

**EFFECT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF
AGRICULTURAL FIRMS LISTED AT THE NAIROBI SECURITIES
EXCHANGE**

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DECLARATION

This Research Paper is my original work and has not been presented in any other University.

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DEDICATION

I dedicate this research paper to my beloved wife, children and family.

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TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	ix
LIST OF FIGURES.....	x
ABBREVIATIONS AND ACRONYMS	xi
ABSTRACT.....	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Capital Structure.....	2
1.1.2 Financial Performance.....	3
1.1.3 Capital Structure and Financial Performance	5
1.1.4 Agricultural Firms Listed at the Nairobi Securities Exchange	6
1.2 Research Problem.....	7
1.3 Objectives of the Study	10
1.4 Value of the Study.....	10

CHAPTER TWO.....	12
LITERATURE REVIEW	12
2.1 Introduction	12
2.2 Theoretical Framework	12
2.2.1 Pecking Order Theory	12
2.2.2 Capital Structure Irrelevance Theory	13
2.3 Factors Affecting Performance of Agricultural Firms	14
2.3.1 Capital Structure.....	15
2.3.2 Organizational Size	16
2.3.3 Inflation	16
2.3.4 Economic growth rate.....	17
2.4 Empirical Literature Review	18
2.5 Conceptual Framework	23
2.6 Summary of Literature Review and Research Gaps.....	24
CHAPTER THREE.....	28
RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Design	28

3.3 Target Population	28
3.4 Data Collection.....	29
3.5 Data Analysis	29
3.5.1 Operationalization of Study Variables	30
CHAPTER FOUR.....	31
DATA ANALYSIS AND FINDINGS	31
4.1 Introduction	31
4.2 Descriptive Findings.....	31
4.2.1 Profitability Efficiency Matrix	32
4.3 Diagnostic tests	33
4.3.1 Normality Test.....	33
4.4 Correlation analysis	34
4.5 Regression analysis	34
4.6 Interpretation of Findings	36
CHAPTER FIVE.....	38
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	38
5.1 Introduction	38
5.2 Summary of Findings	38

5.3 Conclusions	39
5.4 Limitations of the Study	40
5.5 Recommendations of the Study	41
5.6 Suggestions for Further Studies	41
REFERENCES.....	43
APPENDICES.....	45

LIST OF TABLES

Table 4. 1: Descriptive Findings	31
Table 4. 2: Matrix Classification of Listed Agricultural Firms based on Performance	32
Table 4. 3: Correlation Findings	34
Table 4. 4: Regression Model Summary.....	34
Table 4. 5: Analysis of Variance.....	35
Table 4. 6: Regression Coefficients	35

LIST OF FIGURES

Figure 1: Conceptual Framework	233
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ABBREVIATIONS AND ACRONYMS

CFC Credit financing corporation

NIM Net interest margins

NSE Nairobi Securities Exchange

ROA Return on Assets

ROE Return on equity

ABSTRACT

This study paper focused on capital structure and financial performance of agricultural firms listed at the Nairobi Securities Exchange. The main objective of the study was to determine the relationship between capital structure and financial performance of the listed agricultural firms. The study was anchored on the Capital Structure Irrelevant Theory and the Pecking Order Theory. The study employed descriptive survey research design, covering a population of seven listed agricultural firms over the period 2014 to 2021. The study relied on secondary data collected from the annual reports of the targeted institutions over the study period. The dependent variable in the study was financial performance which was measured using ROA ratio while the main independent variable was capital structure measured using debt-to-equity ratio for the years 2014 through 2021. Control variables in the study included organizational size, inflation, and economic growth. Organizational size was measured using total asset sizes of all Kenyan agricultural companies with a public listing from 2014 to 2021, as standardized using Log, inflation was measured using CPI value from 2014 to 2021, while economic performance was assessed using GDP growth rate for the period 2014 to 2021. Data collected on these variables was analyzed using descriptive and regression analysis. Based on descriptive statistics; the average performance of the listed agricultural firms in Kenya as measured using ROA ratio was 5.3%, with a standard deviation of 11.4%. The highest ever recorded ROA over the period 2014 and 2021 was 43.8% while the lowest ever recorded was -13.2%. The average Debt-to-equity ratio of the listed agricultural firms was 27.3%, implying that debt used was less than 50% amongst the firms. The highest debt-to-equity ratio recorded over the period was 48.9% with the lowest standing at 8.5%. The average inflation as measured using CPI was 153, with the highest in the period standing at 184 while the lowest was 109. The average GDP recorded in the period 2014 and 2021 in Kenya was 8.1Million KES, with the highest being 9.3Million KES. Findings further showed that the average size of agricultural firms listed at the NSE as evaluated using total assets was 5.1Billion KES, with the largest recorded at 15.1Billion KES. Findings of the study as proved with regression analysis revealed that capital structure had a positive effect on the financial performance of listed agricultural firms in Kenya. The effect of capital structure was however insignificant as proved by Student T test findings' p value of 0.488, which was above 5% level of significance. The model enlisting capital structure, organizational size, inflation, and economic growth explained 20.3% of the variation in financial performance of agricultural firms listed on the NSE. The impact of the model was significant as revealed by an F test's p value of 0.019 which was below 5% level of significance. Specifically, organizational size and inflation positively affected financial performance of the firms while economic growth negatively affected financial performance of the institutions. The study concluded that the prudent management of capital structure is critical for the performance of listed agricultural firms resulting to improved performance with regards to savings on financing costs, reduced chances of financial distress, and growth in revenues.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Most modern firms are increasingly focusing on achieving optimal capital structure to maximize financial performance. This is because improved performance in such aspects as profitability and value portrays effective utilization of resources while at the same time attracting quality workforce, and large customer base. Fortunately for organizations, technological advancements and relaxation in country policies have opened securities markets allowing them to take advantage and use more equity. A growing financial sector has also been presenting numerous options of accessing debt at favorable rates, other than providing advice on the best ways of mixing financing sources. Different industries and internal structures of organizations however imply that what works well for one institution could not necessarily work well for the other (Mudany, Letting & Gituro, 2020). As such, the mixture of financial sources to achieve an optimal capital structure is a discussion that should be ongoing to enable organizations adjust with time and gain appropriately.

The Capital Structure Irrelevant Theory and the Pecking Order Theory served as the study's pillars. The capital structure irrelevance theory, which was first presented in Modigliani and Miller's early publications (1958), demonstrated that capital structure has no bearing on a firm's value. Their assumptions including zero growth rate, zero taxes, homogenous risk class and risk-less debt applied for perfect markets which are hard to come by in the modern times. Relaxing some of the assumptions and introducing corporate taxes according to Miller (1977) proved that leverage could affect the value of organizations. Myers and Majluf (1984) offered an alternative viewpoint on the Pecking order theory which showed that managers in organizations followed a hierarchy in evaluating financing options as a way of reducing costs. Information asymmetries between owners

of funds and the organization introduced variation in costs, with most debt coming at higher costs. Additional equity would come with increased agency costs and risks of dilution, and as such an optimal financing structure would be handy to help minimize on the costs.

The agricultural sector has been advancing with time; leading to the formation of large entities that have even been listed at securities exchanges (Xu, Sun & Shang, 2021). For instance, 12 farming institutions have been listed at New York Securities Exchange (NYSE) while more than 35 have been listed at NASDAQ. As a capital structure indicator, the average debt to equity ratio of the firms listed at NASDAQ by the end of March was 2.46 with long term debt averaging at \$14.8B and equity averaging at \$6.02B (NASDAQ, 2022). The debt-to-equity ratio of 2.46 was higher than that recorded in December 2021 of 2.14 and that recorded at the end of September 2021 of 1.90, implying increasing use of debt over equity. In Kenya, the seven listed agricultural firms have been lagging in performance in the early part of the year 2022 (NSE, 2022). Kakuzi Plc for instance had Kes 5.54B and Kes. 5.57B in equity and zero long term debt in 2021 and 2020 respectively (Kakuzi, 2022). Sasini Ltd also had equity only for the two years, moving from Kes 8.5B in 2020 to Kes. 8.7B in 2021 (Sasini, 2022). Understanding the capital structure, especially that of local entities can help uncover links with financial performance and help craft better strategies in the companies.

1.1.1 Capital Structure

The capital structure of an organization refers to the ratios of debt and equity that the entity uses in its financial structure. The contribution of stock, debt, and other instruments to an organization's total capital is referred to as the capital structure, according to Titman et al. (2017). Debt in this case covers borrowings by the organization, both short- and long-term, along with requirements such as fixed interest payments and principal repayment (Narsaiah, 2020). Financial institutions

are the most immediate providers of loans, even though wealthy friends, relatives, and other individuals in societies extend loans to businesses. Equity on the other end refers to contributions by shareholders in the form of share capital and retained income (Kinyua & Muriu, 2017).

