

**FINANCIAL LEVERAGE RATIOS, CASH HOLDING AND FINANCIAL
PERFORMANCE OF LISTED FIRMS IN KENYA**

BY

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DECLARATION

Declaration by the Candidate

I declare that this is my original work and it has not been submitted as academic work in any other institution. This project should not be reproduced without permission by the author or Moi University.

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DEDICATION

I dedicate this work to my parents, Mr. Wilson Magut and Caroline Magut. Your spiritual, financial, and moral support cannot go unnoticed. This work is also for you, my brothers, Keter Kirwa and Jacob Magut.

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ABSTRACT

Globally, scholars and shareholders have been concerned with the financial performance of listed firms. However, extensive literature indicates mixed and inconclusive findings on relationships between financial leverage ratios and financial performance. Informed by the pecking order theory, agency theory, and tradeoff theory, this study sought to examine whether cash holding moderates the relationship between financial leverage and financial performance among firms listed in Nairobi Securities Exchange. To establish the causal relationship among variables, the study adopted an explanatory research design, while the nature of data collected informed the choice of a longitudinal research design. A total of 67 firms listed in the NSE as at 2020 constituted the population of the study. An inclusion and exclusion criteria was adopted where firms that did not trade in the NSE during the study period were excluded from the study. Additionally, firms with incomplete data and those that did not provide relevant data required for the study were also excluded leading to a survey of the remaining 39 firms. Secondary data was extracted from the audited annual financial reports for 10 years (2011-2020) where descriptive and inferential statistics were used to manipulate these data. The results of the Hausman test ($\beta = 0.0929$, $p > 0.05$) substantiated the choice of random effect. From analysis, the study found debt to equity ratio ($\beta = -0.0070$, $p < 0.05$), debt to capital ratio ($\beta = -0.1052$, $p < 0.05$) had a significant negative effect on financial performance. Interest coverage ratio ($\beta = 0.0038$, $p < 0.05$), however, had a significant positive effect on financial performance (ROA) of listed firms in Kenya. Additionally, using hierarchical regression models the study established a moderating role of cash holding and debt to equity ($\beta = 0.19679$, $p < 0.05$), debt to capital ($\beta = 0.14919$, $p < 0.05$), and interest coverage ratio ($\beta = -0.0485$, $p < 0.05$), this was supported by a significant change in R-sq value from 0.2404 on the first interaction to 0.2441 on the final interaction. Therefore, the study recommended that managers and policy formulators maintain low levels of debt to equity and debt to capital ratios. However, higher levels of interest coverage ratios should be maintained as it improves financial performance. Additionally, managers are encouraged to maintain high cash levels in cases where a firm is highly levered.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
ABBREVIATIONS AND ACRONYMS	xii
OPERATIONAL DEFINITION OF TERMS	xiii
CHAPTER ONE	1
1.0 Overview	1
1.1 Background of the Study	1
1.1.1 Nairobi Securities Exchange	5
1.2 Statement of the Problem	7
1.3 The General Objective	9
1.3.1 Specific Objectives	9
1.4 Research Hypothesis	9
1.5 Significance of the Study	10
1.6 The Scope of the Study	11
CHAPTER TWO	12
LITERATURE REVIEW	12
2.0 Overview	12
2.1 Concept of Financial Performance	12
2.2 Concept of Financial Leverage	14
2.3 Concept of Cash Holding	18
2.4 Theoretical Review	20
2.4.1 Pecking Order Theory	20
2.4.2 Agency Theory	22
2.4.3 Tradeoff Theory	24
2.5 Review of Empirical Literature	26
2.5.1 Debt to Equity Ratio on Financial Performance of Listed Firms	26
2.5.2 Debt to Capital Ratio on Performance of Listed Firms	28

