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**IMPACT OF CAPITAL STRUCTURE ON THE FINANCIAL PERFORMANCE OF
MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES
EXCHANGE**

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I dedicate this research project to my family members and those who cherish knowledge acquisitions



Abstract

This study aimed to determine the relationship between capital structure and financial performance of firms listed under manufacturing at the Nairobi Securities Exchange. Return on Asset and Return on equity were used as the measures of firm performance while equity, Long-term Debt and retained earnings represented capital structure indicators. The study will cover the firms listed under manufacturing from 2019 to 2023. Correlational research was the design applied in this research. Data was obtained from the firms consolidated financial statement. The data was then analyzed using linear regression models using SPSS to establish if there is any significant relationship of capital structure and the financial performance. To gauge the effect of debt on performance, two regression models were estimated. In this case, the dependent variables are return on asset and return on equity. For each model, several regression analyses have been conducted whereby, in each one, one capital structure proxy had been included with the use of lag values for obtaining the best fitted relationship between performance and capital structure. Retained earnings showed a positive and significant relationship with ROA at 0.003, while Equity had a positive coefficient of 0.001 demonstrating a statistically significant positive effect on ROA. At the same time, Long-term debt had a negative coefficient of -0.003 which indicated an inverse relationship between long-term debt and ROA. The study also depicted that high levels of long-term debt negatively influenced both ROA and ROE. Firms are therefore recommended to maintain their optimal capital structure by avoiding high levels of debt and shifting to other available options for financing, such as equity or internal funding.

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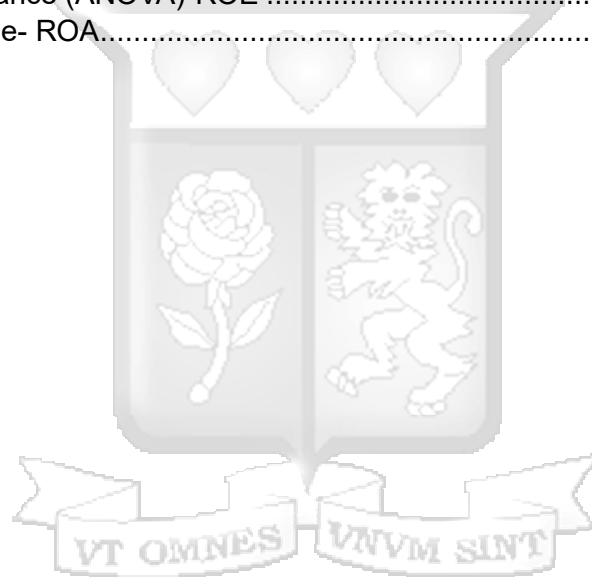
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LIST OF ABBREVIATIONS

CS-Capital Structure

EPS –Earnings Per Share

FP-Financial Performance

GDP-Gross Domestic Product

IPO-Initial Public Offering

KAM-Kenya Association of Manufacturers

LTD-Long Term Debt to Total Assets

NSE -Nairobi Securities Exchange

PM-Profit Margin

ROA-Return On Assets

ROE -Return On Equity

SEO-Seasonal Public Offering

STD-Short Term Debt to Total Assets

TDTA-Total Debt to Total Assets



CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Capital structure refers to the mix of debt and equity a firm uses to finance its productive assets, operations, and future growth (Martin, 2011). The capital structure would act as an immediate determinant for the overall costs of a firm, and would add up to the total level of risks. Different proportions of debt among mixed financing resources could impose major influences on the firm value and thus on the shareholder's wealth. (Martin, 2011).

A company's mix between its short-term versus long-term debt was considered while scrutinizing its capital structure. The debt-to-equity ratio is a measure of a firm's financial leverage. An aggressively financed company with heavy debt financing, therefore, poses a greater risk to investors and might well be the primary source of growth. Without funding a firm would not support its working capital requirement and fixed assets, thus funding makes a business exist.

Proper attention and consideration should be given to the point in the capital structure decision process that relates to attaining the purpose of increasing the firm's performance and shareholders' wealth because it affects the profitability of the firm. The right mix of finance would be opted for by the company, which would maximize the financial performance. (Abor, 2007). According to (Leon, 2013), the skill of a company to meet shareholders' interest, as well as deal with the competitive environment, was intimately connected to its capital structure.

Within the past decade, two studies on the effect of capital structure on listed firms at NSE were conducted with conflicting results: one concluded that capital structure has a positive effect on financial performance in respect to manufacturing firms, another summarizing that capital structure is negatively related to financial performance for the manufacturing firms listed at the NSE.

1.1.1 Capital structure and Firm Financial Performance

Capital structure refers to debt or equity finance, or both combined, as being the firm's components of the sources of financing. The listed assets of the company on the balance sheet may be purchased with either debt or equity. The capital structure of a company was related to ability to meet all the requirements by all the stakeholders; hence, was an important financial variable.

A company's capital structure was made up of the debt portion, which includes short-term borrowings and long-term debt, and two-thirds of the principal amount of operating leases and redeemable preference shares. Debt financing involves raising working capital through borrowings from outside the firm. A long-term debt is paid back in the range of one to five years while a short term debt has a repayment period of less than a year. (Blum, 2015)

Various studies done on debt financing resulted in inconsistent findings, (Ross, 1977) in support of (Hadlock & James, 2002) outlined that the more a firm chooses debt as its financing option the higher the likelihood of a positive firm performance. According to (Fama & French, 1998), debt financing had an indefinite relationship with firm performance because of lack of tax advantage of debt as a result of agency problems. A research on listed Companies in Taiwan found that debt financing is indirectly proportional to operating performance.

Listed firms access the Commercial banks as a main source for raising debt. The tax benefits were one of the reasons why businesses benefit from debt; the interest that is paid on loans might be deducted from taxes. Unlike equity, debt enables a firm or business to maintain ownership. Additionally, one can access and obtain debts easily during low interest rate periods. Drawbacks associated with debt financing are; cost of bankruptcy and conflict of interest between shareholders and debtholders.

Equity refers to a company's common and preferred stock plus retained earnings, it was the shareholder's claim on a company's future cash flows and profits. Unlike debt, equity doesn't have to be repaid. According to (Abdula & Zaby, 2021) equity financing involves IPOs and SEOs of stock issued by a corporation as a means of raising funds through the sale of stock rather than taking on further debt.

The debt and equity mix that maximizes shareholder wealth while incurring the least amount of expense is known as the optimal Capital structure. Since value for a business was created when it generates a return larger than its cost of capital, so in principle, the Optimal Capital structure should result in the minimum Cost of Capital of the whole enterprise. D/E ratio comes in handy while comparing capital structure by analysts. Financial performance was used as a comparison tool for firms in the same and different industries hence describes a company's financial health comprehensively. At the end of the financial period, financial performance of a firm can either be making profits, breaking even, or making losses. According to (Kopecka, 2015), return on asset, ROE or net profit in a particular period according to (Drury, 2017) were used to assess financial performance.

Indeed, for almost five decades now, research into the subject has failed to bring out any consensus among experts in Financial and Economists on the extent to which capital structure affects financial performance (Nyanga, 2012). From the shareholder's point of view, a firm's financial performance was derived using the financial ratios which were drawn from the income statement, cash flow statements and balance sheet or alternatively using data on the stock market prices. According to (Altan, 2014) the primary objective of shareholders was to increase wealth hence the measurement of the performance of a firm should provide an indication of how wealthier the shareholder has become as a result of the investment over some particular period of time.

1.1.2 Manufacturing Firms Listed at the Nairobi Securities Exchange

Manufacturing firms are those firms that convert mechanical, physical, or chemical materials into finished goods. (KAM K., 2018) manufacturing sector in Kenya is wide and divided into sub divisions; food products have the highest GDP contribution of 43 per cent of the entire manufacturing sector, (KAM K., 2018), and other sectors are; textile and apparel, non-metallic minerals, basic equipment among others. Some of the notable sub-sectors include tobacco products, beer and spirits, fruit canning, flour milling, and sugar refining. In 2010, the growth rate in manufacturing hit its zenith in Kenya at 5.8%. This was, however, still shy of the 10% growth rate that is envisioned under the Vision 2030 goal. The share of the manufacturing sector to GDP reduced from 9.2% in 2016 to 8.4% in 2017, yet it was supposed to reach a 15% share by 2022 as envisioned in the Big Four action plan to uplifting manufacturing, essentially aimed at taking manufacturing to where it belongs—the driver of Kenya's economy (KAM K., 2018). Kenya

Budget Estimates 2018/2019: \$21 million was set aside in the 2018/2019 budget to generate over 800,000 jobs in the manufacturing sector.

The share prices rose from the beginning of 2016 due to the price gains realized from five of its nine actively traded manufacturing stocks. The manufacturing segment had an upper hand in performance over other segments like commercial and services, insurance, banking, energy, and construction.

The manufacturing sector is one of the drivers of the economy and contributes about 7.2 percent to the country's GDP. Most listed manufacturing firms at the Nairobi Securities Exchange had their financial performance dwindling, which in most cases was due to failure to pick the right mix of capital structure. For instance, Mumias Sugar posted pretax losses of 6.3 billion Kenya shillings in 2016, which caused it to close for almost three months. In 2017, the company continued to record losses of 6.8 billion Kenya shillings, and in 2018, it recorded losses of 15.1 billion Kenya shillings.

BOC Kenya PLC saw a 49% decline from 2016 to 2017, British American Tobacco Kenya PLC reduced its emission by 21% from 2016 to 2017 and 15% from 2015 to 2016., Carbacid Investment PLC saw an 18.7% decline from 2014 to 2015, and there was a 6.19% decline from 2016 to 2017. As of right now, the business has warned about its profits for (NSE, 2019).



