor economic conditions in the Kenyan economy where increased debt resulted in lower management efficiency due to restrictive debt covenants.

The findings further indicate that there exists a strong negative correlation between debt to equity ratio and return on capital employed among the sugar manufacturing firms in Kenya. This is attributed to effect that debt had on equity holders in a company in the form of reduced earnings in both dividends and residual earnings. These findings are in line with the findings of Abor, (2007) increase in debt had a significant negative effect of financial performance of small and medium enterprises in Ghana. The correlation between debts to equity ratio and other financial performance measures was not significant implying that debt to equity ratio did not have an adverse effect on gross profit margin, net profit margin and return on capital employed among the sugar manufacturing firms in Kenya. These findings confirmed the findings of Iorpev and Kwanum, (2012) who found a negative and insignificant relationship between debt and equity ratio and financial performance of firms listed on the Nigerian stock exchange.

4.5 Multiple Linear Regression Analysis

Multiple regression analysis was carried out to examine the effect of capital structure on financial performance of sugar manufacturing firms in Kenya. The purpose of multiple linear regressions was to establish a quantitative relationship between a group of predictor variables and a dependent variable. This relationship is useful for: Understanding which predictors have the greatest effect; knowing the direction of the effect (positive or negative); and using the model to predict future values of the response when only the predictors are currently known.

The study examined the effect of capital structure decisions among sugar manufacturing firms denoted by financial gearing, weighted average cost of capital and debt to equity ratio which

were the dependent variables against financial performance measures of gross profit margin, net profit margin and return on capital employed.

The study examined the effect of Multicollinearity on the regression models using the variance inflation factor for the independent variables (VIF) analysis. Multicollinearity is the undesirable situation where the correlations among the independent variable are strong; it refers to actual disparity percentage to total disparity among variables. According to Mohamed (2012), if the VIF factor is less than 5 then there is no Multicollinearity problem. The findings indicate that the mean variance inflation factors for the independent variables was 2.93 implying that there was no Multicollinearity problem since independent variables did not have variance inflation factors (VIF) that exceeded 5.

The study further analyzed the regression results for presence of auto correlation using the Durbin Watson test statistics. The findings indicates that the regression models do not have a problem of auto correlation since the models Durbin Watson test statistics did not exceed 3 which according to Alsaeed, (2005) is desirable since regressions models with the Durbin Watson test statistics of less than 3 indicate that the problem of autocorrelation does not exist.

4.5.1 Hausman test

According to Green, (2011) dataset that contains observations that were observed over two or more time periods are known as panel data and can be analyzed statistically by either the fixed effect regression models or the random effect regression models.

Woodridge (2009) describes a fixed effect model as one where omitted variables are controlled over a time period while the random effect model is described as one where the omitted variables are constant over time but vary over cases. According to Green, (2011) the most

appropriate tool to choose between the random effects model and fixed effects model in regression analysis is through the use Hausman test.

The study conducted a Hausman test in order to choose between the fixed and random effects model for gross profit margin regression model. The null hypothesis of the Hausman test was that the fixed effects model was preferred to the random effect model (Wooldridge, 2009). For the gross profit margin model, the Hausman test reported a chi-square of 1.07 with a p-value of 0.9566 implying that at 5 percent level of significance, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that the fixed effects model was preferred to the random effects model for gross profit margin as recommended by Greene (2008). Thus the study used the fixed effect regression for analyzing the effect of capital structure on gross profit margin.

The study conducted a Hausman test in order to choose between the fixed and random effects model for model 2 (net profit Margin), where the null hypothesis was that the preferred model was random effects against the alternate hypothesis where fixed effects was preferred (Green, 2011). The Hausman test reported a chi-square value of 1.00 with a p-value of 0.9628 implying that the chi-square value was statistically insignificant at 5 percent level of significance. Hence the researcher did not reject the null hypothesis and adopted the random effects model as recommended by Green (2011).