Debt to equity ratios, debt ratios, short-term debt, and long-term debt to capital are frequently used to gauge capital structure (Kimencu, 2018; Ana, Dragan & Monica, 2012; Mudany et al, 2020). Short term debt covers borrowings in the current liabilities section of financial statements by total capital, while long term debt covers items in the non-current liabilities section usually longer than a year. To fully include agricultural enterprises listed at the NSE, this study will measure capital structure using the three ratios. Several factors influence the capital structure choice, ranging from internal such as management's philosophy, urgency of funding and financial position to external such as industry structure and availability of sources (Mudany et al, 2020).

Optimizing the capital structure of a company is crucial since it increases firm value, lowers capital expenses, and maximizes shareholder wealth. Given that debts come with fixed payment terms while equity comes with risks of dilution of ownership and agency costs, striking a balance between these can help minimize costs and total risk. Utilization of retained earnings in the capital structure also becomes critical, helping to save on costs and any other risks associated. According to Narsaiah (2020), a good capital plan minimizes the risk of insolvency by ensuring that the business takes on debt within its capacity and that it has the ability to profit from market opportunities for wealth generation.

1.1.2 Financial Performance

It is the degree to which an organization performs financially in order to meet its objectives of revenue generation and profitability. According to Fatihudin and Mochklass (2018), financial performance is beyond profitability and includes the satisfaction of desires of different

stakeholders. In this case, adequacy of meeting debtors' obligations, assured stability to employees, quality product offerings to customers, and efficient utilization of natural resources are enlisted as part of broad financial performance. The Return on Assets (ROA) ratio, Return on Equity (ROE), Return on Investments (ROI), Earnings per Share (EPS), and profit margin are frequently used to analyze financial performance (Matar & Eneizan, 2018). ROA divides profit before tax by total assets, ROE divides profit before taxes by total equity while ROI divides profit before tax by investments made.

Organizations adopt different measures based on philosophies and set plan beforehand that are used for comparison purposes with time. Company performances are also compared with industry standards to gauge positions relative to the industry. This study will measure financial performance using ROA due to the simplicity of gathering data for the research period and for purposes of homogeneity across agricultural enterprises listed at the NSE. Numerous factors, both internal and external to organizations, have an impact on financial performance. Internal factors are easy to influence by the firm and range from management efficiencies, liquidity, capital structure, capital adequacy and organizational size (Chasmi & Fadaee, 2016).

Efficient management structures for instance that ensure both technology and employees meet targets while adhering to country and industry requirements will lead to better financial performance. Studies by Kedia (2016), Burja (2011) and Mudida (2008) showed that good liquidity management, capital management and proper resource utilization led to high financial performance of organizations. External factors include inflation, interest rates movements in the market, socio-cultural factors, politics and government policies and economic performance and these are hardly influenced by individual organizations. Anticipated and steadily rising inflation coupled by growing interest rates are good for businesses and lead to high performance (Hall, 2017; Durmus,

2019). Aspects such as Covid-19 and other pandemics, and unstable government structures adversely affect financial performance in organizations (Narsaiah, 2020).

1.1.3 Capital Structure and Financial Performance

Generally, the capital structure of an organization, is expected to influence the financial performance of an organization to a given extent depending with the proportions of the different components of capital (Xu et al, 2012; Ana et al, 2012; Narsaiah (2020); Opoku-Asante, Winful and Neubert (2022); Masavi et al (2017). This is because in such circumstances, manageable debt level set in organizations when achieved results in minimal costs of servicing debts, financial distress costs and reduced risk of defining business in line with debt obligations. The right capital structure also avails needed capital for investing in projects, pursuing market expansion strategies and meeting liquidity needs, aspects that result to improved financial performance. On the contrary, the employment of relatively large debt sizes in the capital structure of an organization adversely affects its financial performance. Large debt comes with associated high fixed financing costs that “eat into” company profits and may require adherence to debt covenants that may at times limit maximum pursuit of goals.

According to Modigliani and Miller (1958) and studies by Kimencu (2018) however, the capital structure of an organization has little bearing on its financial performance. A business’s performance is highly influenced by more broader factors classified under internal and external, of which, capital structure plays a minimal role. Such aspects include management’s efficiency, liquidity, size of the organization, inflation, political atmosphere, economic performance levels, and technology in use. In as much as the organization of the forms of capital used is critical in the early phases, the management philosophy and other enlisted factors are the ultimate determinants of financial performance. A firm with well-defined equity to debt ratio for instance may fail to

exploit the market to achieve high performance when inflation is generally high and unanticipated and when the atmosphere is covered by political instability.

1.1.4 Agricultural Firms Listed at the Nairobi Securities Exchange

Agricultural businesses are licensed and registered entities that deal in the production, processing and distribution of agricultural products such as crops and animal products (Xu et al, 2021). In Kenya, the firms either specialize or undertake multiple activities such as dairy farming and their products, beef farming and their products, coffee, tea, pyrethrum farming and processing, and poultry farming, processing and distribution (Masavu, Kiweu & Kinyili, 2017). Despite the existence of several agricultural firms across the 47 counties, at the Nairobi Securities Exchange, just seven have been listed (NSE). These include Williamson Tea, Sasini Ltd., Rea Vipingo plantations, Kakuzi, Limuru Tea, Eaagards Ltd., and Kapchorua Tea (NSE, 2022). The Capital Market Authority has granted NSE a license, and it is required that it lists companies on the Kenyan stock market so that investors can trade in them and ensuring health of exchange of securities. Other than the enlisted, the bourse supports trading and clearing settlement of fixed income, equity, derivatives, and other associated instruments. Agricultural firms that are large and meet requirements for listing would therefore pursue listing to gain from some of the enlisted benefits such as trading on instruments and improving visibility to investors (Kadi, 2016).

Agricultural Companies listed at the NSE have been playing critical roles in employment creating across the country and in supporting economic development through production and payment of taxes (Kimencu, 2018). Despite the contribution to societies, performance of agricultural securities has been lagging at the NSE for a better part of the year (Standard, 2022). The past decade has also presented difficult times for the agricultural firms with the likes of Mumias Sugar exiting business due to continued loss making. The firms have had to juggle between equity and debt with some

choosing pure forms while others settling on defined proportions. Kakuzi Plc for instance had Kes 5.54B and Kes. 5.57B in equity and zero long term debt in 2021 and 2020 respectively (Kakuzi, 2022). Sasini Ltd on the other end had equity only for the two years, moving from Kes 8.5B in 2020 to Kes. 8.7B in 2021 (Sasini, 2022). Whether capital structure is of importance towards financial performance of the firms or just a part of the many influencers of performance is still a developing concept in Kenya that needs critical understanding.

1.2 Research Problem

The concept of capital structure and financial performance of organizations has continued to stimulate debates across centuries; with some scholars pointing at the existence of a significant relationship while others showing the lack of any direct association between the variables. In the financial growth life cycle theory, for instance, Berger and Udell (1998) show that firms are likely to improve in performance as they access different forms of financing in their growth cycle. Their position runs contrary to Modigliani and Miller's 1958 theory, which claimed that an organization's capital structure had no bearing on its worth. In their proposal; Miller and Modigliani (1958) had viewed organizational value as a function of risk and magnitude of cash flows generated by capital assets in a perfect market scenario.

Listing of institutions on Securities Exchanges globally has been providing the ease of raising equity while at the same time allowing firms to enjoy high bargaining power for loans, an aspect that could imply more capital and high performance under good management. Unfortunately, this has not been the case across board with cases of agricultural firms like Mumias Sugar Company from Western Kenya recording losses and even closing operations. Further, the impact of exchanges on organizational ability to raise funds has been relatively minimal amongst developing countries according to Masavi et al (2017). This could be probably due to the low levels of

understanding of the functioning of the exchanges markets and relatively lower confidence by investors in the exchanges.

Debates on the most suitable capital structure to follow still exists in the management of agricultural firms globally; with some institutions preferring more debt to equity while others maintaining an equal weighting. With most of the agricultural firms listed at the NYSE having higher debt in their capital structure as indicated by an average debt-to-equity ratio of 2.46, a likely conclusion would be comparative advantages obtained through debt financing than equity financing (NASDAQ, 2022). In China, the situation could be slightly different amongst listed agricultural firms, as most prefer more equity to debt in their capital structure (Xu et al, 2021). In Kenya, with the likes of Kakuzi Plc and Sasini Ltd having an all-equity capital structure is a likely preference of equity amongst the agricultural firms to debt (Masavu et al, 2017). Assessing capital structures of the agricultural firms from a global, regional, and local perspectives and the benefits of specific structures may help settle the corporate debate on the most suitable capital structure.

Based on Xu et al.'s (2021) analysis of the capital structure and financial performance of listed agricultural enterprises in China, both the overall debt ratio and the short-term debt ratio had a detrimental effect on financial performance and the long-term debt ratio had little of an effect on ROE and ROA. Other than focusing on the Chinese market which could be slightly different from the Kenyan space in terms of macroeconomics, the study by Xu et al (2021) was limited to debt ratio and short-term debt ratio as the metrics of capital structure. In Macedonia, Ana et al (2012) had shown that agricultural firms preferred more equity to debt due to asymmetries between loan markets and national capital, highly leveraged agricultural enterprises did not have more opportunity to profit. This study presents findings of a relatively long while ago. Changes with time could have influenced greatly on capital structure and company performance in Macedonia.