1.2 Problem Statement

Capital structure made a big difference in the financial results of a firm only when it was well and efficiently used at an optimal level. Nonetheless, the most contentious topic in the financial community was still unresolved: what made for an optimal capital structure? (Kajola, 2010). Manufacturing was the third leading sector in terms of promoting economic growth and competitiveness in the country. This sector, however, experienced fluctuations over the years under different financial conditions; therefore, regarding the nature of a capital structure, there was no agreement on the profitability from both empirical studies and theoretical frameworks.

Proportions of equity and debt plays a crucial role in determining the financial performance of manufacturing firms, maintaining an optimal balance of the Capital structure ensured long term sustainability and competitiveness of these firms. The literature had a mix of findings on the uncertainty of the impact of both debt and equity on financial performance in manufacturing firms. Findings from various studies suggested that high leverage can enhance profitability while others do propose that excessive debt might cause financial distress and increased interest payments to the firms.

The absence of any sure formula for measuring the debt-equity ratio or liabilities and obligations, coupled with the conflicting conclusions on the influence of capital structure on a firm's performance, instigated us to carry out this study on the relationship between capital structure and firm's financial performance, focusing only on manufacturing firms listed at NSE. Clear understanding of optimal debt level for maximizing performance in NSE manufacturing firms is lacking.

Previous research made a substantial contribution to our comprehension of the connection between financial performance and capital structure. A comprehensive examination of the capital structure-performance relationship specific to NSE manufacturing firms was needed and Identifying the optimal debt level for maximizing performance in this context was crucial. Analyzing the relationship between different components of capital structure provided valuable insights, by utilizing research findings and making informed decisions when structuring listed companies 'capital.

This research would help fill the gap by identifying the optimal capital structure., so that companies could make informed decisions to enhance their financial performance and reduce financial risk and also bring up clear relationship between capital structure and financial performance.

1.3 Research objectives and Questions

1.3.1 Research Objectives

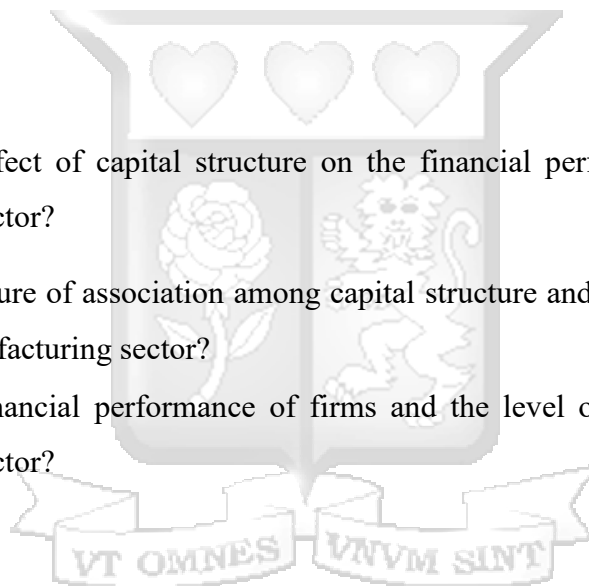
The general objective of this study is to assess the capital structure and financial performance of manufacturing firms listed at Nairobi Securities Exchange, Kenya.

Specific objectives are:

1. To establish the effect of equity financing on Return on Assets and Return on Equity of the manufacturing firms listed at the Nairobi Securities Exchange.
2. To establish the effect of long-term debt financing on Return on Assets and Return on Equity of the manufacturing firms quoted at the Nairobi Securities Exchange.
3. To establish the effect of retained earnings on Return on Asset and Return on Equity of the manufacturing firms quoted at the Nairobi Securities Exchange.

1.3.2 Research Questions

- What was the effect of capital structure on the financial performance of firms in the manufacturing sector?
- What was the nature of association among capital structure and financial performance of firms in the manufacturing sector?
- What was the financial performance of firms and the level of capital structure in the manufacturing sector?



1.4 Significance of the study

This study had a significant impact:

Achieving optimal financial performance, optimal mix of debt and equity could lead to profitability and sustainability over the long term.

Effective capital management could boost manufacturing firms minimize their cost of capital.

Understanding the risk implications of various financial options and how it was influenced by capital structure.

Business managers and executives could help to connect capital structure with company goals by gaining insights into the correlational analysis.

Investors would get a better knowledge of how capital structure could affect a company's long term financial stability and profitability and investors would be able to make more informed investment decisions

Policy Makers create policies that support beneficial and sustainable business practices using the research findings.

Academics and Researchers would be able to build on the results to investigate capital structure from fresh angles and its applications in the emerging markets



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presented the underlying theories relevant to the area of study and provided a conceptual framework that elucidates the influence of independent variables on the dependent variable. Other than that, it assesses the available empirical evidence by other researchers. It gave the summary of literature on capital structure determinants review, and finally showed the research gap. The rationale of the study would be to ascertain the effect of capital structure on the financial performance of manufacturing firms listed at the NSE. Relevant literature for the study was derived from various journals, texts, articles, and websites.

2.2 Theoretical literature review

2.2.1 Pecking Order Theory

The Pecking Order Theory was suggested by Donaldson in 1961, but its first rigorous theoretical foundation was received by (Myers & Majluf, 1984)). The theory asserts that there was an asymmetric information between insiders of a Company and the outside investors, and attempts to unfold manager's financial proclivity. It means that the cost of financing goes up with the degree of asymmetric information (Brennan & Kraus, 1987). Managers know the true position of a firm as far as the value is concerned compared to outside investors.

The assumptions of this theory were; the presence of a perfect market, Companies with high productivity rely more on internal funding than on debt. There was no specific capital structure, that is managers do not have a fixed capital structure (Nafees & Khan, 2017). This theory holds that retained earnings should be the first choice for financing, followed by debt financing, and, last of all, equity financing. This theory established a hierarchy for organizations to make their

financial decisions and specifies that companies would favor using internal sources of funds over external ones when funding is required.

Retained earnings thus bring in no additional flotation cost, nor was there any need and requirement to disclose any financial information that may be confidential. If the organization decided to seek outside funding, they would need to adhere to a set of guidelines, it involved debt financing, convertible securities, preferred stock, and then ordinary stock. Organizations need to focus on their own resources, or retained earnings.

The two primary merits of the Pecking Order Theory were that it assists in reducing the cost of equity and agency issues, and it also portrays the desire of the finance managers to maintain control of the company. The Pecking Order Theory had various important contributions on changes related to capital structure. It considers motivation from managers, and with this theory, firms could build dynamic capital structures.

The Pecking Order Theory had certain limitations, the first limitation was that it ignores factors like tax implications, the price of issuing new securities, agency costs, and the financial stability of investment opportunities. The second problem related to Pecking Order Theory was that it overlooks the problems associated with the decisions of financial managers to accumulate so much financial slack that they become protected to market discipline. It considers the impact of financial slack on the firm and the impact of availability of positive NPV of projects. Due to these limitations, Pecking Order Theory was referred to as complement rather than substitute of Static trade off theory.

The pecking order concept was applicable in the research since it advocates for retained earnings financing as the first option compared to other external financing due to the absence of associated overheads such as bankruptcy and transaction costs. The study sought to define the influence of retained earnings on financial productivity.

2.2.2 Trade off theory

The philosophy of tradeoff was advanced by (Robichek & Myers, 1966). The theory postulates that a firm ought to relate the cost of debt, for example, the debt overhang, it entails to its paybacks so as to establish the optimal capital structure and then enact this optimum, (Myers, 2016).

The theory assumes organizations were partially debt financed and partially equity financed. Some of the main assumptions made about trade-off theory include: capital markets were perfect; there were no taxes, agency, and transaction costs (Adairs & Adaskou, 2015). It suggests that debt financing was mostly done when a firm had a great level of tangible assets, and equity financing when it had a great portion of intangible assets. Therefore, the theory requires a firm to maintain an optimal debt–equity ratio (Al-Tally, 2014). Once the target debt equity ratio was reached the organization could use the financial performance effectively by comparing the projected costs with the anticipated benefits of using leverage (Bontempi & Golinelli, 2001).

The importance of trade-off theory lies in its ability to clarify how organizations were funded in part by equity and in part by debt. The cost of financial distress and agency fees rise in tandem with debt financing. Financial difficulty, according to (Shirata, 2012), was the result of an entity's inability to pay its debts on time, which might result in bankruptcy. (Brealey, 2018) pointed out that some of the signs of financial distress include the entity lacking cash, suppliers reducing trade credit, the firm borrowing up to its maximum, and the books of account showing continuous losses. Of course, such actions by the stakeholders towards the entity result definitely in a decline of the financial performance hence a fall in the value of the firm.

This theory does not consider non-financial factors such as firm's reputation and social responsibility. In a going concern scenario, the company might not have enough cash on hand to support all of its projects. As such, the theory contributed to the explanation of equity's impact and influence over financial performance.

2.2.3 Modigliani and Miller Theorem (MM Theory)

The Modigliani & Miller theorem dates back to the year 1958. This theorem stated that a company's capital structure was an irrelevant factor for its value, and this theorem was correct to determine a company's market value, which was unaffected due to its capital structure, as the present value of its future earnings and the underlying assets remain the same. According to this theory, capital structure and financing decisions might not always be related to a company's worth (Mostafa & Boregowda, 2014). Under ideal circumstances, a company's price and capital structure could be related because, in the case of financial leverage, debt holders get paid before shareholders.