The study further examined the Hausman test chi-square values for the regression results between fixed effects model and random effects models for operating ratio. The null hypothesis was that the fixed effect model was preferred to the random effects model. The Hausman test reported a chi-square of 105.61 with a p-value of 0.00 implying that at 5 percent level, the chi-

square value obtained was statistically significant. The researcher therefore rejected the null hypothesis that the fixed effects model was preferred to the random effects model.

The study examined whether to choose between the fixed and random effect model for model 4 (ROCE), the null hypothesis was that the random effect model was preferred to fixed effects model. The Hausman test reported a chi-square value of 0.99 with a p-value of 0.9631 implying that the chi-square value was statistically insignificant at 5 percent level of significance. Hence the researcher did not reject the null hypothesis that random model was preferred to fixed effect model for ROCE models recommended by Green (2008).

Table 4.6: Regression results for Gross profit margin

Gross profit margin	Coefficient	Standard error	T	P> Z	[95% Conf. Interval]
Gearing	-0.3203656	0.2052623	-1.56	0.125	-0.7333 0.092568
Wacc	0.01542	0.0025745	5.99	0.000	0.0102408 0.0205991
Debt to equity ratio	0.003456	0.0233353	0.15	0.883	-0.0434886 0.0504006
Constant	0.3120612	0.1654851	1.89	0.066	-0.0208519 0.6449743
F test	F(4, 47) = 5.26				
Prob > F	0.0014				
Durbin Watson	1.233				

Findings in table 4.6 indicate that the coefficient of financial gearing was -0.3203656 with a p-value of 0.125 which is less than 0.05 hence statistically significant implying that as more units

of debt were injected into the capital structure of sugar manufacturing firms this firms incurred huge operating cost that translated into higher cost of goods sold which limited their ability to generate profits.

The weighted average cost of capital had coefficient of 0.01542 with a p-value of 0.00 which was statistically significant at 5 percent level of significance. this signifies the importance of the cost of capital in enhancing corporate profitability hence due negative cost of capital associated with the sugar manufacturing firms they were unable to attract worthy investor to invest in profitable ventures hence care should be taken to ensure that these firms have attractive weighted average cost of capital as it has the most significant effect on financial performance compared to gearing and debt to equity ratio.

The sugar industry had a coefficient of 0.003456 with a p-value of 0.883 which was statistically insignificant at 5 percent level of significance. The results indicate that there was insignificant negative relationship between debt to equity ratio and financial performance of sugar manufacturing in Kenya. Thus as more debt was included in their capital structure visa vie their equity holdings this firms were unable to remain profitable as opined by Gunzeh (2013).

The findings indicate that fixed effect within regression was appropriate for data analysis since the prob > F was 0.0060 which was less than 0.05 hence statistically significant as opined by Mwangi (2014). The findings further indicate that 70 percent of the variance was due to differences across panels while the remaining 30 percent was due to differences within the panels.

These findings imply that weighed average cost of capital plays a monumental role in the profitability of sugar manufacturing firms since all investments made by these firms should have returns that exceed their costs to be profitable.

These findings were consistent with the capital structure irrelevancy theory that was first postulated by Modigliani & Miller (1958). These traditional capital structure theories argue that the amount of debt does not affect performance and value of the firm. Abdul (2012) however concluded that financial gearing had a significant negative relationship with the firm's financial performance as measured by gross profit margin. These findings contradict the empirical results obtained by Mwangi et al (2013), who concluded that financial gearing is negatively to financial performance as measured by gross profit margin.