2.5.3 Interest Coverage Ratio on Performance of Listed Firms	29
2.6 The moderating Role of Cash Holding on Financial Leverage and Financial Performance Relationship	30
2.7 Control Variables	32
2.7.1 Firm Size	32
2.7.2 Firm Age	33
2.7.3 Firm Growth	34
2.8 Research Gap	35
2.8.1 Summary of Literature Review	37
2.9 Conceptual Framework	39
CHAPTER THREE	41
RESEARCH METHODOLOGY	41
3.0 Introduction	41
3.1 Research Paradigm	41
3.2 Research Design	42
3.3 Target Population	42
3.4 Data Collection	43
3.5 Data Analysis	43
3.6 Measurement of Research Variables	44
3.6.1 The dependent variable	44
3.6.2 The independent variables	45
3.6.3 Moderating variable	46
3.6.4 Control variables	46
3.7 Model Specification	47
3.8 Model Assumptions	50
3.8.1 Diagnostic Tests regression and panel data diagnostic tests.	50
3.8.2 Normality Test	51
3.8.3 Multicollinearity Test	51
3.8.4 Heteroskedasticity Test	52
3.8.5 Autocorrelation Test	52
3.8.6 Stationarity Test	52
3.8.7 Hausman Test	53
CHAPTER FOUR	54
DATA ANALYSIS, PRESENTATION AND INTERPRETATION	54

4.1 Introduction.....	54
4.2 Descriptive Statistics.....	54
4.3 Diagnostic Tests.....	56
4.3.1 Normality Tests	56
4.3.2 Multicollinearity.....	57
4.3.3 The Heteroscedasticity Assumption.....	58
4.3.4 Unit Root Test	58
4.3.5 Autocorrelation.....	59
4.3.6 Specification Error Test	60
4.4 Correlation Analysis	60
4.4.1 Regression Analyses	61
4.4.2 Testing the Effect of the Control Variables	62
4.4.2 Testing the Direct Effect	64
4.4.3 Fixed Effect Model.....	64
4.4.4 Results of the Hausman Test.....	66
4.4.5 Testing the Effects of Moderator Variable.....	67
4.4.6 Testing the effect of the first interaction	69
4.4.7 Testing the effects of the second interaction.....	71
4.4.8 Testing the complete effect of moderation.....	72
4.5 Testing of Hypotheses.....	73
4.6 Mod Graphs	77
4.7 Hierarchical Regression Model.....	81
4.8 Regression Models.....	82
4.9 Chapter Summary	84
CHAPTER FIVE	85
DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	85
5.1 Introduction.....	85
5.2 Summary of the Findings.....	85
5.2.1 Effect of Debt to Equity ratio on financial on performance of listed firms ...	85
5.2.2 Effect of Debt to capital ratio on financial performance of listed firms	86
5.2.3 Effect of interest coverage ratio on financial performance of listed firms.....	86
5.2.4 Moderating Effect of cash holding.....	87
5.3 Conclusion	88
5.4 Recommendations.....	89

5.4.1 Managerial Contribution	89
5.4.2 Policy Contribution	90
5.4.3 Theoretical Contribution	90
5.5 Limitations of the study and Further Research Recommendations	91
REFERENCES	93
APPENDICES	107
Appendix I: Hausman tests	107
Appendix II: Target Population: Firms Listed In Kenya	110
Appendix III: Data Collection Schedule- For Independent and Dependent Variables	112
Appendix IV: Data Collection Schedule- Control Variables and Moderator Variable	113

LIST OF TABLES

Table 4.1: Descriptive Statistics	56
Table 4.2: Shapiro Wilk Normality Test.....	57
Table 4.3: Multicollinearity	57
Table 4.4: Results for Heteroscedasticity	58
Table 4.5: Results of Unit Root Test	59
Table 4.6: Wooldridge Test for Autocorrelation	60
Table 4.7: Ramsey Reset (test using powers of the fitted values of FP)	60
Table 4.8: Correlation Matrix	61
Table 4.9: Fixed effect Regression results for control variables	63
Table 4.10: Results for fixed effect model on direct effect	66
Table 4.11: Hausman test results for direct effect	67
Table 4.12: Testing the effects of moderator variable	69
Table 4.13: Testing the effect of the first interaction.....	70
Table 4.14: Testing the effects of the second interaction	71
Table 4.15: Testing the complete effect of moderation	72
Table 4.16: Summary Results of Hypotheses Tests.....	77
Table 4. 17: Hierarchical Regression Model	83

LIST OF FIGURES

Figure 2.1 Conceptual Framework 1	40
Figure 4.1: Mod graph showing the first interaction	78
Figure 4.2: Modgraph for the second interaction.....	79
Figure 4.3: Mod graph showing the third interaction	80