The short-term debt ratio, long-term debt ratio, and return on equity all exhibit a negative correlation, according to Narsaiah (2020), who focused on 100 manufacturing firms listed at the Bombay Stock Exchange in China. This study by Narsaiah (2020) was limited to manufacturing firms in China, a context that could be slightly different from that of Kenya, the NSE listed agriculture companies.

Opoku-Asante, Winful and Neubert (2022) with a study in Ghana and Nigeria found an adverse connection in relation to financial performance and capital structure. This study was limited to debt maturity as the gauge of capital structure despite the existence of other comprehensive metrics. The financial performance of listed companies was significantly and adversely impacted by total debt, according to Addae et al's (2013) study on the capital structure and profitability of listed firms in Ghana between 2005 and 2009. Other than covering all listed firms in Ghana, the research by Addae et al (2013) reflects findings of a relatively long while ago. Changes introduced with time such as Covid-19 pandemic could have altered according to the study, capital structure has an impact on performance

Masavi et al (2017) with a focus on agricultural businesses listed at the NSE found that financial performance was significantly impacted by capital structure, with debt ratio positively relating to financial performance, and an increase in equity combinations significantly reducing after tax profits of listed agricultural firms. Kimencu (2018) covering 2011 to 2015 discovered that to assess the capital structure, debt to asset and debt to equity ratios used had small and insignificant effect on performance as measured using ROE, earnings yield and net profit margin. Other than presenting contradicting study findings even after covering an almost similar time period, the two studies in Kenya present findings in the pre-Covid-19 period, an aspect that could have significantly affected the variables under study.

Based on the review, certain studies indicated capital structure and financial success have a significant positive correlation while others showed adverse correlation between the variables while others showed insignificant effect of capital structure. the majority of the papers examined also reflect a period before Covid-19, an unprecedented phenomenon that could have impacted significantly on capital structure decisions and performance. Therefore, the current study aimed at closing the knowledge gaps and offer a thorough contemporary evaluation of the ideas on capital structure and financial performance of agricultural enterprises listed at the NSE.

1.3 Objectives of the Study

This research main objective aimed at ascertaining whether agricultural enterprises listed at the Nairobi Securities Exchange's capital structure and financial performance are correlated.

1.4 Value of the Study

The research analysis on agricultural enterprises' capital structures and financial health listed at the NSE are expected to add to existing studies on the topics of determinants of financial performance. The findings may contribute to the field of academics positively by renewing focus on agriculture companies' capital structures and financial results in developing nations. Further still, the study findings may introduce newer perspectives of understanding the concepts of financial standing of listed agricultural businesses in the modern times during and after Covid-19 pandemic.

The findings of the research on capital structure and listed companies' financial performance on agricultural firms are expected to support managers of the institutions in decision making around optimal capital structure. The managers of agricultural companies may use the recommendations of the study in addition to their knowhow of firm and industry performance to craft strategies of achieving high financial performance.

Managers of institutions are also anticipated to benefit from the study's findings in other sectors such as manufacturing, banking, insurance, media houses and even assembly. These institutions also undertake different structures of their capital based on internal philosophies to industry requirements. Understanding the impact of capital structure from the agricultural perspectives may help stimulate discussions on best ways of structuring financing in order to optimize financial performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

An examination of the literature on capital structure and financial performance in the agriculture sector is presented in this chapter. The chapter addresses the theoretical framework and a study review conducted on the topic from a global, regional, and local perspectives. Research gaps from the previous studies and how they will be addressed are also presented in the chapter.

2.2 Theoretical Framework

The ideas that serve as the basis for comprehending the current investigation are discussed in this part. This section goes into great detail on the Pecking Order Theory and the Capital Structure Irrelevant Theory.

2.2.1 Pecking Order Theory

According to Myers and Majluf's theory (1984) of the Pecking order which states that managers in organizations follow a hierarchy while considering financing options to undertake to reduce costs related to agency cost issues and adverse selection. The firm in this case has two sources of financing; utilizing internal source of retained earnings and external funds in the issuing of debt and equity. The theory states that information imbalance exist between a firm's internal management and the external financiers and as such the financiers would ask for higher compensation for their funds before lending out to organizations. In equity issuance for instance where external investors are invited in the firm's ownership structure managers may take advantage of information asymmetry and value share pricing differently. With this understanding, managers will therefore choose to utilize internal retained funds to finance operations until depletion, before going for debt and finally for equity funding. This theory maintains that debt

usage signifies confidence in operations and that the firm's value is undervalued while the use of equity shows low confidence levels in the management and an over-valued firm value (Vasiliou et al, 2009).

The pecking order theory will be relevant in elaborating the capital structure and financial performance of institutions. Agricultural institutions, just like other established entities in other sectors have a management structure and require finances to meet liquidity, solvency and other investment needs (Kinyua & Muriu, 2017). In line with the theory, these entities will use their retained earnings and internal funds to meet with the needs before deciding to go for debt funding after depletion of the internal ones (Addae et al, 2013). This frequently works to cut expenses like agency fees and adverse selection costs. Given that some of the institutions are listed at securities exchanges and have a strong asset bases; they can choose to raise funds by issuing new shares or borrow from banks. Due to knowledge asymmetries, financial institutions must charge interest, but agency costs for extra equity investors may also be recovered from stock issuance. Given that costs cannot be fully avoided, the institutions structure their capital in such a way as to optimize on utilization and costs. This is the aspect that will guide the study's discussion in capital structure and subsequent financial performance.

2.2.2 Capital Structure Irrelevance Theory

The foundation of the capital structure irrelevance theory is Modigliani and Miller's artwork (1958) who argued that there is no relationship between value of a firm and its financing mix in a perfect market situation. Assumptions in their proposition included: homogenous expectations, homogenous risk class, risk-less debt, effective capital market and zero growth rate. According to the proposition, the amount and risk associated with cash flow produced only by capital assets determines a company's market value in a world without corporate taxes. In this scenario, debt to

equity ratio solely outlined the distribution of the stream of future financial flows between shareholders and debt holders. In an advanced model that incorporated taxes, because the cost of debt interest was tax deductible and the levered organization did not receive any further benefits, Miller (1963) claimed that leverage increased firm value.

Capital structure irrelevance theory has been relevant in concept development concerning capitalization and financial performance of agricultural firms. Putting into consideration the assumptions of a perfect market, homogenous expectations, existence of homogenous risk class, risk-less debt and zero growth rate, mix between debt and equity in the firms wouldn't affect the value of the enterprise (Mudany et al, 2020). This value would however be explained by operating activities, risk management and cash flow generated by the firms. Relaxing the assumptions and introducing corporate taxes as advanced by Miller (1977) would imply that leverage affected performance and value of the firm.

2.3 Factors Affecting Performance of Agricultural Firms

Performance of agricultural organizations is affected by several factors, both within the organization and those outside the organization. Internal organizational factors are often easily influenced by firms and include aspects such as capital structure, management efficiencies, liquidity and size. External factors affect all organizations in each industry and are rarely influenced by individual organizations. This section presents a discussion of common factors affecting performance of agricultural firms enlisted as capital structure, liquidity, organizational size, inflation, interest rates and economic growth rate (Chasmi & Fadaee, 2016), Fatihudin & Mochklass, (2018).

2.3.1 Capital Structure

This is ratio of debt to equity is used to fund an institution's long-term goals and activities (Titman et al, 2017). Short term and long term loans obtained by a company to finance its business are known as debt while equity covers preference shares, common stakeholders' equity and retained earnings. Having debt comes with requirements of paying fixed interest and additional fees together with principle at the end of agreed periods. In the case of preference and ordinary shareholding, the company issues defined number of shares at predetermined prices in exchange for ownership (Mudany et al, 2020). This kind of capital comes with costs such floatation costs, agency costs and may result to dilution of existing shareholding. Owners in this case share in the dividends of the company based on policies adopted (Matar & Eneizan, 2018). Retained earnings on the other end are part of equity that involves ploughing back part of company's profits, and this comes at zero costs. A levered firm is one that has debt in its structure, while that without debt is said to be unlevered.

A research by Masavi et al (2017) pointed that capitalization impacted positively the business's performance of organizations. In the study, capital structure increased business value, maximized wealth of shareholders and reduced the cost of capital. An efficient capital structure plan also ensures that organizations take advantage of their bargaining power with suppliers of finances and existing wealth creation opportunities (Kumar et al, 2017). The findings were in line with the tradeoff theory which stated that leverage positively related to profitability in organizations. Theories by Modigliani and Miller's (1958) demonstrated the capital structure lacked bearing on the value and the business's performance. In their proposition, performance was determined by operations and cash flow generating activities. Narsaiah (2020) and Xu et al. (2021) found that financial performance was negatively impacted by the overall debt ratio and the short-term debt ratio but not by the long-term debt ratio, which had no effect on ROE or ROA. Ana et al (2012)

with a study in Macedonia and due to asymmetries between the loan markets and national capital, Opoku-Asante et al (2022) research in Ghana shown that highly leveraged agricultural enterprises did not have more potential to produce higher profit.