Table 4.7: Regression results for Net profit Margin

Net profit margin	Coefficient	Standard error	T	P> Z	[95% Conf. Interval]
Gearing	-0.0280604	.2351542	-0.12	0.906	-0.0976519 0.0938335
Wacc	0.0183857	.0029494	6.23	0.000	0.012881 0.0229957
Debt to equity ratio	0.0011703	.0267336	0.04	0.965	0.673 -0.0239111
Constant	0.0104018	0.1895844	0.05	0.956	-0.1295217 0.0961646
Wald chi2(3) prob> chi2 Durbin Watson	81.26 0.00 1.252				

The regression results in table 4.7 indicate that the coefficient for financial gearing was -0.280604 and was statistically insignificant at 5 percent level of significance with a p-value of 0.906. The results indicate that there was an insignificant negative relationship between financial leverage and financial performance of sugar manufacturing firms in Kenya as measured by net profit margin.

Table 4.7 indicates that weighted average cost of capital was significant at 5 percent level of significance. The coefficient for the weighted average cost of capital was 0.018356 with a p-value of 0.000 which is less than 0.05. These results indicate that there was a significant positive relationship between weighted average cost of capital and financial performance of sugar manufacturing firms as measured by net profit margin. The positive coefficients indicate that as lowering the cost of capital to optimal levels could result to enhanced financial performance among the sugar manufacturing firms in Kenya. These results were inconsistent with Afza and Nazir (2007) who found a negative relationship between weighted average cost of capital and financial performance as measured by net profit margin. In addition these findings contradicted the findings by Vahid and Mohsen (2011) who concluded that aggressive financing resulted in higher weighted average cost of capital which may negatively affect the firm's financial performance as measured by net profit margin.

Table 4.7 indicates that debt to equity ratio was statistically insignificant at 5 percent level of significance. The coefficient of debt to equity ratio was 0 .0011703 with a p-value of 0.965 which was greater than 0.05. This indicates that there was a statistically insignificant positive relationship between to debt to equity ratio and financial performance as measured by net profit margin among sugar manufacturing firms in Kenya. These observation implies that holding other variables in the regression constant a unit increase in debt to equity ratio led to 0 .0011703 increase in financial performance of sugar manufacturing firms in Kenya as measured by gross profit margin. These findings indicate that using more debt in the capital structure of sugar manufacturing firms has contributed to the poor financial performance exhibited by the sub sector as measured by net profit margin.

The findings of this study are consistent with the Modigliani and Miller (1958) who opined that capital structure decisions had an insignificant effect on financial performance and value of a firm since the value of a firm was as result of its profitable investments.

Table 4.8: Regression results for Operating ratio

Operating ratio	Coefficient	Standard error	Z	P> Z	[95% Conf. Interval]
Gearing	-0.1088134	0.062218	-1.75	0.080	-.2307584 .0131316
Wacc	-0.019591	0.033698	-5.81	0.000	-.0261956 -.0129863
Debt to equity ratio	-0.0150658	0.0205501	-0.73	0.463	-.0553432 .0252116
Constant	1.104303	0.0738176	14.96	0.000	.95962311.248983
Wald chi2	47.29				
Prob > chi2	0.0000				
Durbin Watson	1.233				

The regression results in table 4.8 indicate that the coefficient for financial gearing was - 0.1088134 and was statically significant at 5 percent level of significance with a p-value of 0.080. The results indicate that there was a significant negative relationship between financial gearing and financial performance of sugar manufacturing firms in Kenya as measured by operating ratio. These findings imply that increase in debt resulted in higher levels of management inefficiency as measured by operating ratio. These findings are consistent with capital structure relevance theories. The results also corroborate the empirical evidence obtained

by kaumbuthu (2011) who found a negative relationship between financial gearing and operating ratio. The findings however contradict the findings by Javed and Akathar (2012) who found the relationship between financial gearing and operating ratio to be significantly positive. The findings additionally contradicted the agency theory postulated Jensen and Meckling (1976) and Elliotts (2002).the agency theory postulated that the use of gearing in the capital structure can be used to mitigate the agency conflict by forcing managers to invest in profitable ventures that benefit the shareholders.

The regression results presented in table 4.8 indicate that the coefficient for weighted average cost of capital was -0.019591 and was statistically significant 5 percent level of significance. The results indicate that there was a statistically significant relationship between weighted average cost of capital and financial performance of sugar manufacturing firms as measured by operating ratio.