(Miller, 1977) stated that they used a number of assumptions, among them that capital markets were perfect in the absence of bankruptcy and operating expenditures, that market data was symmetric, and that a company's income is not affected by liabilities arising from previous charges and taxes.

It should be noted that even if the capital market was perfect, there would still exist transaction costs, bankruptcy, asymmetric information, and debt effects on income before interest and taxes. The hypothesis was pertinent to the study, particularly in light of the first proposition, which contends that organizations will favor debt due to the tax shield effect because it is assumed that they will perform better than those without debt. This made sense of how long-term debt affected financial performance.

Modigliani asserts that debt would be effective in firms where there is a tax shield, which would be gained by deducting tax from interest, hence reducing the cost of capital (Miller, 1954). In such an incident, the cost of capital got reduced through the tax shield resulted from the deducting tax from interest. As explained by (Brigham & Gapenski, 1966) the cost of bankruptcy goes directly in proportion with the firm's debt level.

The capital structure would be taking an optimal level only when the cost of bankruptcy was equal to the tax-shielding benefits obtained from an increase in the debt level of the firm. The returns made from using equity are less than the returns a firm would have generated from mixed capital when an optimal capital structure has been reached, thereby maximizing shareholder returns (Iyoha & Uwuigbo, 2017).

2.2.4 Market Timing Theory

A firm's capital structure was a result of timing its equity issues according to the Market Timing Theory propounded by (Luu & Dang, 2022). There was no optimal structure asserted by this theory. This theory asserted that managers do a critical analysis, and they would issue new shares if they believe these shares were going to be overvalued. However, on the other hand, they would buy them back in times that they were undervalued (Baker & Wurgler, 2002).

This theory assumed that economic agents were rational and entities issue equity immediately after positive information was publicized since information asymmetry between management and the

stockholders was reduced. When information was shared regularly, the company might increase the stock prices, therefore timing opportunities were created.

Based on this hypothesis, managers should critically analyze the fund market and exploit in the presence of a knowledge gap. This was because information asymmetry could cost the business dearly in case investors mis-interpret the actions of the manager and charge him exorbitantly, thus affecting the performance of the business negatively. A firm generates its timing opportunities by frequently disclosing information. Because these changes in their market-to-book value are temporary, the firm could take advantage and raise capital at a relatively lower cost with equity rather than debt during those periods of fluctuations (Baker & Wurgler, 2002).

Accordingly, managers who issued or repurchased shares as a result of market volatility were not obligated to do so when the market reaches a reasonable valuation. Therefore, short-term variations in market-to-book might result in long-term adjustments to a company's capital structure.

2.2.5 Liquidity Preference Theory

(Keynes, 1936) created "The General Theory of Employment, Interest, and Money," which used supply and demand for money to infer liquidity factors. He argued that due to investors' willingness to hold less money in order for them to make a profit, they would lend their capital when the liquidities are high.

While investors chose short-term investments because they could be easily converted to cash with little principle loss, borrowers chose long-term debt since it removed the limitations of repaying the debt under unfavorable circumstances (Trinh, 2022).

2.3 Determinants of Financial Performance

A company with an optimal capital structure performs better financially. Liquidity, growth, and size of a firm were determinants of financial performance. Studies from a number of emerging markets in Southeast Asia provided evidence on the determinants of capital structure. (Pandey, Chotigeat, & Ranjit, 2002) (Pandey, 2001) (Annuar & Shamsher, 1993) .

Firm size

Larger organizations were more diversified, and hence, this should make them less likely to declare bankruptcy, and consequently, more eager for lenders to lend money to such organizations. Size thus could be considered as an inverse proxy for the likelihood of bankruptcy. As a result, the size of the company and leverage should be positively connected; the larger the company, the higher the debt (Titman & Wessels, 1988). This was because the cost of debt would be less due to advantages of economies of scale.

However, compared to smaller organizations, larger companies typically reduced informational asymmetries with outside investors. When they issue information-sensitive instruments like equities, they ought to charge investors less in agency fees as a result. Therefore, larger businesses ought to have an easier time raising cash through equity. Furthermore, the size of the company had an impact on the cost of issuing new instruments, both debt and equity. Smaller businesses find it far more expensive to issue new equity than do larger businesses, although the cost of issuing new debt is just marginally higher. As a result, smaller businesses might need to borrow more money than larger businesses, supporting a negative link (Titman & Wessels, 1988).

A study by (Bongoye, 2018), evaluated the effect of Capital Structure factors on the financial performance of enterprises listed on the NSE. His study, which involved a target of 37 non-financial businesses that were registered with the NSE, established that there was a positive and significant interaction between firm size and financial performance.

Liquidity

Liquidity refers to the ease with which assets were converted into cash without influencing the market price. Pecking order theory argues that the higher liquid firms were less leveraged since they belong to internal source of financing as (Öztekin & Flannery, 2012) put it and they prefer internal source of financing to substitute debt.

High-liquidity firms, according to trade-off theory, prefer debt to equity since they could easily service and use them when the need arises.

(Šarlija & Hara, 2012) conducted a study on the impact of liquidity on the capital structure of Croatian companies, and a significant correlation was found between some of the ratios, specifically the liquidity ratio and leverage ratio carried out an investigation on the effect of liquidity on the Capital structure of the Croatian firms, found a statistically significant correspondence involving liquidity ratio and leverage ratio. The study concluded that the leverage ratio is negatively related to the liquidity ratio (Sibilkov, 2009) conducted a study of American

firms and concluded that leverage was positively related to liquidity hence contradicting the study by (Šarlija & Hanc, 2012).

Growth

"Firms with more growth opportunity would prefer more equity and hence low leverage since the wealth from investments was transferred from shareholders to the debtholders" as discovered by (Hossain & Ali, 2012) (Huang & Song, 2016). Increased growth opportunities lead to higher agency costs of debt (Booth, 2002). (Jensen & Meckling, 1976) argue that fast-growing companies tend to rely less on debt (leverage) because they had more of their own money to invest. This way, they avoid the risk of borrowing for projects that might not be profitable.

2.4 Empirical Literature review

It was analyzed that, to maximize the total value of a firm, the management should strive to increase the market value of both debt and equity. The cost paid to access these sources of finance diminishes if an optimal mix of such sources is used (Ross & J, 1999). However, recent methods helped the management determine a mix of equity and debt that enhanced the financial performance of firms; various researchers concluded that most companies do not use such a mix (Simerly & Mingfang, 2000).

(Riaz, 2015) , explored the correlation analysis and the panel least squares method in data involving 28 listed companies in the chemical industry of Pakistan from the companies' annual reports from 2009 to 2013. His findings were such that the coefficient value of short-term debt to total assets had a significant negative impact on ROA and long-term debt to assets had a negative and insignificant influence on ROA.

(Iorpev & Kwanum, 2012), evaluated the relationship of CS and FP of companies whose activities were of a manufacturing nature and listed on the Nigerian Securities Exchange for the period of 2005-2009. In their analysis, Financial performance metrics were proxy by ROA and profit margins while capital structure variables were; Short term and long term debts to total debts which had insignificant negative relationship with ROA and PM and Total debt to equity had a positive

relationship and negative relationship with ROA and PM respectively. It found that capital structure was not the main determinant of performance among firms.

(Onaolapo & Kajola, 2010), used non-financial firms listed in the Nigerian Stock Exchange, covered 7 years from 2001 to 2007 in order to investigate the influence of capital structure and firm performance. Their measures used debt ratio to examine capital structure and ROA & ROE to examine firm's financial performance, they concluded that capital structure had a negative impact on the performance of firms.

(Salteh, Ghanavati, Khankah, & Khosroshahi) investigated the capital structure impact on the performance of firms in Iranian corporations listed as vehicles and parts manufacturing economic sectors at the Tehran Stock Exchange. The results referred to a positive and significant relation with ROE and equity market value to equity book value and Tobin's Q, while it showed a negative relation with ROA and EPS.

A study investigated the capital structure influence on firms that characterized the stock market of Istanbul, specifically companies listed under the industrial sector with an index of XUSIN, and found that a firm's capital structure was significantly negatively associated with financial firm performance defined by variables like EPS, ROE, and ROA. That means the impact that leverage had on performance depends on the size of the firm. This study used panel data from 101 listed firms in Nigeria between 2003 and 2007 and found that such a negative effect of leverage on firm performance was clear and significant for small-sized firms, while evidence of a negative effect diminished as a firm grew and vanished when firm size exceeded an estimated threshold level.

According to a study on the relationship of capital structure with company performance, the results indicated that there was a positive and significant relationship with capital structure, measured by TDTA, STDTA, and LTDTA, on company performance. Research conducted in Taiwan also found the capital structure to be positively and significantly related to firm performance. A research about Vietnam opined that Capital Structure was negatively and significantly results with firm performance.

A sample of 85 Islamic banks covering 19 countries was used to identify the impact of capital structure on firm performance. The study identified that in case if the debt-to-equity ratio is less than 37%, it would negatively affect the firm's value. But the study failed to identify the best or optimal debt-to-equity ratio. Literature states that it was appropriate to finance through equity sources rather than debt source (Lama Terek Al-Kayed, 2014). Most researchers found it hard

enough to judge the capital structure of a firm; the analysis extended its horizons to the identification of the factors, which identify the capital structure of a firm.

(Anush Hondoo, 2014) conducted a study of 870 listed Indian firms consisting of both private and public sector companies, and used regression analysis on 3 dependent variables and 10 independent variables to test for impact on capital structure; the results identified that profitability, growth, asset tangibility, size, cost of debt, tax rate, and debt serving capacity had a significant impact on the capital structure chosen by firms.