2.3.2 Organizational Size

The size of an institution is defined in various metrics right from the number of employees, number of clients served and the size of assets possessed (Tharu & Shreshtha, 2019). A common definition of size of organizations is the total amount of resources owned and controlled by the entity and this is measured as the total asset size. Large size of an institution implies that the organization has enough resources to handle internal operations, meet budgets and even expand operations (Kedia, 2016). Large entities are also able to attract and serve a wide range of clients and attract requisite employees to steer the organizational performance towards a positive direction.

Studies by Aladwan (2015) in Jordan revealed that the institution's size have a positive effect on its profitability. This, is because the institutions with large resource capacity have the ability of undertaking aggressive marketing, acquire appropriate technology and human resource to steer performance in the right direction. Parvin et al (2016) and Tharu and Shreshtha (2019) however discovered that bank profitability was unaffected by size in a statistically meaningful way. According to these scholars, there exist other factors other than size in the financial institutions that have the ability to stimulate profitability. These variables include liquidity, management efficiencies, capital adequacy and external factors such as interest rates, inflation and economic growth rates.

2.3.3 Inflation

It is believed that inflation is the overall increase in prices of commodities in a given country at a particular period of time (Andre, Rafael & Andre, 2018). Consumer Price Index, Wholesale Price

Index, and Producer Price Index are common methods used to calculate inflation. The CPI calculates the weighted average price of a selection of products and services that are consumed over a specific time period (Durmus, 2019). WPI and PPI on the other end present the average weighted price of a shopping basket before they reach the consumer. The comparison of the indices from time to time is what gives rise to an inflation rate used in societies. An increasing percentage implies that the rate of inflation is rising while reducing percentages indicate that the level of inflation is declining. Types of inflation include demand-pull inflation that comes as a result of increasing demand, supply induced inflation and artificial inflation that is created through hoarding and other regulatory practices (Andre et al, 2018).

Anticipated inflation that involves small percentages can have a positive impact on businesses and general consumers' financial positions (Amadeo & Boyle, 2021). In this case, faithful borrowers can repay their loans on time and cause the amount of non-performing loans to reduce. Unanticipated inflation on the other hand comes with adverse effects such as collapse of businesses, reduction in purchasing power of consumers and low levels of money circulation in the society (Durmus, 2019). Banks will also find it hard to adjust the prices of loans and other products in order to counter inflation. Unanticipated inflation may make customers to pull out from the banks which reduce the number of savings and loans issued out. Customers with loans may even default on payments due to harsh economic times.

2.3.4 Economic growth rate

Refers to changes in output of a given country over stated time periods (Kadi, 2016). Output means the total quantity of goods and services generated from an economy through manufacturing processes, service provisions, agricultural activities and other productive activities in a nation. Economic growth rate can be measured using the input approach whereby the sum of all resources

enlisted in productive activities is used, expenditure approach whereby total spending from the different sectors of the economy is used in measurement and the output approach. The most common indicator of economic growth is Gross Domestic Product (GDP) Changes.

Growing economies present opportunities for businesses to make more income and even attracts investors in the local space. Financial institutions lend at relaxed terms in such economies, enabling organizations to invest in additional resources and maximize profitability. Studies by Mugiwa (2018) showed the existence of an excellent connection between economic performance and performance of organizations. In the study, governments reduce restrictive policies in stably growing economies, allowing entities to establish themselves and achieve desired performance. Infrastructure also develops in such cases, while taxes are maintained at suitable rates, encouraging organizations to maximize their potential. On the other end, poorly performing economies with high levels of unemployment increase risk for business operations. Businesses also perform poorly as shown in the study by Matar and Eneizan (2018), laying off workers and restricting in bids to influence positive performances.

2.4 Empirical Literature Review

A study on the capitalization and financial success of the agricultural industry in China was conducted by Xu et al. in 2021. The goal of the research was to prove how capital structure affected the financial performance of Chinese listed agricultural enterprises between 2013 and 2019. To measure capital structure, total, short-term, and long-term debt ratios were used. ROA and ROE were then used to evaluate financial performance. Chinese Stock Market and Accounting Research Database provided the secondary data, the research used panel regression estimation. Overall both debt ratio and short-term debt ratio had an adverse effect on financial performance, according to the study's findings, long-term debt ratio insignificantly affected ROE and ROA. This study relied

on secondary data in its methodology, a point that is subject to manipulation by organization's management. The study also covered agricultural companies in China, a context that could be slightly different from that of listed firms in Kenya. As such, the study cannot be fully relied upon in predicting findings of the current investigation of the financial results and capital structure of Kenya's listed agricultural companies.

An examination of agricultural enterprises' capital structures and financial results was conducted in Macedonia by Ana et al. in 2012. Dynamic panel data analysis of 26 agricultural businesses in Macedonia that were once part of agrokombinates from 2006 to 2010 was used. Financial performance was assessed using ROA, debt to equity ratio and the debt ratio were used to examine the capital structure determinant. Findings of the study showed that in the short run, country's agricultural enterprises were constrained in their efforts to boost profitability by price flexibility. Findings further showed that due to asymmetries between credit markets and national capital, which increased exposure risk, highly leveraged agricultural enterprises did not have greater opportunity to produce bigger profits. As a result, while taking financial risk into consideration while making long-term decisions, Macedonian agricultural enterprises chose more equity than debt. The study methodology was limited to empirical review, focusing on the period 2006 to 2010. The study also covered all agricultural firms broadly rather than the listed ones, a context that could be limiting in nature given that some benefits come with listing on exchanges. As such the study's conclusions on the capital structure and financial performance of agricultural enterprises listed at the NSE cannot be fully predicted by it.

100 industrial businesses listed at the Bombay Stock Exchange were the subject of a study on their capital structures and financial performance in India between 2014 and 2019 which was conducted by Narsaiah (2020). In order to analyze panel data in the research, econometric models were used

and also used Fixed effect, OLS estimation, Hausman test, Random effect and Ramsey RESET methodology. Four metrics were used to gauge financial success: ROA, ROE, EPS, and Tobin's Q. Descriptive and regression analysis were performed on the data. According to the study's results, there was a poor linkage between ROE, STDR, and LTDR. The findings also showed a substantial inverse correlation between the capital structure measures LTDR and TDR and the financial performance metrics EPS, ROA, and Tobin's Q. The scope of this research was restricted to manufacturing companies registered on the Bombay Stock Exchange, which may differ slightly from agricultural enterprises listed at the NSE. This maybe, with regards to firm structure, country financial system, industry environment and even the political climate; aspects that greatly define capital structure strategies and overall robust performance.

A research project on capital structure and its association with financial success of enterprises in Ghanaian towns and Nigerian cities was carried out by Opoku-Asante et al. in the year 2022. The research employed sectoral analysis, while considering the effect of debt maturity under capital structure. 425 cross sectional firm year samples for the period 2014 to 2019 from firms in Ghana and Nigeria were used in the study. Data analysis included the use of regression analysis. Results of the study showed there being a poor connection between financial prowess and capital structure. The association of capital structure and performance in specific market sectors was modified by debt maturity as a metric of capital structure. This research covered companies in different sectors in Nigeria and Ghana; the current research will be narrowing down to listed agricultural businesses in Kenya.

A research within the capital structure and profitability of publicly traded businesses in Ghana between 2005-2009 was undertaken by Addae et al. (2013). The study employed descriptive survey design, targeting 34 out of the 35 listed firms on Ghana Stock Exchange. Secondary data collected

from Ghana Stock Exchange's published workbook was used in the study. Data analysis was done by regression analysis. In this research, conclusions demonstrated; debt-to-income ratio was negative and considerable on the impact of listed companies' financial performance. Furthermore, research revealed that listed Ghanaian Companies in Ghana tended to depend more on short-term debt than long-term debt. This study reflects findings of a relatively long while ago. Changes introduced with time both within organizations and in the external environment could have changed the view capital structure and financial performance in perspective. The project also covered all listed firms on the Ghana Stock Exchange rather than focusing on defined sectors like the agricultural sector, an aspect that could be overshadowing in nature.

A research project on the capital structure and financial performance of agricultural enterprises available on the Nairobi Securities Exchange was conducted by Masavi et al. in 2017. Six agricultural companies that are listed at the NSE were the target population of the research, which used a longitudinal research approach. Between 2010 to 2014, the research employed secondary data collection through desk research from published financial statements of the companies. Both descriptive and inferential statistics were used to examine the acquired data using SPSS. The results of the study demonstrated that debt ratio had a favorable impact on financial performance, whereas an increase in equity combinations resulted in a significant drop in after-tax profits. It was discovered that capital structure significantly affected the companies' financial performance. From 2010 to 2014, 6 agricultural businesses were listed at the NSE were the only ones included in the study, some of which could have delisted while new ones could have enlisted in the most recent times. As such the study cannot be fully relied upon to predict capital structure and financial performance of agricultural enterprises in the most recent times.