Debt to equity ratio had a coefficient of -0.0150658 and was statistically significant at 5 percent level of significance with p-value of 0.463 implying that holding other variables constant increase in debt to equity ratio accounted for lower levels of management efficiency among the sugar manufacturing firms.

These findings collaborated with the findings of Siro (2013) where higher amounts of debt in the capital structure of firms listed at the Nairobi securities exchange resulted in poor financial performance as measured by operating ratio. This was due to the presence of creditors in management who hindered the firm's ability to make additional but risky profitable investments that put their initial investment in jeopardy hence there was a need to increase more capital injections rather than borrowing as the benefits associated with debt financing in terms of saving advantage were less than the debt interest and administration expenses associated with debt.

Table 4.9: Regression results for return on capital employed

Net profit margin	Coefficient	Standard error	Z	P> Z	[95% Conf. Interval]
Gearing	0.0092416	0.0490206	0.19	0.850	-.0868369 .1053202
Wacc	0.0181582	0.0025909	7.01	0.000	.0130802 .0232361
Debt to equity ratio	0.0073552	0.0156072	0.47	0.637	-.0232343 .0379448
Constant	-0.0248856	0.057783	-0.43	0.667	-.1381381 .088367.
Wald chi2(3)	79.67				
Prob > chi2	0.0000				
Durbin Watson	1.252				

Table 4:9 represents the effect of capital structure decisions on financial performance of sugar manufacturing firms in Kenya as measured by return on capital employed. Findings indicate that coefficient for total financial gearing was 0.0092416 and was statistically insignificant at 5 percent level of significance. Although there is a positive relationship between financial gearing and return on capital employed, it is insignificant at 5 percent confidence level. This consistency with the findings of Kavindu (2013) this lack of significance can be explained by improved financial performance by Mumias and West Kenya sugar manufacturing firms whose positive contribution does not have a huge impact on the entire subsectors performance.

Weighted average cost of capital had a coefficient of 0.0181582 with p-value of 0.000 hence statistically significant at 5 percent level of significance. Indicating that lower cost of capital accounted for enhanced utilization of capital employed due to presence of creditors in

management to oversee that their operations in these firms was carried out in a manner that will ensure that their investment are fully realized. These findings further show that debt to equity ratio had a positive coefficient of 0.0073552 which was statistically insignificant with p-value of 0.637 indicating that as more debt was injected into the capital structure of sugar manufacturing firm these firms unable to utilize capital acquired to invest in more profitable projects this was due to presence of restrictive loan covenants that guard against in unspecified but profitable ventures. These findings however contradict the findings of Javed and Akathar, (2012).

4.6 Discussions

4.6.1 Effect of financial gearing on financial performance

According to the study, Financial Gearing had negative effects on the financial performance of sugar manufacturing firms in Kenya. Various tests performed all confirmed existence of adverse effects of financial gearing on financial performance. Simple regression analysis consistently showed that financial gearing negatively related with all the profitability measures. Financial gearing also related positively with Operating ratio implying that increased gearing increased the firms operating costs hence lower profits . These results were also confirmed by correlation analyses that showed negative relationship between financial gearing and all the financial performance proxies with the exception of operating ratio. The positive correlation between financial gearing and operating expenses ratio was due to increased financing costs associated with debt.

The results then are in line with Sheikh and Wang (2013) findings which concluded that overleveraging leads to increased lenders' influence which in turn limits the management ability to manage the operations effectively, hence negatively affecting the firm's ability to generate surplus revenues.