According to, (Mahfuzah Salim, 2012) and (Dawar, 2014) the capital structure of the banking and finance sector entities do not play a role in capital structure since they had highly been regulated and mainly build through debt financing. Thus, researchers did not consider information obtained from the banking and financing companies since it would tend to provide misleading results.

According to (Omran, 2009) the construction industry in Egypt was appreciably dissimilar to other industries in determining its short-term financing methods; hence, the higher business risk of Egyptian firms doesn't result in a lower level of long-term capital structure. (Oladeji, 2015) concluded in 2015 that firm performance was positively related to firm size, tax, and lagged return of assets, indicating that capital structure was not the only determinant factor in figuring out a firm's performance. Hence, researchers found that other important factors would also impact the performance of a company.

As per the findings of (Abeywardhana, 2009), when firm expands its size, firm performance increases. Ownership structure had a positive impact on firm's performance, as said by (Mahfuzah Salim, 2012) and (Boroujeni, 2013). (Leonard, 2014) examined the capital structure of the corporate performance of firms listed on the NSE stock exchange for the period ranging from 2002 to 2011. They used three measures of profitability— ROE, ROA, and Tobin's Q—while capital structure was represented by the debt-to-equity ratio, DE, and the debt-to-total assets ratio, and long-term debt-to-equity ratio. The results indicated that there was no relationship between capital structure and firm performance.

(Muhoro, 2013) took five listed constructions and allied companies listed at NSE from 2003–2012 to establish the relationship of capital structure decisions on performance; through a multiple linear regression model, it established a positive relation between total debt, long-term debt, short-term

debt, size, sales growth, and return on equity. To highlight gaps of the study, previous studies did not explore well on differences in capital structure across various subsectors within manufacturing sector in Kenya rather provided general findings, this study made contributions by providing detailed insights into how different sub sectors within the manufacturing respond to capital structure decisions.

Consequently, the study tried to add value to existing literature by answering the question: what was the effect of capital structure on the financial performance of the manufacturing firms quoted at the Nairobi Security Exchange? And provide Strong, context-specific data in order to close the gap. As mentioned in the problem statement prior studies on this topic in the Kenyan context resulted in mixed and conflicting outcomes; hence, this study gave clear resolution to the conflicts addressed in this study.

The research hoped to build upon the theoretical and empirical knowledge on the relationship between capital structure and firms' performance and provided useful insights to companies toward maximization of profitability through the capital structure of companies.

2.5 Conceptual Framework

The conceptual framework provided the basis for undertaking this study by highlighting the variables of concern and the underlying rationale concerning the interactions between them in the effects of capital structure on financial performance.

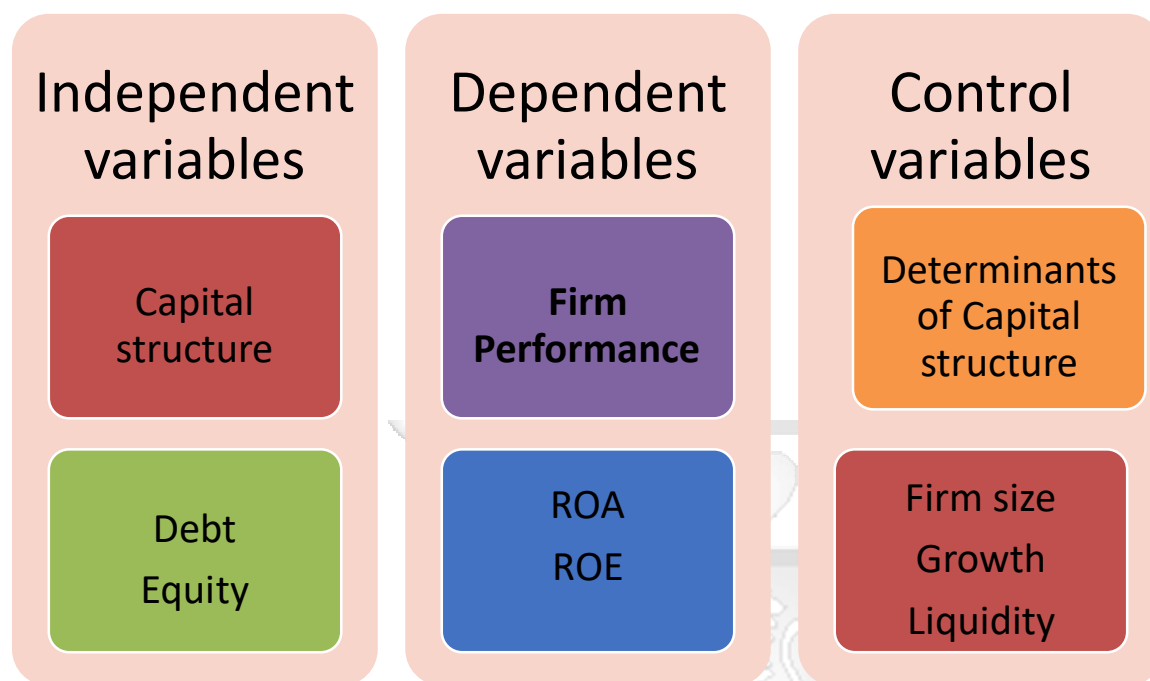


Figure 1 Conceptual Framework

2.6 Summary of the chapter

This chapter brought together some theoretical positions for the explanation of how and why capital structure affects financial performance and facilitates a refined examination that would enlighten academic investigations and realistic commercial techniques. There's a gap in the literature that was cross industry analysis to identify the industry specific dynamics this would identify unique factors and strategies. Many existing studies might not focus on the economic and market conditions in Kenya to improve this more localized studies are needed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the methodology that was adopted to help achieve the research objectives. This had an inclusion of the case study design, the population that was targeted for study, the methods of data collection, sample design, and data analysis.

3.2 Research design

The study employed a correlational research design to examine the relationship between two or more variables. This design primarily aims to explore associations between variables without establishing causal links. The research focused on identifying patterns and connections rather than determining cause-and-effect relationships.

3.3 Population and Sampling

The target population consisted of all companies listed under the manufacturing and allied sector at NSE in Kenya as long as they had five years of annual reports for the period of 2019 to 2023. According to the latest reports from the NSE, there were total of 9 companies listed in the manufacturing and allied segment. Given this small population, the number of companies to be included in the research was determined using a census method for this study.

In this study, the targeted population would be relevant because findings and conclusions of the study would be made from the entire population. A number of reasons made the choice of the manufacturing firms listed in the Nairobi Securities Exchange relevant: their published financial statements made them easier to access, and they had well-defined capital structures.

This study had a purposeful sampling design. In purposive sampling, the researcher chose samples that would give a more comprehensive understanding of the subject matter. The targeted

population of this study will include nine firms listed under manufacturing and allied at the NSE of Kenya, as shown in (see Appendix 1).

3.4 Data Collection

The study would be based on secondary data to enhance accuracy and reliability. The data for the study was obtained from the Central Bank of Kenya, company websites' audited financial statements, and NSE Handbook. From the statement of results, what was picked for analysis is the sales, earnings before interest and tax, and retained earnings. The secondary data collected was in the form of soft protected copy and hence high reliability. Next, all documents were copied to excel sheets per company. Finally, data on excel sheets was transferred to the SPSS package for analysis. In order to achieve the general objectives of the research on the effect of capital structure on financial performance in manufacturing firms, the research would adopt the following model in which financial performance is the dependent variable, while capital structure was the independent variable with control variables.

3.4 1 Measurement of Variables

Variable	Type of Variable	Definition	Measurement
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Financial Performance (FP)	Dependent Variable	Financial Performance was used to describe a company's Financial health comprehensively.	$ROA = \frac{Net\ income}{Avg\ Total\ Asset} * 100$ $ROE = \frac{Net\ income}{Avg\ Shareholder's\ equity} * 100$
Long term debt	Independent Variable	It was a source of financing by firms through loans payable for more than one year.	Figures had been sourced from the financial statement.
Equity	Independent Variable	Equity refers to the amount which belongs to the owners of the firm. This amount would not include retained earnings.	Equity less Retained earnings
Retained Earnings	Independent Variable	Retained earnings represent the amount of funding that remains after a firm made its dividend payments to the shareholders.	Figures had been directly sourced from the financial statement.

Table 1 Measurement of Variables

3.5 Data Analysis

To achieve the study objectives, we used descriptive statistics to help in summarizing the data, model specification and diagnostic tests helped confirm check the assumptions of the model to be used. The relevance of the model was evaluated using analysis of variance (ANOVA), and the significance of the independent variables in explaining the dependent variable was evaluated using t-tests.

3.5.1 Descriptive Statistics

The study summarized data in terms of maximum, minimum, mean, median, standard deviation and provide the pattern of the same through descriptive statistics.

3.5.2 Model specification

The dependent variables in the study had two measures, namely ROA and ROE. There were therefore two models developed in the study using the multiple regression analysis. Basically, multiple regression analysis would be used to estimate the causal relationship between capital structure and financial performance. A multivariate linear regression model was used in order to logically put all variables together in evaluating how a set of explanatory variables affected a dependent variable. I used the Statistical Packages for Social sciences, SPSS, due to the ability in simplifying repetitive tasks and also the capacity to handle complex data manipulation and analysis.