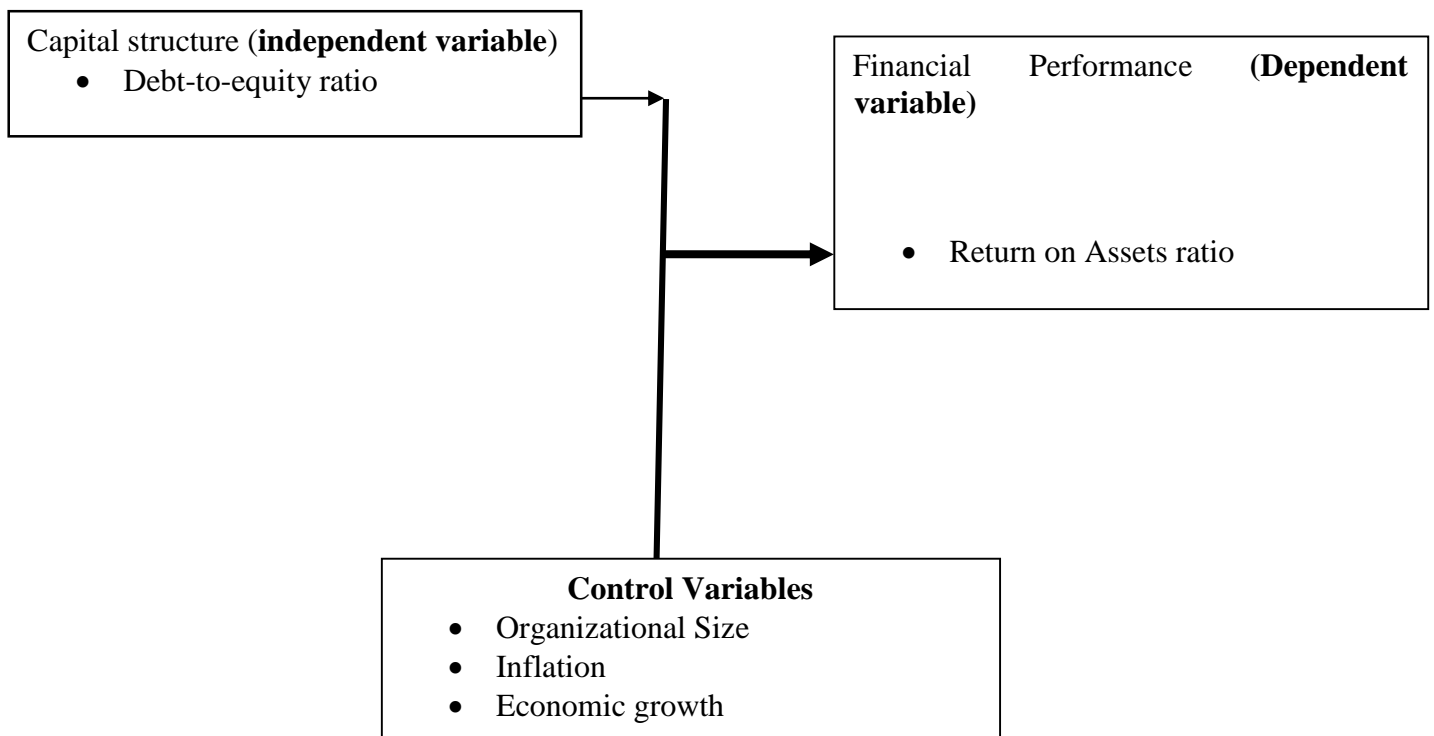
An examination of the capital structure and monetary performance of agricultural businesses listed at the NSE between 2011 to 2015 was undertaken by Kimencu (2018). Specific objectives included determining the relationship between debt to equity ratio and ROA, the impact of debt to equity ratio on earnings yield, and the impact of debt to assets ratio on profit margin. The research employed a descriptive research design with the seven agricultural companies listed at the stock exchange: Kapchorua Tea Ltd., Eaagads Ltd., Kakuzi Ltd., Limuru Tea Ltd., Sasini Ltd., and Williamson Tea Kenya Ltd as well as Rea Vipingo Plantations Ltd as the target population. Census survey was therefore used due to the small population, with secondary data being relied upon. Utilizing descriptive and regression statistics, the acquired data was examined. Results indicated that each independent variable enlisted as debt-to-asset and debt-to-equity ratio had small insignificant effect on performance as measured using ROE, earnings yield as well as net profit margin. The analysis found that debt to assets ratio did not play a significant role in improving performance and neither did debt to equity ratio. This study still reflects findings of the period 2011 to 2015, a relatively long while ago before even the Covid-19 that caused havoc globally. Relying on the research fully to predict financial performance and capital structure of listed agricultural enterprises in most recent times could be misleading.

A study on the financial leverage and performance of agricultural enterprises on the NSE was undertaken by Muturi in 2019 in Kenya between 2011 and 2015. The research used a descriptive and analytical research design and relied on secondary data gathered from NSE, CMA, and agricultural enterprises' annual reports released. Information gathered was examined using ordinary Least Squares method under multiple regression analysis. The study results indicated that debt to equity ratios had a slight but positive impact on ROA. The study also revealed that the moderating impact of organizational size could not change the positive and insignificant impact of debt-to-equity on performance. The research was limited to an earlier period 2011 to 2015, an

aspect that could be different to the current happenings as influenced by factors such as Covid-19 pandemic, country politics and changing technology.

2.5 Conceptual Framework

This study's primary focus was on capital composition and financial performance of agricultural enterprises listed at the Nairobi Securities Exchange. Financial performance as determined by ROA was the research's dependent variable. Capital structure, as determined by the debt-to-equity ratio, was the primary independent variable in the study. Control variables in the study included organizational size, inflation, and economic growth. This section presents a diagrammatic representation of the study objective and study variables.



Source: Researcher (2022)

Figure 1: Conceptual Framework

2.6 Summary of Literature Review and Research Gaps

Table 2.1 presents highlights of the studies reviewed on the topic of capital structure and financial performance in organizations. The focus of each study previewed has been highlighted, together with the methodology adopted and their research findings. The table also highlights research gaps and explains how the gaps were addressed in the current study.

Table 2. 1: Summary of Literature and Research Gaps

Author(s)	Focus of Study	Methodology	Research Findings	Research Gaps	How gaps are addressed in current study
Xu et al. (2021)	Capitalization and financial success of the agricultural industry in China	Capital structure was measured using total debt ratio, short term debt ratio, and long-term debt ratio while financial performance was measured using ROA and ROE. The study employed panel regression estimation technique, relying on secondary data sourced from China Stock market & Accounting Research Database.	Total debt ratio and short-term debt ratio had a negative effect on financial performance while long term debt ratio did not have any significant impact on ROE and ROA.	This study relied on secondary data in its methodology, a point that is subject to manipulation by organization's management. The study also covered agricultural companies in China, a context that could be slightly different from that of listed firms in Kenya.	The current study will focus on Capital structure and financial performance of agricultural firms listed on the NSE
Ana et al (2012)	Capital structure and financial performance of agricultural companies in Macedonia	Dynamic panel data analysis consisting of 26 Macedonian agricultural firms originating from the former Agrokombinates in the period 2006 to 2010 was used in the study. Financial performance was measured using ROA, while capital structure determinant was tested using debt to equity ratio and the debt ratio.	Findings showed that highly levered agricultural companies did not have higher opportunities to make higher profit probably due to asymmetries between credit markets and national capital, increasing risk of exposure.	The study methodology was limited to empirical review, focusing on the period 2006 to 2010. The study also covered all agricultural firms broadly rather than the listed ones, a context that could be limiting in nature given that some benefits come with listing on exchanges.	The current study will focus on Capital structure and financial performance of agricultural firms listed on the NSE