4.6.2 Relationship between weighted average cost of capital and financial performance

The study found that there existed a statistically significant relationship between weighted average cost of capital and financial performance of sugar manufacturing firms in Kenya. The various tests performed indicate that the weighted average cost of capital was a key ingredient in determining the success or failure of an enterprise. Firms that had very low weighted average cost of capital experienced poor financial performance as was the case for Muhoroni, and Miwani sugar companies where the government has started the process of liquidating these firms. As for Mumias and West Kenya sugar companies the study showed that these firms had positive and robust weighted average cost of capital which translated into superior financial performance compared to their peers in the Kenyan sugar subsector.

These findings did not corroborate the findings of Chen, (2004) where Chinese firms that had higher cost of capital were unable to remain profitable since the high rate at which investment projects were discounted meant that huge sums of money were required to pay the supplier of funds which affected their free cash flow.

4.6.3 Effect of debt to equity ratio and financial performance of sugar manufacturing firms

Regarding the effect of debt to equity ratio on financial performance of sugar manufacturing firms in Kenya. The study found that there existed a negative relationship between debt to equity ratio and financial performance of sugar manufacturing firms in Kenya. This implies that higher debt to equity ratios were associated with poor financial performance witnessed in the Kenyan sugar subsector, echoing the sentiments aired by Kavindu, (2013) where higher debt to equity ratio was the main cause of continued poor financial performance by sugar manufacturing firms in Kenya. Consequently, the study concluded that while reduction of taxes has long been recognised as the motivating factor which induces firms to inject debt instruments into their capital structures, due

to the effect of debt on taxation where debt lowers the amount of taxes paid to the government .
the additional bankruptcy costs associated with increased debt to equity ratio outweighs the tax
advantages associated with increased debt

CHAPTER FIVE

SUMMARY, OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study, draws conclusion from such findings, makes recommendation based on the results of the study and finally points to areas where more research is needed

5.2 Summary of the Findings

The general objective of the study was to examine the effects of capital structure decisions on the financial performance of sugar manufacturing firms in Kenya. The study was limited to licensed sugar manufacturing firms operating in Kenya.

The researcher was able to analyze data covering a period of eleven years from the year 2000 to 2010 from the available published financial statements of sugar manufacturing firms representing 100% of the available data. The majority of the sugar manufacturing firms (71.4%) were government owned sugar manufacturing firms while 28.5% was represented by privately owned sugar manufacturing firms.

The findings indicate that sugar manufacturing firms in Kenya are heavily geared which implies that the greatest proportion of their assets were financed by debt. Most of the sugar manufacturing firms under study exhibited negative weighted average cost of capital this was attributed to the presence of negative equity among the ailing millers which implies that investing in these firms would result in huge financial losses. In term of debt to equity ratio the findings indicate a huge disparity between the choice of debt to equity between privately owned sugar manufacturing firms and state parastatals. State owned parastatals preferred to finance

their business operations injecting more debt in their capital structure while privately owned sugar manufacturing were more cautious with the use of debt preferring to finance their undertakings through internally generated reserves.

In terms of profitability, findings indicate that the industry was in financial crisis since the most profitable firm in the subsector had lower gross profit and net profit margins than anticipated. The findings indicate that most of the state owned parastatals were incurring losses which were attributed to high cost of production and use of obsolete technology in production. In regards to financial performance proxies of operating ratio and return on capital employed (ROCE) findings indicate that the sugar manufacturing firms had poor management efficiency which affected their ability to invest the capital in more profitable projects hence having low ROCE.

The study established that financial gearing had a significant negative effect on all the financial performance proxies used in the study implying that the use of more debt to finance long term assets had lowered the firm's ability to generate revenues. The study found a positive significant positive linear relationship between weighted average cost of capital and financial performance proxies. The findings indicate that lower costs of capital enhanced financial performance of sugar manufacturing firms due to presence of strict debt covenants.

The study further examined the effect of debt to equity ratio on financial performance of sugar manufacturing firms in Kenya. The findings indicate that there exists a significant negative correlation between debt to equity ratio and financial performance of sugar manufacturing firms implying that if sugar manufacturing firms continued injecting more debt in their capital structure these firms will incur more losses beyond what the industry is witnessing.