Financial performance was measured as thus:

Financial performance (Y_{it}) = ROE; ROA;1

Hence the regression models were forecasted thus;

$$ROE = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon \quad \dots\dots\dots 2$$

$$ROA = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon \quad \dots\dots\dots 3$$

Where: i denoted the company listed under manufacturing and allied firms

t= time period in years

Y_{it} represented the financial performance of the companies listed under the manufacturing and allied firms

X_{1it} - represented the long term debt for the period t

X_{2it} -represented equity for the period t

X_{3it} - represented retained earnings for the period t

α - represented a Constant which describes financial performance without insertion of independent variables, i.e. the value of Y when the value of X is zero

β_i was the factor of variable i, which measured the extent to which the dissimilarity in Y was explained by deviations in X

ε = was the error term and it accounts for effect of variables that were omitted from the regression.

One single measure of financial performance of manufacturing firms: The Z-score The Z-Score formula took the following form: ROA minus the capital ratio, or total equity divided by total assets, and the whole expression is divided by the standard deviation of ROA. The study adopted correlation analysis in establishing the effect of long-term debt, equity, and retained earnings on the financial performance. Analysis of variance was used in assessing the significance of the model, while t-tests were used in assessing the relevance of the independent variables in explaining the dependent variable.

3.5.3 Diagnostic tests

Diagnostic tests examine whether the study met its objectives.

3.5.3.1 Multicollinearity

The presence of multicollinearity was checked to see that independent variables could be potentially related with one another. The presence of multicollinearity caused unstable regression and inflates the standard error. A small amount of multicollinearity might present a problem, but if it is reasonable, then the issue could be sorted out. Variance Inflation Factor was used to check how each independent variable was related to others. VIF interpretation: The rule given should apply to interpret the Variance inflation factor; VIF -value would mean conclusion; VIF = 1 not correlated; $1 < \text{VIF} < 5$ would mean highly correlated. (Daoud, 2017).

3.5.3.2 Normality

The normality tests supplement the graphical assessment of normality. Normality testing was done to ensure that sample data is drawn from a normally distributed population. Normality testing was conducted using marks in the model compared to an ordinarily circulated set of marks with a similar mean and standard deviation. Normality tests should be done for checking normality using the Shapiro-Wilk test, which is available in SPSS. (Ghasemi & Zahediasl, 2012) and also the Kolmogorov-Smirnov was used to test whether a set of observations was from a normal distribution when the mean and the variance were not specified but was estimated from the sample.

3.5.3.3 Heteroscedasticity Test

Heteroscedasticity was tested using the Glejser test, which tests for non-constant error terms of the regression. The impact of this violation of the homoscedasticity assumption was one of degree, increasing as heteroscedasticity increases. It also leads to biased standard error estimates. Heteroscedasticity could be the result of omitted predictors that were not included in the model or the misspecification of the omitted nonlinear predictor terms.

3.5.3.4 Tests of model goodness of fit

To assess assumptions of the model Regression analysis would examine the distribution of residuals. The significance of the full model was tested at a 95% level of confidence using the F test. In order to assess the independent variable's significance, a T test with a 95% confidence level

was also employed. The regression model's dependability was determined using the coefficient of determination and a Significant F-test suggests the model is useful in explaining the variation.



CHAPTER FOUR

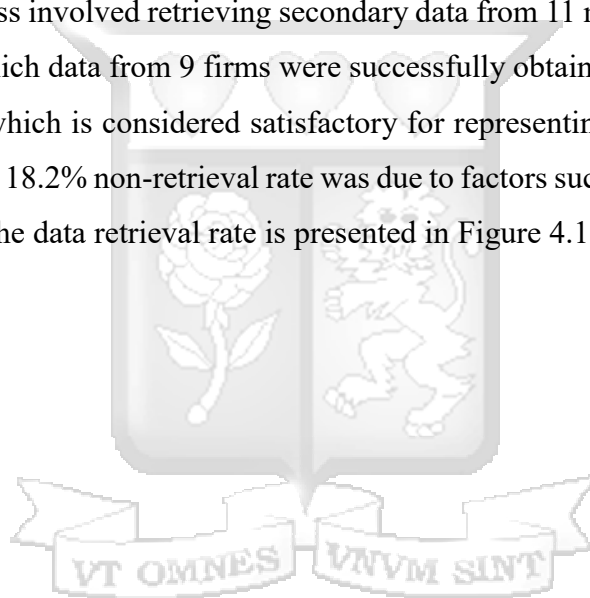
DATA ANALYSIS, PRESENTATION, AND INTERPRETATION OF RESULTS

4.1 Introduction

The chapter presents data from the study was collected, discussed, and presented. Two weeks were allocated for data collection. Data was analyzed in accordance with the research objectives. Descriptive statistics, regression analysis and diagnostic tests were used to analyze the secondary data.

4.2 Response rate

The data collection process involved retrieving secondary data from 11 manufacturing firms listed under the NSE, out of which data from 9 firms were successfully obtained. This resulted in a data retrieval rate of 81.8%, which is considered satisfactory for representing the population of listed manufacturing firms. The 18.2% non-retrieval rate was due to factors such as unavailability of data and access restrictions. The data retrieval rate is presented in Figure 4.1 below.





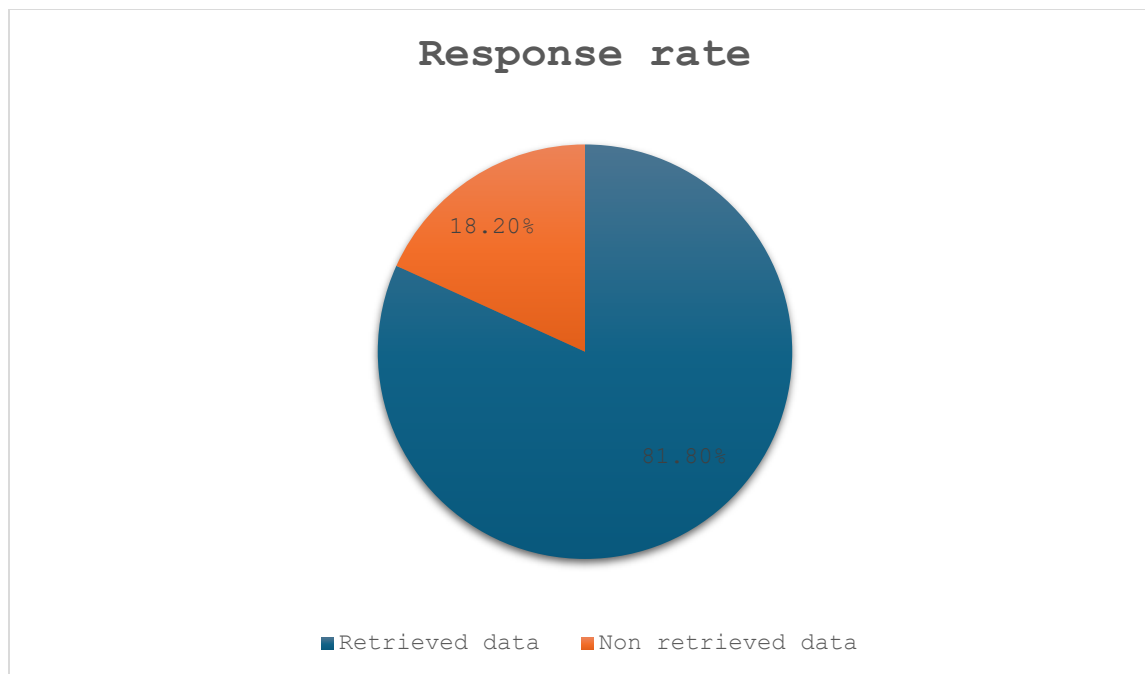


Figure 2 Response Rate

Figure 1: Response rate

Source: Research data

4.3 Descriptive statistics

Through SPSS version 20 researchers used descriptive statistics to transform raw data into more expressive statistical outputs that utilized mean and standard deviation statistics. By examining the mean, range, and standard deviation of these variables, the analysis highlighted significant variations in financial structure and profitability across the firms. These differences suggested diverse strategies and risk profiles in the management of debt, equity, and profit retention.

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic

ROA (%)	45	1.8	12.0	6.916	.3940	2.6432
ROE (%)	45	4.0	22.0	12.807	.7859	5.2719
Long-term Debt (Million KES)	45	300	20000	4508.67	941.045	6312.720
Equity (Million KES)	45	1500	35000	10402.22	1599.215	10727.863
Retained Earnings (Million KES)	45	200	15000	3472.22	645.449	4329.806
Valid N (listwise)	45					

Table 2 Descriptive statistics

Source: Research data, 2025

Table 4.1 above provide an analysis of key financial variables for 9 firms, including Return on Assets (ROA), Return on Equity (ROE), long-term debt, equity, and retained earnings. Each finding suggests important insights about the financial health and performance of these firms.

The ROA had a mean of 6.916%, with a standard deviation of 2.6432%, indicating that most firms exhibited fairly similar efficiency in generating profits from their assets. The values ranged from 1.8% to 12%, suggesting that while some firms were more efficient in asset utilization, the differences were not extreme. This implies that the firms generally managed their assets effectively, though some firms may have faced challenges in maximizing returns from their assets.

On the other hand, the ROE showed a higher mean of 12.807% and a greater standard deviation of 5.2719%, with values ranging from 4% to 22%. This suggests that the firms varied more significantly in their ability to generate returns for shareholders. The broader range and higher variability indicate that some firms were better able to leverage their equity to produce profits, while others struggled to deliver comparable returns. This could be due to differences in profitability, leverage strategies, or operational efficiency.