Narsaiah (2020)	Capital structure and financial performance of 100 manufacturing firms listed at the Bombay Stock Exchange for the period 2014 and 2019	The study employed econometric models for panel data analysis and used Fixed effect, OLS estimation, Hausman test, Random effect and Ramsey RESET methodology. Financial performance was measured using four ways named ROA, ROE, EPS, and Tobin's Q. Descriptive and regression analysis were employed on the data.	There was a negative relationship amongst short term debt ratio (STDR), Long term debt ratio (LTDR) and ROE. Further, there was a significant negative relationship amongst capital structure metrics enlisted as LTDR and TDR with financial performance metrics enlisted as EPS, ROA and Tobin's Q.	This study was limited to manufacturing firms listed at the Bombay Stock Exchange; a context that could be slightly different from agricultural firms listed at the NSE. This could be with regards to firm structure, country financial system, industry environment and even the political climate; aspects that greatly define capital structure strategies and overall firm performance.	The current study will focus on Capital structure and financial performance of agricultural firms listed on the NSE
Opoku-Asante et al (2022)	Capital structure and its relationship with financial performance of firms in Ghana and Nigeria.	The study employed sectoral analysis, while considering the effect of debt maturity under capital structure. 425 cross sectional firm year samples for the period 2014 to 2019 from firms in Ghana and Nigeria were used in the study. Regression analysis was used in the analysis of data.	There was a negative relationship between capital structure and financial performance. Debt maturity as a measure of capital structure influenced the relationship between capital structure and performance in some sectors of the market.	This study covered firms in different sectors in Nigeria and Ghana while the current study will be narrowing down to listed agricultural firms in Kenya.	The current study will focus on Capital structure and financial performance of agricultural firms listed on the NSE
Addae et al (2013)	Capital structure and	The study employed descriptive survey design, targeting 34 out of the 35	Total debt had a negative and significant impact	This study reflects findings of a relatively long while	The current study will focus on Capital structure

	profitability of listed firms in Ghana during the period 2005 and 2009	listed firms on Ghana Stock Exchange. Secondary data collected from Ghana Stock Exchange's published workbook was used in the study. Data was analysed using regression analysis.	on financial performance of listed firms. Further, listed firms in Ghana relied more on short term debt than long term debt.	ago. The study also covered all listed firms on the Ghana Stock Exchange rather than focusing on defined sectors like the agricultural sector, an aspect that could be overshadowing in nature.	and financial performance of agricultural firms listed on the NSE
Masavi et al (2017)	Capital structure and financial performance of agricultural companies listed in Nairobi Securities Exchange	The study employed longitudinal research design, targeting a population of 6 agricultural companies listed at the NSE. Secondary data obtained using desk research from published financial statements of the companies was used in the study for the period 2010 to 2014. The data collected was analyzed using descriptive and inferential statistics with the aid of SPSS.	Debt ratio had a positive effect on financial performance, while an increase in equity combinations led to a significant reduction in after tax profits. Capital structure was found to have a significant impact on financial performance of the companies	The study was limited to 6 agricultural firms listed at the NSE between 2010 and 2014, some of which could have delisted while new ones could have enlisted in the most recent times.	The current study will be based on Capital structure and financial performance of agricultural firms listed on the NSE using an updated checklist
Kimencu (2018)	Capital structure and financial performance of agricultural firms listed at the NSE	Descriptive research design was employed in the study, with target population comprising of seven listed agricultural firms listed as Kapchorua Tea Ltd, Eaagads Ltd, Kakuzi Ltd, Limuru Tea Ltd, Sasini Ltd and Williamson Tea Kenya Ltd	Each independent variable enlisted as debt to asset and debt to equity ratio had small and insignificant effect on performance as measured using ROE, earnings yield	This study still reflects findings of the period 2011 to 2015, a relatively long while ago before even the Covid-19 that	The current study will be based on Capital structure and financial performance of agricultural firms listed on the NSE

for the
period 2011
to 2015

and Rea Vipingo Plantations
Ltd. Census survey was
therefore used due to the
small population, with
secondary data being relied
upon. Data collected was
analysed using descriptive
and regression statistics.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research approach for this study on the capital structure and financial performance of agricultural enterprises listed at Kenya's Nairobi Securities Exchange (NSE) is presented in this chapter. This chapter presents the research design that was employed, target population, data collection methodology and methods that were employed in analyzing data and presenting findings.

3.2 Research Design

The study employed descriptive research design. Based on Kothari (2014) descriptive survey research design aims at accurately and systematically explaining the variables and situations under study in details. This research methodology was employed in the research to describe capital structure and financial performance of agricultural enterprises listed at the NSE. To ascertain the connection between capital structure and financial performance of listed agricultural enterprises listed at the Nairobi Stock Exchange in Kenya, the research also applied a co-relational research methodology.

3.3 Target Population

Agricultural companies listed at the NSE over the eight-year period from 2014 to 2021 formed the focus of this study. According to reports by NSE, the number of agricultural firms in this period ranged from 7 to 8, with one of the entities delisting in 2018. The investigation concentrated on seven businesses, which are Williamson Tea, Eaagards Ltd, Kapchorua Tea, Limuru Tea, Kakuzi, Rea Vipingo Plantations, and Sasini Ltd. (NSE, 2022) for consistency in data collection and

availability of the data. The study employed census survey rather than sampling due to small population.

3.4 Data Collection

Secondary data was used in this investigation. Data on specific debt and equity amounts, profit before tax, and asset totals, information on agricultural companies listed at the NSE was found in the yearly financial reports of the institutions for the period 2014 to 2021. Data on GDP values and CPI rates was acquired from CBK and KNBS. The data collected was used to calculate measures of capital structure, financial performance, organizational size, inflation, and interest rates using defined metrics like ROA, ROE, log of assets and inflation rates. In the research, financial performance was the dependent variable while capital structure was the main independent variable. Control variables in the study included annual inflation, economic growth, and organizational size.

3.5 Data Analysis

Descriptive and inferential statistics were used to examine the data in this research after cleaning and editing the secondary data collected. Descriptive analysis helped in assessing capital structure strategies by analyzing the mean, standard deviation, minimum and maximum data values. The objective on determining the relationship between capital structure and financial performance was accomplished with the aid of inferential statistics. Under inferential statistics, the study relied on Pearson Correlation (R), Coefficient of determination (R squared), F test, and T test. The study assumed a linear regression model specified as below:

Financial performance = f (capital structure, other control variables)

ROA = f (capital structure, organizational size, Inflation, economic growth rate)

Simplified as;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + E$$

Y = (ROA, the intention being to develop a profitability and efficiency matrix as borrowed from Xaba et al. (2018), to enable classify the firms as stars, dogs, sleepers etc)

β_0 = Constant term

X_1 = Capital structure

X_2 = Organizational size

X_3 = Inflation

X_4 = Economic growth rate

E = Error

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficient of the variables

3.5.1 Operationalization of Study Variables

The return on assets; is the proportion of profit before taxes to total assets (ROA). This is a typical metric for profitability in Kenyan listed companies. For the years 2014 to 2021, ROA was calculated for all listed agricultural enterprises in Kenya.

Efficiency; the ratio of operating revenues to operating expenses as measured using DEA Model

Capital structure: The debt-to-equity ratio for the years 2014 through 2021

Organizational size: total asset sizes of all Kenyan agricultural companies with a public listing from 2014 to 2021. This was standardized using Log.

Inflation: was measured using CPI value from 2014 to 2021

Economic performance: GDP growth rate for the period 2014 to 2021

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the analysis of data and a discussion of findings on the topic of capital structure and financial performance of agricultural firms listed at the Nairobi Securities Exchange. Secondary data collected from annual reports of the agricultural firms for the period 2014 to 2021 was used in the study. The data was then analyzed using descriptive and regression analysis.

4.2 Descriptive Findings

Table 4. 1: Descriptive Findings

	MEAN	STD DEV	MIN	MAX
ROA	5.3%	11.4%	-13.2%	43.8%
D/E Ratio	27.3%	10.6%	8.5%	48.9%
Inflation (CPI)	153	27	109	184
Real GDP (M' Kes)	8,115,416	786,332	6,942,157	9,391,684
Size (Kes)	5,172,920,071	4,559,243,592	208,501,000	15,142,739,000

Research Data (2022)

Findings of the study revealed that the average performance of the listed agricultural firms in Kenya as measured using ROA ratio was 5.3%, with a standard deviation of 11.4%. The highest ever recorded ROA over the period 2014 and 2021 was 43.8% while the lowest ever recorded was -13.2%. The average Debt-to-equity ratio of the listed agricultural firms was 27.3%, implying that debt used was less than 50% amongst the firms. The highest debt-to-equity ratio recorded over the period was 48.9% with the lowest standing at 8.5%. The average inflation as measured using CPI was 153, with the highest in the period standing at 184 while the lowest was 109. The average GDP recorded in the period 2014 and 2021 in Kenya was 8.1Million KES, with the highest being 9.3Million KES. Findings further showed that the average size of agricultural firms listed on the

NSE as evaluated using total assets was 5.1Billion KES, with the largest recorded at 15.1Billion KES.

4.2.1 Profitability Efficiency Matrix

This section sought to provide a description on how the agricultural firms listed at the NSE performed with regards to profitability and efficiency. Profitability was measured using ROA while efficiency was assessed using DEA model where analysis was made on the operating revenues and operating expenses. The below matrix covers the classification of the firms in line with the findings

Table 4. 2: Profitability Efficiency Matrix

		Profitability	
		Low	High
Efficiency	Low	Kapchorua Tea (Eff = 5.17, ROA = 2.07%) (Q1 – Sleepers)	(Q2 – Question marks)
	High	Eaagards Ltd (ROA = -3.22%, Eff = 6.34) Limuru Tea (ROA = -3.37%, Eff = 6.21) Williamson Tea (Eff = 6.12, ROA= 2.21%) (Q3 – Dogs)	Kakuzi (Eff = 5.78, ROA = 12.36%) Rea Vipingo (Eff = 6.27, ROA = 24.06%) (Q4 – Stars)

Research Data (2022)

The study formed a profitability efficiency matrix showing the profitability in contrast to the efficiency of agricultural firms listed at the NSE. From the results the mean for profitability was 0.053 whereas the median for efficiency was 5.9. A matrix comprising of four quadrants as shown in table 4.2 was created, classifying the performance in relation to overall means of ROA and DEA.