ABBREVIATIONS AND ACRONYMS

CR	-	Cash ratio
FP	-	Financial performance
D/A	-	Debt to assets ratio
D/C	-	Debt to capital ratio
D/CE	-	Debt to capital employed ratio
D/E	-	Debt to Equity ratio
D/EMV	-	Debt to equity margin value
DY	-	Dividend yield
EBIT	-	Earnings before interest and tax
EPS	-	Earnings per share
EVA	-	Economic value added
ICR	-	Interest coverage ratio
ISE	-	Istanbul stock exchange
LTD/CE	-	Long term debt to capital employed ratio
NM	-	Net margin
NSE	-	Nairobi stock exchange
NSE	-	Nigeria stock exchange
OM	-	Operating margin
ROA	-	Return on Assets
ROE	-	Return on equity
ROI	-	Returns on investment
STD/C	-	Short term debt to capital ratio
TD/C	-	Total debt to capital ratio
WACC	-	Weighted average cost of capital

OPERATIONAL DEFINITION OF TERMS

- Cash Holding** – the amount of cash held by firms in form of cash and cash equivalents in relation to total assets (Shah, 2011).
- Debt to Capital Ratio** – measures debt capital in relation to total capital held by a firm (Dumilah, 2021).
- Debt to Equity Ratio** – a measure of debt in relation to shareholders capital (Darsono & Ashari, 2010).
- Financial Leverage**- this is the borrowed source of finance in the capital structure that attracts interest expenses (Ibhagui & Ilokoyo, 2018).
- Financial Performance** – this is the rate of effectiveness and efficiency at which returns are generated using available resources (Chua & Wang, 2018).
- Interest Coverage Ratio**- A measure of the ability of a firm to pay interest on all outstanding debts (Seiany, 2021).

CHAPTER ONE

1.0 Overview

This chapter formed the background of this study and the problem statement. It presented the general objective, specific objectives, and hypotheses. It also gives the significance of the research and the scope of this study.

1.1 Background of the Study

Firm financial performance can be defined as the measure of effectiveness and efficiency (Chua *et al.*, 2018). It is measured by the rate at which the firms achieve their economic objectives over a given period (Grüning, 2002). Financial performance has been quantified by accounting, market, and perceptual measures (Griffin & Mahon, 1997). Market capitalization denotes the financial performance of a market, and it represents the total value of a market. Additionally, the market index has been widely used to determine the financial performance of a given section in a market. On the other hand, accounting measures use ROA, ROE, and ROI to measure financial performance of individual firms (Abdolmohammadi, 2005).

Recently financial performance has been of great concern. When firms record high performance, the market gains stability and becomes liquid (Sadeghi, 2008). A firm's financial performance also informs dividend and share prices of listed firms (Evans, Hodder, and Hopkins 2014). Therefore, poor financial performance signifies that; share of firms becomes unattractive to potential investors, and shareholders may be forced to sell their shares. (Evans *et al.*, 2014).

Globally, listed firms are experiencing poor financial performance, thus, making their stock unattractive and the capital market volatile. For instance, several firms collapsed in the last two decades (Worldcom Enron Corporation Refco, Dynegy Inc) due to

corporate governance lapses and financial performance-related issues. In Kenya, ARM Cement PLC, Deacons (E.A.) PLC, National Bank of Kenya, Kenya Airways, and Mumias have been suspended from trade in the NSE because of low profitability. This resulted in losses to investors because of the constant decline in share prices.

The overall financial performance of the stock market is alarming. According to (the global economy. Com), the average global market capitalization stood at 658.62 billion U.S. dollars in 2010 compared to 632.33 billion U.S. dollars in 2019, While USA recorded a growth in market capitalization 76.1%. Asia reported an increase of 87.9%, Africa experienced a sluggish growth of 7.9% (The global economy 2019). This indicates that Africa is failing to keep up with the market growth rate of developed and developing countries. Furthermore, a study by Iliemena and Goodluck (2019) in Nigeria indicates that the aggregate Nigerian stock market value dropped by 26.5% due to poor equity prices. With South Africa registering the highest market performance of 1056.34 billion U.S. dollars, Kenya's market capitalization of (25.06 billion U.S. dollars) is way below both global and African averages of 632.33 billion U.S. dollars 125.9 billion U.S. dollars respectively in 2019. This values indicate that the Kenyan market is underperforming compared to other regions.