The long-term debt levels also displayed substantial variation, with a mean of 4,508.67 million KES and a large standard deviation of 6,312.720 million KES. The debt levels ranged from 300 million KES to 20,000 million KES, indicating that firms had very different approaches to debt financing. Some firms relied heavily on debt, while others maintained low debt levels. Firms with higher debt might be more leveraged, potentially increasing their returns but also exposing them to higher financial risk, while those with lower debt could be more conservative in their financing strategies.

Equity levels showed a mean of 10,402.22 million KES and a standard deviation of 10,727.863 million KES, with values ranging from 1,500 million KES to 35,000 million KES. This suggests a wide disparity in the financial capital of the firms, with some being well-capitalized and others operating with more limited resources. Firms with larger equity bases are likely to have more flexibility for investment and growth, while those with smaller equity may be more constrained in their operations.

Retained earnings also exhibited notable variability, with a mean of 3,472.22 million KES and a standard deviation of 4,329.806 million KES. The range of retained earnings spanned from 200 million KES to 15,000 million KES, indicating that firms differed significantly in their ability to retain and reinvest profits. Firms with higher retained earnings may have been more profitable or opted to reinvest earnings rather than distribute them, while those with lower retained earnings may have faced profitability challenges or prioritized shareholder distributions.

4.4 Regression analysis

Regression analysis functions as a statistical approach for estimating dependent variables (Y) by studying independent variables (X). Linear regression has become one of the most common statistical tools because it studies variable relationships (Kumari and Yadav, 2018). The study utilized multiple regression methods through SPSS version 20 software for analysis.

4.4.1 Diagnostics test

The research variables underwent diagnostic tests to measure their alignment with regression analysis conclusions. A diagnostic test evaluated the extent of objective achievement for the study's intended goals.

4.4.1.1 Multicollinearity Test

Multicollinearity tests were performed to assess the degree of similarity among the independent variables as follows:

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.627	.614		7.542	.000		
	Long-term Debt (Million KES)	-.004	.001	-4.840	-7.208	.000	.007	149.740
	Equity (Million KES)	.001	.000	3.034	8.662	.000	.025	40.759
	Retained Earnings (Million KES)	.003	.001	2.576	3.753	.001	.006	156.489

Table 3 Multicollinearity Test

Source: Research data, 2025

The multicollinearity test results, as presented in the table, indicated the correlation between the independent variables: Long-term Debt, Equity, and Retained Earnings. Multicollinearity, which occurs when independent variables are highly correlated, posed concerns about the reliability of the regression results. The focus was on the tolerance and variance inflation factor (VIF) values to determine the severity of multicollinearity.

For Long-term Debt, the unstandardized coefficient (B) was -0.004, showing a negative relationship with the dependent variable. The t-value of -7.208 and the significant p-value (0.000) confirmed that this variable was statistically significant. However, the tolerance value was extremely low (0.007), and the VIF was very high (149.740), signaling severe multicollinearity. Similarly, Equity had a positive coefficient (B = 0.001) and was statistically significant, with a t-value of 8.662 and a p-value of 0.000. Nonetheless, it also had a low tolerance value of 0.025 and a high VIF of 40.759, indicating substantial multicollinearity.

Retained Earnings had a positive coefficient (B = 0.003) and was significant, with a t-value of 3.753 and a p-value of 0.001. Like the other variables, it had a very low tolerance value (0.006) and an extremely high VIF (156.489), further suggesting severe multicollinearity. The consistently high VIF values and low tolerance values across all three variables indicated that multicollinearity was a significant issue in the model.

4.4.1.2 Normality test

Tests of Normality						
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA (%)	.081	45	.200*	.971	45	.313
ROE (%)	.109	45	.200*	.947	45	.039
Retained Earnings (Million KES)	.308	45	.000	.703	45	.000
Equity (Million KES)	.319	45	.000	.737	45	.000
Long-term Debt (Million KES)	.321	45	.000	.660	45	.000

Table 4 Normality test

a. Lilliefors Significance Correction

Source: Research data, 2025

The results of the normality tests in Table 4.3 show mixed outcomes across the variables. For ROA and ROE, the Kolmogorov-Smirnov test indicates no significant deviation from normality, with p-values of 0.200 for both variables. The Shapiro-Wilk test also confirms that ROA data was normally distributed ($p = 0.313$), while ROE had a p-value of 0.039, suggesting a slight deviation from normality. However, retained earnings, equity, and long-term debt show significant deviations from normality in both tests, with p-values of 0.000.

4.4.1.3 Heteroscedasticity test

Heteroscedasticity test examines the relationship between independent variables and the dependent variable while assessing the variance of the error terms. Glejser test was used to find the heteroscedacity test. The analysis involved evaluating the effect of long-term debt, equity, and retained earnings on the model, with the goal of identifying any potential heteroscedasticity. Moreover, if the significant value is > 0.05 then there is no problem of heteroscedasticity and vice versa. The findings are as shown in table 4.4 below.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.410	.333		7.232	.000
	Long-term Debt (Million KES)	-.003	.000	-.7.282	-10.012	.000
	Equity (Million KES)	.001	.000	3.669	9.668	.000
	Retained Earnings (Million KES)	.003	.000	4.175	5.615	.000

Table 5 Heteroscedasticity test

Source: Research data, 2025

The results from the heteroscedasticity test indicated that all three independent variables long-term debt, equity, and retained earnings were statistically significant, each with a p-value of 0.000. This suggested that each of these financial factors had a meaningful impact on the dependent variable. Specifically, long-term debt had a negative relationship with the dependent variable, with an

unstandardized coefficient of -0.003 and a t-value of -10.012. This indicated that as long-term debt increased, the dependent variable tended to decrease, highlighting a significant inverse effect.

On the other hand, equity showed a positive relationship with the dependent variable, with a coefficient of 0.001 and a t-value of 9.668. This suggested that as equity increased, the dependent variable also increased, with a strong positive effect. Similarly, retained earnings demonstrated a positive relationship, with a coefficient of 0.003 and a t-value of 5.615. This meant that higher retained earnings were associated with a higher dependent variable, suggesting that firms with greater retained earnings were better positioned to positively influence the outcome being measured.

Given the significant t-values and corresponding p-values, the findings showed that the relationships between the independent variables and the dependent variable were statistically robust. Additionally, the consistent and stable nature of these relationships across the values further suggested that the model did not exhibit heteroscedasticity.

4.4.2 Model summary

The research had two measures of financial performance (ROA, ROE) hence two models were presented.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925	.855	.845	1.0422

Table 6 ROA Model summary

a. Predictors: (Constant), Retained Earnings (Million KES), Equity (Million KES), Long-term Debt (Million KES)

Source: Research data, 2025

Table 4.5 presented the results of the regression analysis using ROA as the dependent variable. The R value was 0.925, indicating a very high degree of correlation between ROA and the

independent variables (equity, long-term debt, and retained earnings). This suggested that there was a strong positive relationship between the predictors and ROA during the period under study.

The R-squared value was 0.855, meaning that 85.5% of the variation in ROA was explained by the independent variables. This indicated that the predictors were highly effective in explaining the financial performance of the firms in the study, although 14.5% of the performance was likely influenced by factors outside the model.

The Adjusted R-squared value of 0.845 accounted for the number of predictors in the model, and the small reduction from R-squared to Adjusted R-squared showed that the independent variables remained significant and robust in explaining the variations in ROA.

The Standard Error of the Estimate was 1.0422, which measured the accuracy of the model's predictions. A lower standard error indicated better predictive accuracy, suggesting that the model performed well in predicting the ROA of the firms based on the given independent variables.

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	262.868	3	87.623	80.675	.000
	Residual	44.531	41	1.086		
	Total	307.399	44			

Table 7 Analysis of Variance (ANOVA)-ROA

a. Dependent Variable: ROA (%)

b. Predictors: (Constant), Retained Earnings (Million KES), Equity (Million KES), Long-term Debt (Million KES)

Source: Research data

Table 4.6 above shows the ANOVA results of how fine the data fits the regression equation. The significance level was at 0.000 an indication that the overall regression model was highly

statistically significant because it was below 0.05. This suggests that there was a very strong relationship between the independent variables (equity, long-term debt, and retained earnings) and the dependent variable (ROA). Therefore, the results provide strong evidence that the independent variables collectively contributed to explaining the variation in ROA, and the regression model fit the data well.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.410	.333		7.232	.000
	Long-term Debt (Million KES)	-.003	.000	-7.282	-10.012	.000
	Equity (Million KES)	.001	.000	3.669	9.668	.000
	Retained Earnings (Million KES)	.003	.000	4.175	5.615	.000

Table 8 Coefficients table- ROA

The results presented in Table 4.7 provide insights into how long-term debt, equity, and retained earnings impacted the return on assets (ROA). The constant (intercept) value of 2.410, with a significant t-value of 7.232 (p-value of 0.000), indicated that even when the independent variables (long-term debt, equity, and retained earnings) were zero, the firms' ROA would still be positive at 2.410%. This baseline value suggests that factors other than those considered in the model also contributed positively to ROA.

Long-term debt had a negative coefficient of -0.003, and with a t-value of -10.012 and a p-value of 0.000, it was statistically significant. This indicated an inverse relationship between long-term debt and ROA. Specifically, as long-term debt increased, the firms' ROA decreased. This finding suggested that higher levels of long-term debt burdened the firms, potentially leading to lower profitability and reduced financial performance.

On the other hand, equity had a positive coefficient of 0.001, with a t-value of 9.668 and a p-value of 0.000, demonstrating a statistically significant positive effect on ROA. This result suggested

that an increase in equity led to an improvement in the firms' financial performance. Firms with higher equity levels were likely able to utilize their capital effectively, enhancing their profitability and return on assets.