The study carried out multiple regression analysis in order to ascertain which of the independent variables had the most profound effect on financial performance. Findings indicate that the weighted average cost of capital had the most statistically significant effect on all the financial performance proxies compared to both financial gearing and debt to equity ratio. The study further established that higher debt to equity ratio had a negative effect on financial performance of sugar manufacturing firm in Kenya contradicting the capital irrelevancy theorem as opined by Modigliani and Miller (1958).

5.3 Conclusions

The study concluded that increases in financial gearing had a negative effect on financial performance as measured gross profit margin and net profit margin. The study therefore concluded that the agency theory which postulates that financial leverage mitigates against the agency problem is not applicable among the sugar manufacturing firms. The study established that as a company increases their financial gearing financial performance as measures by gross profit margin and net profit margin contrary to expectations based on agency theory.

The study found out that sugar manufacturing firms used both debt and equity in their capital structure although debt was predominant. This was largely due to the fact that sugar manufacturing firms perceived debt as a cheaper source of financing that lowered their weighted average cost of capital and the taxes paid. The study therefore concluded that the assumptions of the Moldgani and Miller (1968) where they argue that increased in debt resulted in improved financial performance due the tax shielding effect of debt does not hold since increases in debt had a negative impact on the weighted average cost of capital which has a negative correlation with gross profit margin and return on capital employed

The results of this study show a negative correlation between financial performance and debt to equity ratio. Long term debt is more expensive due to certain direct and indirect costs therefore employing high levels of debt results in low profitability. On the basis of these findings it can be concluded that profitability is consistent with the pecking order theory where firms will first use internally generated funds, the debt and lastly issue more units of equity to finance their investments. In light of the above discussion we can say that the existing theories of capital structure contribute to some extent on the choice of capital structure employed by sugar manufacturing firms.

5.4 Recommendations

Stemming from the study findings, the following recommendations were made in regard to the sugar manufacturing sector in Kenya:

Heavily geared sugar manufacturing firms should use capital budgeting techniques such as the modified rate of return, accounting payback period and the net present value to ensure that the assets financed by the borrowed funds bring in a higher return than the interest the firm is required to pay on the debt. If this is not done, the firm will erode the reserves in order to pay the debt as the assets financed will not be making enough returns to cover the debt. The firm must select source of funding carefully to avoid falling into the leverage risk trap.

Sugar manufacturing firms should reduce dependence on debt as a source of finance since debt is usually accompanied by strict loan a covenant which limits their ability to invest in other projects and thus earn profits. This can be done through diversification of their operations into production of ethanol, electricity and cardboard from the baggage which will provide these firms

with separate cash flows that will be used for re-investment thus improving the weighted average cost of capital.

Government owned sugar manufacturing firms should be privatized in order to pave way for improved corporate governance which will enable the firm to be listed at the Nairobi stock exchange as the case was with Mumias sugar company hence be able to sell more units of equity to the public, while privately owned sugar firms such as West Kenya sugar firm should go public to enable them sell more units of equity to improve their debt to equity ratio.

5.5 Suggested Area for Further Study

The study therefore recommends an analysis to find out how very high leverage can be abused by the lenders to gain ownership of the public firms through security conversion when the firm is eventually sold at throw away price due to inability to service debt obligations. Such study should not only be limited to the sugar sector but also to other sectors. As such the public will be protected from predatory lending leading to firm losses and eventual sale at deeply discounted prices

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**APPENDIX 1: List of Sugar Manufacturing Firms in Kenya
Parastatal Factories**

- Nzoia Sugar Company t.
- South Nyanza Sugar Company.
- Muhoroni Sugar Company.
- Chemilil Sugar Company.

Private Companies

- Mumias Sugar Company.
- Kibos and Allied Sugar Company.
- Butali Sugar Company.
- Soin Sugar Company.
- West Kenya Sugar Company

Source; Kenya sugar board investments guide (2012)