Due to poor financial performance among listed firms and markets generally, scholars have devoted efforts to the determinants of financial performance among listed firms (Brunnermeier & Krishnamurthy, 2020). Melville, & Merendino (2019). Recently, capital structure decisions have been attracting attention among many scholars due to their significance in a firm's survival. Gill, Biger, and Mathur (2011) studied capital structure and profitability in the USA. From the study, choices ratios of debt and equity determine the overall profitability of a firm. Recently studies have pointed out that companies are collapsing due to debt-related issues (Reinhart & Rogoff, 2011).

Studies in Africa indicate that firms are going into massive amounts of debt which in the long run leads to financial distress. As a result, firms are becoming financially self-sufficient, making raising extra finance for business purposes more challenging.

Profitability of a firm has been proved to determine the quality of debt. When firms are not generating enough profits, potential investors shy away. Also, investors may be forced to sell their shares for the fear that share values may keep on declining (Strahilevitz, Odean, & Barber, 2011). This distorts a firm's capital structure, making the management opt for more debt, putting the firm at risk of financial distress (Salehi, Lotfi, & Farhangdoust, 2017). Although this has been evident in firms recently, studies grounded on pecking order theory have proved debt to be less costly than equity (Mande, Park, & Son (2012). Debt, however, may not be cheap when creditors feel that clients are at high risk of default. With high default risks, creditors charge high-interest rates making debt capital more expensive (Edelberg, 2006).

Studies have examined financial leverage in different dimensions. Debt ratio, D/E, ICR D/C, among many obligation ratios, have been used as measures of financial leverage (Ezeoha, 2008). The debt to Equity Ratio (D/E) is a financial ratio that compares a company's total debt to equity. In accounting, the ratio presents the leverage or solvency ratios (Nuryani, & Sunarsi, 2020). Debt to capital ratio is a ratio that presents leverage levels in an organization. It measures how the activities of a firm are financed by debt capital concerning the total capital (Dumilah, 2021). On the other hand, the interest coverage ratio weighs the ability of a firm to pay interest on all outstanding debts (Setiany 2021). Studies on the relationship between financial leverage and financial performance have been extensively subjected to the widespread empirical literature. The findings are mixed and inconclusive, making it difficult to generalize. (Akhtar *et al.*, 2012). Mishra & Modi (2013); Gweyi & Karanja (2014)

indicated a positive relationship, while a negative relationship was found on (Murikwa, 2017; Malshe & Agarwal, 2015; Adenugba, Ige, & Kesinro, 2016; & Ojo, 2012). While debt aids in a firm's operations, studies show that managers keep significant amounts of liquid assets in cash and cash equivalents. Studies have linked cash holding with financial performance and reported that the levels at which firms hold cash ultimately affect managers' borrowing behaviors (Guo, Legesse & Wu, 2021).

Studies point out that the levels at which firms retain cash determine how investment, financing, and operations decisions are made (Iftikhar, 2017). Firms that keep high levels of cash balances are likely to finance their operations with less financial leverage (Myers, 1984). Studies based on the pecking order theory indicate that; managers are provided with a guideline on how they are to make decisions to finance an operation, with cash reserves being ranked first (Frank & Goyal, 2003). Therefore, they are likely to be reluctant to inquire about debt financing when firms have enough cash at their disposal. Based on studies on agency theory, managers may tend to satisfy their needs when a firm's ownership is separated from management (Eisenhardt, 1989). Literature that subscribes to this theory indicates that a firm's financial performance is likely to be negatively affected by increased cash holding (Mohd-Ashhari & Faizal, 2018; Iftikhar, 2017). Studies have pointed out that using certain levels of debt in capital structure may regulate the behaviors of managers concerning the type of decisions they make (Chiou ,Chen & Huang 2010 ; De Cesari *et al.*, 2012). Although this may be valid, studies on the trade of theory indicate that firms are advised to consider the costs and benefits of using certain levels of finance. Results of the trade-off theory suggest that when the cost of finance exceeds an equilibrium, the costs may exceed the benefits (Serrasqueiro & Caetano, 2015).

Based on the literature, there seems to be a relationship between cash holding, financial leverage, and Financial Performance (Guo *et al.*, 2021& Iftikhar, 2017). More so, a study done by Guo *et al.*, (2021) suggested that firms are likely to use different debt levels with varying levels of cash at their disposal. The study went further and highlighted the significance of debt and financial Performance of firms. Although debt may negatively impact financial performance, literature indicates that debt is likely to improve financial performance from its disciplinary role to managers (Wu *et al.*, 2020). With this effect being done in developing economies, there is a need to test this effect on developing countries of Africa, more so in the East African region. Therefore, this study intends to study the moderating role of cash holding on the relationship between financial leverage and financial Performance of listed firms in Kenya.