Retained earnings also showed a positive and significant relationship with ROA, with a coefficient of 0.003, a t-value of 5.615, and a p-value of 0.000. This implied that firms that retained more of their earnings saw a corresponding improvement in their ROA. The positive effect of retained earnings suggested that reinvesting profits back into the business had a beneficial impact on financial performance, contributing to higher profitability over time.

ROA function

$$Y = 2.410 - 0.003X_1 + 0.001X_2 + 0.003X_3$$

$$Y = \text{ROA}$$

$$X_1 = \text{Long term debts}$$

$$X_2 = \text{Equity}$$

$$X_3 = \text{Retained issues}$$

The regression function is based on the unstandardized beta coefficients from the model. The coefficients explain the dependent variable (ROA) per unit contribution of the independent variables. The findings show that, keeping other predictor variables constant, a unit increase in long-term debt (X_1) would decrease ROA by 0.003. A unit increase in equity (X_2) would increase ROA by 0.001, and a unit increase in retained earnings (X_3) would also increase ROA by 0.003. This indicates that while long-term debt has a negative impact on ROA, both equity and retained earnings have a positive influence on the firms' return on assets.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936	.877	.868	1.9187

Table 9 ROE Model summary

a. Predictors: (Constant), Retained Earnings (Million KES), Equity (Million KES), Long-term Debt (Million KES)

Source: Research data

The ROE model summary presented in Table 4.8 provides key indicators of the strength and explanatory power of the regression model used to predict Return on Equity (ROE). The R value of 0.936 indicated a very strong positive correlation between the independent variables (long-term debt, equity, and retained earnings) and ROE. This correlation suggested that the predictors were highly related to the dependent variable, meaning that 93.6% of the variation in ROE was associated with changes in the independent variables.

The R Square (R^2) value of 0.877 demonstrated that 87.7% of the variation in ROE could be explained by the model. This high R^2 value indicated that the independent variables provided a robust explanation for the changes in ROE during the study period. The remaining 12.3% of the variation in ROE was attributable to other factors not included in the model, suggesting that other variables beyond long-term debt, equity, and retained earnings could also influence ROE.

The Adjusted R Square value of 0.868 was slightly lower than the R Square value, accounting for the number of predictors in the model and adjusting for the sample size. This value indicated that 86.8% of the variability in ROE was explained by the model after adjusting for the number of independent variables, reaffirming the model's strong explanatory power.

Additionally, the Standard Error of the Estimate of 1.9187 reflected the typical distance that the observed ROE values fell from the regression line. A lower standard error indicated that the

model's predictions were relatively accurate, with a small degree of deviation between the observed and predicted values.

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1071.944	3	357.315	97.055	.000
	Residual	150.944	41	3.682		
	Total	1222.888	44			

Table 10 Analysis of Variance (ANOVA)-ROE

a. Dependent Variable: ROE (%)

b. Predictors: (Constant), Retained Earnings (Million KES), Equity (Million KES), Long-term Debt (Million KES)

Source: Research data

Table 4.9 presents the ANOVA results for the ROE regression model. The significance level was 0.000, which indicated that the overall regression model was highly statistically significant, as it fell well below the 0.05 threshold. This finding suggested a strong relationship between the independent variables (long-term debt, equity, and retained earnings) and the dependent variable (ROE). Consequently, the results provided robust evidence that the independent variables collectively explained a significant portion of the variation in ROE, demonstrating that the regression model effectively fit the data.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.627	.614		7.542	.000
	Long-term Debt (Million KES)	-.004	.001	-4.840	-7.208	.000
	Equity (Million KES)	.001	.000	3.034	8.662	.000

	Retained Earnings (Million KES)	.003	.001	2.576	3.753	.001
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Table 11 Coefficients table- ROA

Source: Research data

The results presented in Table 4.10 provide a detailed analysis of the impact that long-term debt, equity, and retained earnings had on the return on assets (ROA). The constant (intercept) had a value of 4.627, with a significant t-value of 7.542 (p-value of 0.000), indicating that, even when the independent variables (long-term debt, equity, and retained earnings) were zero, the firms' ROA would still be positive at 4.627%. This baseline value suggested that other factors, beyond those considered in the model, also contributed positively to the firms' return on assets.

Long-term debt had a negative coefficient of -0.004, with a t-value of -7.208 and a p-value of 0.000, meaning the relationship was statistically significant. This negative coefficient indicated an inverse relationship between long-term debt and ROA. Specifically, as long-term debt increased, the firms' ROA decreased. This suggested that a higher level of debt was likely to strain the firm's financial performance, reducing its profitability.

In contrast, equity had a positive coefficient of 0.001, with a t-value of 8.662 and a p-value of 0.000, showing that equity had a statistically significant positive impact on ROA. This finding indicated that an increase in equity contributed to higher financial performance. Firms with higher equity levels were likely to have better capital utilization, resulting in enhanced profitability and improved return on assets.

Similarly, retained earnings had a positive coefficient of 0.003, with a t-value of 3.753 and a p-value of 0.001. This relationship was also statistically significant, suggesting that firms which retained a larger portion of their earnings experienced an increase in their ROA. The positive effect of retained earnings reflected the benefits of reinvesting profits into the business, which ultimately led to greater financial success and higher returns over time.

Regression Function ROE

$$Y=4.627 - 0.004X_1 + 0.001X_2 + 0.003X_3$$

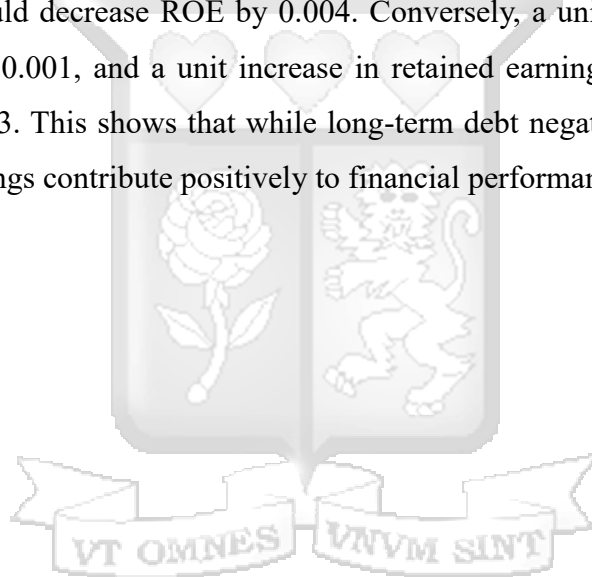
Y=ROE

X_1 = Long term debts

X_2 = Equity

X_3 =Retained Earnings

The regression function is based on the unstandardized beta coefficients from the model. The coefficients explain the dependent variable (ROE) per unit contribution of the independent variables. The findings indicate that, keeping other predictor variables constant, a unit increase in long-term debt (X_1) would decrease ROE by 0.004. Conversely, a unit increase in equity (X_2) would increase ROE by 0.001, and a unit increase in retained earnings (X_3) would lead to an increase in ROE by 0.003. This shows that while long-term debt negatively impacts ROE, both equity and retained earnings contribute positively to financial performance.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Introduction

This section primarily focused on providing the study's summary on the findings from Chapter four. This would further involve giving conclusions and specific recommendations on the study objectives and providing a suggestion of any further studies.

5.2 Summary of findings

The summary of findings for the research objectives are as follows;

5.2.1 Effect of long-term debts on financial performance

Long-term debt exhibited substantial variability among the firms, with a mean of 4,508.67 million KES and a standard deviation of 6,312.720 million KES. This variation highlighted the diverse approaches firms had toward financing through debt. The regression analysis found that long-term debt had a significant negative relationship with both ROA and ROE. As long-term debt increased, both financial performance indicators (ROA and ROE) decreased. This suggests that firms with higher long-term debt burdens struggled to generate profits from their assets and equity, potentially facing financial risks associated with high debt levels.

5.2.2 Effect of Equity on financial performance

Equity, with a mean of 10,402.22 million KES and a standard deviation of 10,727.863 million KES, showed wide disparities in the capital base of the firms. Firms with higher equity were generally in a stronger financial position, as indicated by the positive coefficients for equity in both the ROA and ROE regression models. The analysis revealed that an increase in equity positively impacted both ROA and ROE. The results highlighted that firms with larger equity bases were

better able to utilize their capital for growth, leading to improved profitability and higher returns for shareholders. This finding underlined the importance of a strong equity base in fostering financial success.

5.2.3 Effect of retained earnings on financial performance

Retained earnings, with a mean of 3,472.22 million KES and a standard deviation of 4,329.806 million KES, also demonstrated significant variation across the firms. The regression analysis showed that retained earnings had a positive relationship with both ROA and ROE. Firms that retained a larger portion of their earnings saw improved profitability and higher returns, reflecting the advantages of reinvesting profits into business operations rather than distributing them to shareholders. The positive effect of retained earnings suggested that firms with better internal capital accumulation were in a stronger position to enhance their financial performance over time.

5.2.4 Financial performance (ROA, ROE)

Return on Assets (ROA) showed a mean of 6.916%, with a standard deviation of 2.6432%. The values ranged from 1.8% to 12%, indicating that while most firms were relatively efficient in utilizing their assets, some exhibited greater challenges in maximizing returns. The regression analysis revealed that ROA was significantly influenced by long-term debt, equity, and retained earnings. Long-term debt had a negative relationship with ROA, suggesting that higher debt levels led to lower asset returns. Conversely, equity and retained earnings had positive impacts on ROA, indicating that firms with higher equity and retained earnings experienced better returns on assets. The model explaining ROA had a high R-squared value of 0.855, meaning 85.5% of the variation in ROA could be attributed to these financial factors.