Quadrant I is referred as sleepers, quadrant II is referred as question marks, Quadrant III is referred as dogs and Quadrant IV referred as the stars. Findings of the study revealed that only two of the listed firms were stars as confirmed by their posting of high profitability and high efficiencies in operations. These were Kakuzi with an Efficiency of 5.78, ROA = 12.36% and Rea Vipingo with Efficiency of 6.27, ROA = 24.06%. Three entities fell under question marks category, posting lower profits but exhibiting higher efficiencies. These included Eaagards Ltd (ROA = -3.22%, Eff = 6.34), Limuru Tea (ROA = -3.37%, Eff = 6.21) and Williamson Tea (Eff = 6.12, ROA= 2.21%). Only one firm as established in the study recorded lower profits over the study period and relatively lower efficiency. This was Kapchorua Tea with an efficiency ratio of 5.17, and ROA of 2.07%.

4.3 Diagnostic tests

The objective of this study was to determine the relationship between capital structure and financial performance of agricultural firms listed at the Nairobi Securities Exchange. The data collected was subjected to diagnostic tests. The study presumed a 95% confidence interval or 5% level of significance to make variable deductions on the data adopted. Diagnostic tests were useful for ascertaining the falsity or truth of the data. Therefore, the nearer to 100% the confidence interval, the more accurate the data used is presumed to be. In this case, normality test was carried out.

4.3.1 Normality Test

The normality test of the data was done using the Kolmogorov-Smirnov test. The threshold was that, if the probability was higher than 0.05, there is normal distribution in the data.

Table 4.1: Normality Test

	Kolmogorov-Smirnova		
	Statistic	df	Sig.
ROA	0.582	55	0.234

Efficiency	0.426	55	0.112
D/E Ratio	0.408	55	0.207
Inflation	0.342	55	0.198
GDP	0.471	55	0.221
Org Size	0.394	55	0.179

Source: Research Findings (2022)

The findings above indicated that data was normality distributed since the p values were greater than 0.05. Therefore, the null hypothesis of normal distribution was accepted meaning the researcher failed to reject the null hypotheses.

4.4 Correlation analysis

Table 4. 3: Correlation Findings

	ROA	D/E Ratio	Inflation	GDP	Org Size
ROA	1.000				
D/E Ratio	0.103	1.000			
Inflation	0.117	0.126	1.000		
GDP	(0.154)	(0.142)	(0.317)	1.000	
Org Size	0.401	(0.033)	(0.005)	0.048	1.000

Research Data (2022)

Findings of the study showed that the association between capital structure (D/E Ratio) and financial performance (ROA) was positive (R = +0.103). The association between inflation and financial performance (ROA) was positive (R = 0.117). The relationship between economic performance and financial performance of listed agricultural firms over the study period was negative (R = -0.154). The association between organizational size and financial performance was positive (R = 0.401).

4.5 Regression analysis

Table 4. 4: Regression Model Summary

Regression Statistics

Multiple R	0.450
R Square	0.203
Adjusted R Square	0.140
Standard Error	0.106
Observations	56

Research Data (2022)

Findings of the study showed an R value of the model of 0.450. This showed that the model had a moderate impact on financial performance of listed agricultural firms in Kenya. The R squared value of 0.203 showed that the model enlisting capital structure, organizational size, inflation and economic growth could only explain 20.3% of the variation in financial performance of agricultural firms listed on the NSE. The remaining 79.7% of the variation in financial performance of the firms were explained by variables not included in the current study and by chance factors.

Table 4. 5: Analysis of Variance

	Df	SS	MS	F	Significance F
Regression	4	0.146	0.037	3.244	0.019
Residual	51	0.574	0.011		
Total	55	0.720			

Research Data (2022)

Findings of the study showed an F test value of 3.244 and p value of 0.019. Given that a p value below 5% is considered significant according to Kothari (2013), the study considered the model with a p value of 0.019 significant at 5% level. The model was thus a good fit.

Table 4. 6: Regression Coefficients

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.864	2.517	0.740	0.462
D/E Ratio	0.096	0.137	0.698	0.488
Inflation	0.000	0.001	0.474	0.638
GDP	(0.167)	0.156	(1.068)	0.290
Org Size	0.036	0.011	3.280	0.002

Research Data (2022)

From the study findings, the y intercept was 1.864. Capital structure had a regression coefficient of 0.096 with a t stat value of 0.698 and a p value of 0.488. Inflation had a regression coefficient of 0.000 with a t stat value of 0.474 and a p value of 0.638. Economic growth had a regression coefficient of -0.167 with a t stat value of -1.068 and a p value of 0.290. Organizational size had a regression coefficient of 0.036 with a t stat value of 3.280 and a p value of 0.002. Given that a p value of the student t test below 5% is considered significant, the study established that only organizational size had significant effect on financial performance of agricultural firms listed on the NSE. The below equation was derived

$$\text{Financial Performance} = 1.864 + 0.096 \text{ Capital structure} + 0.000 \text{ Inflation} - 0.167 \text{ Economic growth} + 0.036 \text{ Org Size} + 0.106$$

4.6 Interpretation of Findings

The objective of the study was to determine the relationship between capital structure and financial performance of agricultural firms listed at the NSE. Findings of the study revealed that capital structure had a positive effect on the financial performance of listed agricultural firms in Kenya. The effect of capital structure was however insignificant as proved by Student T test findings' p value of 0.488, which was above 5% level of significance. The model enlisting capital structure, organizational size, inflation, and economic growth explained 20.3% of the variation in financial performance of agricultural firms listed on the NSE. The impact of the model was significant as revealed by an F test's p value of 0.019 which was below 5% level of significance. Specifically, organizational size and inflation positively affected financial performance of the firms while economic growth negatively affected financial performance of the institutions.

The study findings on the positive effect of capital structure on financial performance of listed agricultural firms agreed with findings by Masavi et al (2017) who had shown that debt ratio had

a positive effect on financial performance of agricultural firms listed at the NSE for the period 2010 and 2014. The study findings on the insignificant effect of capital structure on financial performance agreed with findings by Kimencu (2018) who showed that debt to assets ratio did not play a significant role in improving performance and neither did debt to equity ratio.

The study findings on the positive effect of capital structure on financial performance of listed agricultural firms agreed with findings by Xu et al (2022) with a focus on the agricultural industry in China who showed that both debt ratio and short-term debt ratio had an adverse effect on financial performance. The study findings on the positive effect of capital structure on financial performance of agricultural firms listed on NSE also disagreed with findings by Narsaiah (2020) who had shown that there was a negative relationship amongst short term debt ratio (STDR), Long term debt ratio (LTDR) and ROE, and the existence of a significant negative relationship amongst capital structure metrics enlisted as LTDR and TDR with financial performance metrics enlisted as EPS, ROA, and Tobin's Q. The findings still disagreed with findings by Opoku-Asante et al (2022) who showed that debt maturity as a measure of capital structure influenced the relationship between capital structure and performance in some sectors of the market in Nigeria.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study focused on capital structure and financial performance of agricultural firms listed at the NSE. The study relied on secondary data collected from the annual reports of the listed firms for the period 2014 to 2021, which was analyzed using descriptive and regression analysis and the findings presented in chapter four. This chapter presents a summary discussion of the findings, conclusion, limitations of the study, recommendations, and suggestions for further studies.

5.2 Summary of Findings

The objective of the study was to determine the relationship between capital structure and financial performance of agricultural firms listed at the NSE. Findings of the study revealed that capital structure had a positive effect on financial performance of the listed agricultural firms in Kenya. Based on the average debt-to-equity ratio of 27.3% as proved in the study, debt formed a small portion of less than 50% of the total capital of the agricultural firms. With a large portion comprising of equity, the study reveals that the firms could be utilizing retained earnings also to invest in operations. The use of less debt also meant that the companies saved on fixed interest payments that would otherwise have been paid in the case of excessive use of debt. The effect of capital structure on financial performance was however insignificant as proved by the study findings, as it was not critically involved in the operations of the organizations.

The study findings further showed that organizational size positively affected financial performance of the agricultural firms listed on the NSE. In fact, increasing the size of the organizations by one unit would result to improvement in financial performance by a factor of

0.401. A large organizational size implied the ability of the organization to invest in better technology, recruit efficient workforce and structure operations in ways that would lead to gains with regards to revenues and savings on critical costs. A large organizational size also allowed the agricultural firms to take advantage of economies of scale and gain competitive advantages in the industry.