1.1.1 Nairobi Securities Exchange

The history of the Nairobi Securities Exchange can be traced back to (1922-1963) during the British Empire in Kenya. During this period, the stock was first traded at Stanley's hotel in Nairobi, Kenya, though no provided trade rule existed (Nunga, 1974). This led to the development of the first professional firm by Francis Drummond, which acted as a stockbroker. In 1953 the London stock exchange, together with the London officials, recognized the development of NSE.

Upon recognition, NSE developed as a voluntary association with a certification by the society's act. This was because Asia and Africa were at that time not allowed to trade on securities. At the time of independence, the market experienced a hit as a result of uncertainties of Kenya after independence. However, this did not persist for long. In 1988, NSE landed a milestone when the government decided to sell 20% of its holdings in commercial banks to the public. NSE recorded a high of 5030, which

led to the recognition of the NSE as the best market globally with a record of 179% returns (Aduda Masila & Onsongo, 2012).

The largest issue of shares by the NSE was recorded at the time of the privatization of Kenya Airways. Further development led to trading cycles, rules, and regulations to curb market inefficiencies. From 1999 to date, NSE has entered into many collaborations with government agencies or international financial regulatory bodies to protect its stakeholders at trade times (Aduda *et al.*, 2012).

Over the last decade, NSE has undergone both structural and strategic changes. In 2013 the Nairobi stock exchange had to change its name to The Nairobi Securities Exchange for strategic reasons (NSE, 2021). Lately, in 2015, the NSE joined the United Sustainable stock exchange, where they vowed to educate stakeholders on the gains of assimilating sustainability in their marketplaces. The NSE has always tasked itself with ways to make market participants easily access securities, and lately, they have achieved this through an online trading platform. (NSE 2021). The efficiency of the market enables firms to raise firms through IPOs by providing a platform for interaction between firms and financiers.

Over recent years NSE has presented a limited number of IPOs. This is likely to signify that participants are more likely to be utilizing alternative sources of finance instead of equity. Studies on firms listed in the NSE indicate that firms listed are highly levered. Scholars have gone a mile to find reasons why firms are more enticed by leverage than equity. Findings indicated that debt is cheaper than equity (Allini *et al.*, 2018). Although this may be valid, similar studies contradicted this finding as debt may be costly in the long run, making it difficult for firms to serve debt contracts.

Unlike equity, which is expensive on issue, debt attracts interest paid over a very long time. Recent studies indicate that giant firms like ARM, Mumias, and Kenya airways were constantly on high leverage ratios (Mutua, 2019). Deeper investigations on why these firms were constantly borrowing suggested that investors felt that these companies' stock was overvalued and unattractive for purchase. These firms were suspended from tared by the NSE due to poor financial performance. Although NSE uses this strategy to protect investors from additional loss, it may be advisable for NSE to develop ways that may help such firms get back to their feet after delisting or suspension.

1.2 Statement of the Problem

Financial performance is a concern not only to managers but also to shareholders, the government, and potential investors (Durrah *et al.*, 2016). To listed firms, stakeholders expect a constant increase in profitability as these firms are characterized by large market share, higher operations levels, and recent technology adoption. Additionally, they must fulfill specific qualifications before listing, among them being a proven three years of profits; therefore, they are highly expected to record high financial performance (Abeysekera, 2010). With high capital levels, they are in a position to capitalize on profitable investments (Park, Shin, & Choy, 2020). Their profitability puts them in a position to create employment, steer up economic development, and fund the state through taxes. With high profits, such firms record constant increases in dividends and share prices due to increased demand for their shares in the stock market.