Return on Equity (ROE) had a mean of 12.807%, with a higher standard deviation of 5.2719%, indicating more variability in firms' ability to generate returns for their shareholders. The ROE model showed an even stronger relationship with the independent variables, with an R-squared value of 0.877, meaning 87.7% of ROE's variability was explained by long-term debt, equity, and retained earnings. The regression results confirmed that higher equity and retained earnings positively impacted ROE, while long-term debt had a negative effect. Firms with more equity were able to better leverage their capital for higher returns, while those with substantial debt levels faced challenges in generating strong shareholder returns.

5.3 Conclusion

In conclusion, the study findings provide a comprehensive analysis of the financial performance of the firms in terms of Return on Assets (ROA) and Return on Equity (ROE). The ROA results indicated that most firms were relatively efficient in utilizing their assets to generate profits and limited variation across firms. While some firms demonstrated stronger asset efficiency than others, the overall performance suggested effective asset management across the board. However, the inverse relationship between long-term debt and ROA highlighted the potential negative impact of high debt levels on asset returns, suggesting that firms need to carefully balance debt financing with asset efficiency.

On the other hand, the ROE results showed greater variability among firms. This reflected differences in the ability of firms to generate shareholder returns, with some firms significantly outperforming others. The positive relationship between equity and ROE indicated that firms with higher equity levels were more capable of generating returns for shareholders, emphasizing the importance of strong capital bases for enhancing profitability and financial performance.

The analysis of long-term debt revealed a substantial variation in debt levels across firms, with some heavily reliant on debt financing and others taking a more conservative approach. The negative impact of long-term debt on both ROA and ROE suggested that excessive debt could be detrimental to a firm's financial health, leading to reduced profitability and financial strain. Therefore, firms should consider adopting prudent debt management strategies to avoid jeopardizing their financial performance.

Additionally, the findings on retained earnings demonstrated the positive effect of reinvesting profits back into the business. Firms with higher retained earnings were better positioned to improve both ROA and ROE, indicating that retained profits contributed to long-term financial success. This suggests that firms should prioritize the reinvestment of earnings to enhance profitability and ensure sustained financial growth over time.

5.4 Recommendations of the study

Firms should carefully assess their reliance on long-term debt to finance operations. The study found that higher levels of long-term debt negatively impacted both ROA and ROE. Therefore, it is recommended that firms maintain a balanced capital structure, reducing excessive debt and considering alternative financing options, such as equity or internal funding. This will minimize the financial strain associated with high debt servicing costs and improve profitability.

The study highlighted the importance of asset efficiency in driving firm profitability. To enhance ROA, firms should focus on optimizing the use of their existing assets to generate higher returns. This could involve better inventory management, upgrading outdated equipment, or implementing technological innovations that enhance operational efficiency. Improved asset utilization will directly contribute to higher returns and overall financial performance.

Firms with higher equity levels were better positioned to generate positive shareholder returns, as evidenced by their superior ROE. It is recommended that firms strengthen their equity base through retained earnings or external equity financing. By prioritizing equity over debt, firms can reduce financial risk, ensure greater stability, and deliver more consistent returns to shareholders.

The study demonstrated that firms with higher retained earnings experienced better financial performance. Therefore, it is recommended that firms allocate a portion of their profits toward reinvestment in the business rather than distributing excessive dividends. Retained earnings should be used to fund growth initiatives, research and development, and capacity expansion, ensuring long-term profitability and competitive advantage.

5.5 Suggestions for further study

Future research could explore how external macroeconomic variables, such as inflation, interest rates, and exchange rates, influence the financial performance of firms. This would provide a deeper understanding of how these factors interact with internal financial metrics like ROA and ROE and offer insights into how firms can adjust strategies to mitigate macroeconomic risks.

A longitudinal study examining the effects of long-term debt, equity, and retained earnings over an extended period would provide insights into the evolving dynamics between financial strategies

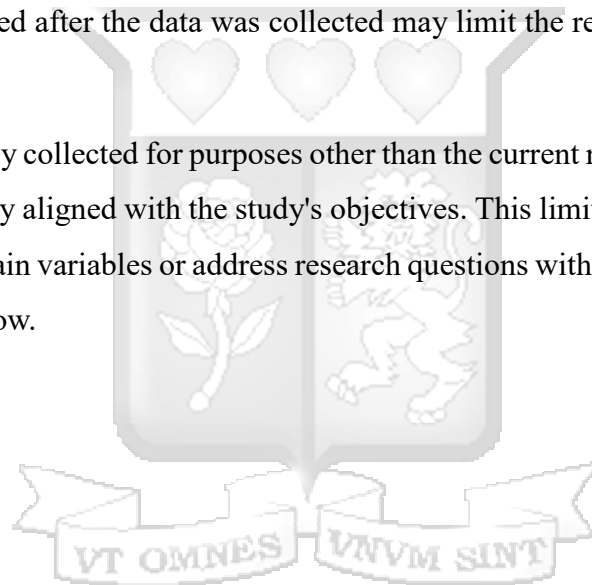
and firm performance. Tracking firms' financial strategies and outcomes over several years would help identify trends, changes in performance over economic cycles, and the long-term effectiveness of different capital structures.

5.6 Limitations of the study

Since the study used secondary data, the researcher had no control over the accuracy, completeness, or consistency of the data. Any errors or omissions in the original sources could have affected the validity and reliability of the findings, potentially leading to biased conclusions.

The use of secondary data may introduce a time lag, as the data might not be up-to-date or reflective of the current market conditions or firm performance. Changes in economic, regulatory, or industry environments that occurred after the data was collected may limit the relevance of the findings to the present context.

Secondary data is typically collected for purposes other than the current research, which may result in data that is not perfectly aligned with the study's objectives. This limitation might have affected the ability to explore certain variables or address research questions with the precision that primary data collection would allow.



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APPENDICES

APPENDIX 1: COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE

1. B.O.C Kenya Ltd (Trading Symbol: BOC)
2. British American Tobacco Kenya Ltd (Trading Symbol: BAT)
3. Carbacid Investments Ltd (Trading Symbol: CARB)
4. East African Breweries Ltd (Trading Symbol: EABL)
5. Mumias Sugar Co. Ltd (Trading Symbol: MSC)
6. Unga Group Ltd (Trading Symbol: UNGA)
7. Kenya Orchards Ltd (Trading Symbol: ORCH)
8. Flame Tree Group Holdings Ltd (Trading Symbol: FTH)
9. Bamburi Cement Ltd (Trading Symbol: BAMB)
10. Eveready East Africa Ltd (Trading Symbol: EVRD)
11. Olympia Capital Holdings Ltd (Trading Symbol: OCH)

1. B.O.C Kenya Ltd (BOC)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	7.0	10.5	500	3,200	800
2020	6.5	10.0	520	3,400	900
2021	7.2	10.8	600	3,600	1,000
2022	7.5	11.2	620	3,800	1,150
2023	8.0	11.5	650	4,000	1,300

2. British American Tobacco Kenya Ltd (BAT)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	10.5	18.0	3,000	12,000	2,500

2020	10.0	17.5	3,200	12,500	2,800
2021	11.0	19.0	3,500	13,000	3,100
2022	11.5	19.8	3,800	13,500	3,500
2023	12.0	20.0	4,000	14,000	3,800

3. Carbacid Investments Ltd

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	8.0	15.0	1,200	5,000	1,100
2020	7.5	14.5	1,300	5,300	1,250
2021	8.2	15.5	1,500	5,600	1,400
2022	8.5	16.0	1,700	6,000	1,600
2023	9.0	16.5	1,800	6,200	1,800

4. East African Breweries Ltd (EABL)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	9.5	20.0	15,000	30,000	10,000
2020	8.5	19.5	16,000	31,000	11,000
2021	9.0	20.5	18,000	32,000	12,000
2022	9.5	21.0	19,500	33,500	13,500
2023	10.0	22.0	20,000	35,000	15,000

5. Unga Group Ltd (UNGA)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	5.5	9.0	1,000	4,000	900
2020	5.2	8.5	1,200	4,200	1,100

2021	5.8	9.5	1,500	4,500	1,300
2022	6.0	10.0	1,800	4,800	1,600
2023	6.2	10.5	2,000	5,000	1,900

6. Kenya Orchards Ltd (ORCH)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	3.5	6.0	500	2,500	400
2020	3.0	5.5	550	2,700	450
2021	3.8	6.5	600	2,900	500
2022	4.0	7.0	650	3,200	600
2023	4.5	7.5	700	3,400	700

7. Flame Tree Group Holdings Ltd (FTH)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	6.0	11.0	700	3,500	900
2020	5.8	10.5	750	3,700	1,000
2021	6.5	11.5	800	3,900	1,100
2022	6.8	12.0	850	4,200	1,300
2023	7.2	12.5	900	4,500	1,500

8. Bamburi Cement Ltd (BAMB)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	8.0	16.5	12,000	24,000	8,000
2020	7.5	16.0	13,000	25,000	9,000
2021	8.2	17.0	14,000	26,000	10,000

2022	8.5	17.5	15,000	27,000	11,000
2023	9.0	18.0	16,000	28,000	12,000

9. Eveready East Africa Ltd (EVRD)

Year	ROA (%)	ROE (%)	Long-term Debt (Million KES)	Equity (Million KES)	Retained Earnings (Million KES)
2019	2.0	4.5	300	1,500	200
2020	1.8	4.0	350	1,600	250
2021	2.2	5.0	400	1,700	300
2022	2.5	5.5	450	1,800	350
2023	2.8	6.0	500	1,900	400