The study findings also revealed that inflation positively affected financial performance of agricultural firms listed at the NSE. Anticipated and steadily rising inflation as was experienced in the period 2014 to 2021 impacted positively on performance as firms put in place strategies to cushion losses from the risk. General economic conditions in the country adversely affected performance as shown by an R value of -0.154. The model enlisting capital structure, organizational size, inflation and economic growth had a small but significant impact on the financial performance of listed firms in Kenya. The R squared value of 0.203 as revealed from the study findings proved that the model could only explain 20.3% of the variation in financial performance of firms listed on the NSE.

5.3 Conclusions

Based on the study findings of the existence of a positive association between capital structure and financial performance, the study concludes that the prudent management of capital structure is critical for the performance of listed agricultural firms. Capital structure decisions involve the apportionment of debt and equity in the total capital of an organization based on availability and specific targets of the organizations. Efficiently mixing debt and equity in the capital of an organization therefore results to improved performance with regards to savings on financing costs, reduced chances of financial distress, and growth in revenues. The study still concluded that the effect of capital structure decisions was still insignificant amongst agricultural firms listed on the

NSE. Based on the study findings that organizational size and financial performance had a positive correlation, the study concludes that increasing size through resource acquisition and expanding markets results to improvement in financial performance in such aspects as increased revenues and profitability. The study further concluded that steadily rising inflation and which is anticipated helps businesses to plan accordingly and to reap from benefits with regards to improved financial performance.

5.4 Limitations of the Study

The study was limited to capital structure and financial performance of agricultural firms listed on the NSE. Capital structure was assessed using debt-to-equity ratio while financial performance was measured using ROA, despite the existence of other metrics of capital structure and financial performance. Only three control variables were also used in the study which included inflation, economic growth, and organizational size.

The study only relied on secondary data collected from annual reports of agricultural firms listed at the NSE for the period 2014 to 2021. Reports by organizations are sometimes subject to manipulation through creative reporting by the organization. If manipulation of the reporting was the case in any of the organizations for any of the period, the study findings could be misleading.

The study was limited to agricultural firms listed at the NSE in Kenya for the period 2014 to 2021. The macroeconomic conditions experienced in the country, and which impacted on both capital structure and financial performance over the period could be slightly different from those in other countries and in other time frames. As such the study findings cannot be fully relied upon to predict findings of similar studies in other countries like Nigeria, Ethiopia, Sudan, Tanzania, Uganda and even India.

5.5 Recommendations of the Study

Based on the findings of a positive correlation between capital structure and financial performance of listed agricultural firms, the study recommends that the management of these organizations continues implementing prudent decisions on capital structure management. The management can vary the apportionment of debt in their capital structure based on existing conditions and objectives, and accordingly achieve high financial performance with regards to declining financing costs.

The study recommends that the management of organizations in other industries like manufacturing, banking, insurance and even hospitality should keep a keen eye on capital structure management. This is because capital structure is not only a reserve of agricultural firms but cuts across entities globally. The management of the different entities can do this through monitoring debt and equity levels used to desired optimal levels in order to gain in the financial performance.

5.6 Suggestions for Further Studies

This study suggests that further studies on the topic of capital structure and financial performance of agricultural firms listed on the NSE be conducted using primary data. This can be through the administration of questionnaires and interviews to managers of the agricultural firms targeted. Findings from primary data can be used to complement current findings that relied on secondary data.

This study suggests that further studies on the topic of capital structure and financial performance of agricultural firms listed at the NSE be conducted for longer time periods. This can be 10 or even 15 years to see the impact over long time frames. The study can also cover additional metrics of financial performance such as ROE and ROIC and other metrics of capital structure such as long-term debt ratio to equity, short term debt ratio to equity and others in the industry.

This study suggests that further studies on the topic of capital structure and financial performance of listed agricultural firms be conducted in other countries like Uganda, Tanzania, Nigeria, India and even South Africa. Findings of the studies in the different regions with different macroeconomic factors can help build on the current study findings.

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APPENDICES

APPENDIX I: ANALYZED DATA

Year	Agricultural firm	Efficiency	ROA	D/E Ratio	Inflation (CPI)	Log GDP	Log GDP
2014	Kapchorua Tea	3.67	9.44%	39.7%	152.51	15.8	21.38
	Sasini Ltd	6.00	0.41%	23.2%	152.51	15.8	23.43
	Eaagards Ltd	10.67	-13.16%	23.7%	152.51	15.8	19.92
	Limuru tea	3.23	0.61%	34.5%	152.51	15.8	19.64
	Kakuzi	3.75	6.04%	29.2%	152.51	15.8	22.07
	Williamson Tea	5.56	12.19%	29.8%	152.51	15.8	22.87
	Rea Vipingo	5.09	16.61%	29.0%	152.51	15.8	21.89
	2015	Kapchorua Tea	3.63	-1.49%	38.9%	150.19	15.8
Sasini Ltd		5.65	8.25%	13.0%	150.19	15.8	23.26
Eaagards Ltd		5.64	-4.08%	15.2%	150.19	15.8	20.24
Limuru tea		5.54	1.50%	34.6%	150.19	15.8	19.65
Kakuzi		6.51	16.78%	32.3%	150.19	15.8	22.24
Williamson Tea		5.66	-3.49%	30.0%	150.19	15.8	22.87
Rea Vipingo		5.00	41.65%	28.8%	150.19	15.8	22.35
2016		Kapchorua Tea	3.98	7.06%	41.6%	159.65	15.8
	Sasini Ltd	4.98	5.80%	15.4%	159.65	15.8	23.30
	Eaagards Ltd	6.82	1.27%	10.0%	159.65	15.8	20.45
	Limuru tea	4.57	-9.47%	37.2%	159.65	15.8	19.46
	Kakuzi	4.79	14.96%	31.7%	159.65	15.8	22.35
	Williamson Tea	5.61	6.57%	33.0%	159.65	15.8	22.91
	Rea Vipingo	5.08	43.76%	23.1%	159.65	15.8	22.29
	2017	Kapchorua Tea	6.39	-3.56%	43.4%	172.43	15.9
Sasini Ltd		4.93	3.95%	16.6%	172.43	15.9	23.30
Eaagards Ltd		4.92	3.49%	8.5%	172.43	15.9	20.64
Limuru tea		7.58	-12.05%	39.5%	172.43	15.9	19.38
Kakuzi		5.93	14.78%	32.9%	172.43	15.9	22.47
Williamson Tea		7.25	-4.21%	37.2%	172.43	15.9	22.85
Rea Vipingo		8.18	28.29%	27.2%	172.43	15.9	22.25
2018		Kapchorua Tea	5.91	10.33%	48.9%	180.51	15.9
	Sasini Ltd	4.70	3.46%	14.5%	180.51	15.9	23.29

	Eaagards Ltd	5.59	-5.72%	11.0%	180.51	15.9	20.62
	Limuru tea	6.49	1.38%	38.9%	180.51	15.9	19.41
	Kakuzi	6.98	11.51%	27.2%	180.51	15.9	22.51
	Williamson Tea	5.40	8.52%	38.8%	180.51	15.9	22.98
	Rea Vipingo	7.92	32.15%	34.9%	180.51	15.9	22.35
2019	Kapchorua Tea	6.30	-7.46%	38.5%	183.58	16.0	21.43
	Sasini Ltd	4.97	-2.46%	13.9%	183.58	16.0	23.41
	Eaagards Ltd	5.17	0.18%	11.3%	183.58	16.0	20.66
	Limuru tea	8.14	1.28%	21.5%	183.58	16.0	19.28
	Kakuzi	5.62	15.70%	23.8%	183.58	16.0	22.59
	Williamson Tea	6.19	-2.57%	30.9%	183.58	16.0	22.84
	Rea Vipingo	6.10	10.92%	32.9%	183.58	16.0	22.40
2020	Kapchorua Tea	5.13	0.58%	36.1%	108.60	16.0	21.39
	Sasini Ltd	6.34	0.28%	11.7%	108.60	16.0	23.40
	Eaagards Ltd	6.63	-8.13%	14.0%	108.60	16.0	20.67
	Limuru tea	7.24	-3.44%	20.4%	108.60	16.0	19.25
	Kakuzi	6.77	12.27%	24.1%	108.60	16.0	22.66
	Williamson Tea	6.30	1.48%	28.8%	108.60	16.0	22.79
	Rea Vipingo	6.37	8.93%	31.5%	108.60	16.0	22.49
2021	Kapchorua Tea	6.37	1.64%	40.1%	114.75	16.1	21.46
	Sasini Ltd	6.55	5.07%	12.6%	114.75	16.1	23.44
	Eaagards Ltd	5.29	0.42%	10.6%	114.75	16.1	20.83
	Limuru tea	6.89	-6.81%	14.4%	114.75	16.1	19.16
	Kakuzi	5.93	6.85%	24.3%	114.75	16.1	22.65
	Williamson Tea	6.99	-0.84%	35.0%	114.75	16.1	22.81
	Rea Vipingo	6.43	10.14%	40.5%	114.75	16.1	22.43

APPENDIX II: PLAGIARISM CHECK

Obed.

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