In recent years however listed firms in Kenya are experiencing declining financial performance, which has led to the delisting and suspension of several firms on the Nairobi Securities Exchange. Majority of the listed firms in Kenya are declaring low

dividends, while some are not declaring dividends. ARM Cement PLC, Deacons (E.A.) PLC, National Bank of Kenya, Kenya Airways, and Mumias have been suspended from trade in the NSE, and some declared bankrupt because of low profitability (Siro, 2013). Owing to poor financial performance, the Kenya market is shrinking. Results from the global economy (2019) showed that market capitalization in Kenya stood at 25.06 billion U.S. dollars. This was way below both global and African averages of 632.33 billion U.S. dollars and 125.9 billion U.S. dollars, respectively, in 2019, indicating that the Kenyan market was underperforming compared to other regions (Rawal & Navarro, 2019). Several studies have been done to determine why such large companies are failing to perform financially, and most findings have linked the failures to capital structure decisions (Maina & Ishmail, 2014).

A firm's financial performance is influenced by capital structure decisions (Akintoye, 2008; Dawar, 2014; Muritala, 2012; Nguyen & Nguyen 2015; Siro, 2013). Findings from recent studies have fueled the study of leverage and how they influence profitability and efficiency of firms. Studies done both locally and globally have indicated that financial leverage affects performance of firms in a positive way (Akhtar *et al.*, 2012; Pradhan & Khadika, 2017). However, similar studies on financial leverage and financial performance of firms found negative associations Murikwa (2017), Rehman (2013), Tsuruta (2015), and Enekwe, Agu, & Eziedo (2014) found no effect.

Mixed findings are recorded from empirical studies, with most studies considering the direct effect of financial leverage on financial performance. From a study by Iftikhar (2017) in Asia, cash holding affects financial leverage and financial performance. Similarly, Keynes (1984) indicates that cash holding may improve performance of a

firm. Based on the literature on cash holding, this study tested the moderating effect of cash holding on the relationship between financial leverage and performance of listed firms in Kenya.

1.3 The General Objective

The main objective of this study was to investigate the moderating role of cash holding on the relationship between financial leverage and financial performance among listed firms in Kenya.

1.3.1 Specific Objectives

1. To analyze the effect of debt-to-equity ratio on financial performance of listed firms in Kenya.
2. To examine the effects of debt to capital ratio on financial performance of listed firms in Kenya
3. To evaluate the effects of interest coverage on financial performance of listed firms in Kenya
4. To determine the moderating role of cash holding on relationship between;
 - 4a Debt to equity ratio and financial performance of listed firms in Kenya
 - 4b Debt to capital ratio and financial performance of listed firms in Kenya
 - 4c Interest coverage ratio and financial performance of listed firms in Kenya

1.4 Research Hypothesis

The study sought to test the following hypotheses

H₀₁: Debt to equity ratio has no significant affect on financial performance of listed firms in NSE Kenya.

H₀₂: Debt to capital ratio has no significant effect on financial performance of listed firms in NSE Kenya

H03: Interest coverage has no significant effect on financial performance of listed firms in NSE Kenya

H04: cash holding does not significantly moderate the relationship between;

H4a debt to equity ratio and financial performance of listed firms in Kenya

H04b: debt to capital ratio and financial performance of firms in Kenya

H04c: interest coverage ratio and financial performance of firms in Kenya.

1.5 Significance of the Study

This study gained its importance based on its contribution to the existing literature on financial leverage and how they affect performance of listed firms. Studies in developed and developing economies found inconsistent findings that called for additional research.

Managers of listed firms benefited from the findings of this study. Different results from literature have been inconsistent, making decision-making a difficult task for managers. Some propose that with debt, the value of a firm increases making managers use debt to please the shareholders. Literature also states that financial leverage leads to poor performance. Therefore, management of firms would use the results of this study as a guide for making optimal capital structure decisions. The board would evaluate their performance concerning how they retain cash and leverage to capitalize on business opportunities.

It is envisaged that the findings of this study were used in policy formulation on firms in Kenya. Government tasks itself to help firms perform better by creating an enabling economic environment. Control measures on interest are a primary focus of the fiscal

policy debate. Depending on whether the use of leverage can salvage the conditions of firms, governments tend to raise or lower the lending rates through the government.

The effect of debt financing on Kenyan firms has been limited in literature. Therefore, scholars will use this study as a tool for future research to fill the gap in the effects of financial leverage ratios on the financial performance of listed firms in Kenya.

1.6 The Scope of the Study

This study aimed to determine the effect of financial leverage ratios, cash holdings ratios, and financial performance of listed firms in Kenya. Debt-to-equity ratio, debt to capital ratio, and interest coverage were used to measure the independent variable. The study's target population were the 67 firms listed in the NSE as of 2020. The study used secondary data for ten years between (2011 and 2020). The choice for this period was motivated by the several cases of collapse of firms in Kenya in the past decade. Secondly, the Kenyan market was not growing compared to both the global and the African markets such as China, the USA, South Africa, and Nigeria. More so, several firms in NSE (Express Kenya, Eveready, Semear Africa East Africa Portland's, and Standard group, among many firms) have been operating under losses over the better part of the last decade NSE (2021). Finally, inferential and descriptive statistics was used in data analysis to determine the relationship between financial leverage ratios, cash holding, and financial performance.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter discusses the main variables in the research. The variables are; financial leverage, cash holding, and financial performance. The chapter further suggests the theories that give the relationship between the above research variables. Additionally, the chapter reviews the empirical studies done by other scholars and has a relationship with the study. Finally, the chapter will give a representation of the variables in a conceptual framework.

2.1 Concept of Financial Performance

Financial performance refers to the measure of firm efficiency and effectiveness (Cochran & Wood, 1984). It can be said to be the condition of a company over a certain period, and such conditions can be depicted by dividends payment, share price growth, and profitability (Durrah *et al.*, 2016). The state of financial performance in a firm is judged by its capital adequacy ratio, liquidity, leverage, solvency, and profitability (Sravanthi, 2021). Therefore, it is simply the ability of a firm to manage and control its resources.

Financial performance measurement is of great significance for the responsibility and efficiency of management of any firm. Improvement of a process cannot be realized without attempting to measure the output levels against a given standard (Haig, 2020). An organization that needs to improve its financial performance needs to identify the level of usage of resources and the impact it brings to the organization to define either an improved financial performance (Devie *et al.*, 2019)

Financial performance not only serves to raise the market value of a company or an organization but also leads to growth in the financial sector, which ultimately results in a desirable outcome for the market (Kuvshinov & Zimmermann, 2020). Multiple scholars have tabled non-conclusive findings on studies that have examined the determinants of financial performance of firms. Manrique & Martí-Ballester (2017) viewed financial performance measures as an effort to recognize monetary payoff in a highly competitive and developed market.

Monetary exhibitions address the activity to do money-related activities. By and large, financial performance shows measures to which financial objectives are being accomplished. Economic activities are game-plan for estimating the result of an association's rules and activity fit as a fiddle (Gault, 2018). It is utilized to appraise an association's generally speaking financial wellness throughout a specific time frame. In an association, it may be determined by financial results and by the size of profit. Risk and profitability are two primary parts that characterize the meaning of association. A monetary end that expands vulnerability will lessen the worth of the association, and then again, financial ends which support the benefit will develop the value of the association. In this manner, risk and profitability are the two fundamental components of a business association (Plaskova, 2017).

The success of an organization is well explained by its ability to manage profitability and risks. Several scholars have extended their studies to determine the determinants of performance and what causes performance parities among organizations. Recently the debate has shifted, and significant concerns of managers and shareholders are on what determines financial performance. Although multiple studies have been done, we still find that there has been no single conclusive answer to this question.

Corporate governance and risk management Mirza and Javed (2013), Concentration and growth (Capon, Farley & Hoening, 1990; Banerjee, Arindam & Anupam, 2014).

In accounting, finance, and economics, financial performance is computed by using accounting measures that are readily available in the firms' financial statements. Scholars have found it prudent to measure financial performance in relation to profitability and assets employees. In contrast, some have measured profitability in relation to earnings per share held by an investor (Raza, 2013). Studies have been done on accounting in relation to financial performance of the firm with majority of them using the returns on equity (ROE), returns on assets (ROA), earnings per share (EPS), dividend yield (DY), and returns on investments among many (Pazarskis *et al.*, 2017).

2.2 Concept of Financial Leverage

Financial leverage can be said to be a form of an external source of finance. When a firm employs borrowed funds in its capital structure, the source is financial leverage (Ibhagui & Olokoyo, 2018). The management uses financial leverage as a strategy where an organization decides to utilize debt capital instead of internal sources of funds Zahra *et al.*, (2018). Mainly, the borrowed funds are used to finance the acquisition of the fixed assets and play a key role in funding the firms' day-to-day activities.

In making capital structure decisions, the management of organizations needs to be prudent, especially when the decision is about the levels of leverage. Various studies have indicated mixed findings about the use of leverage. Back to the pioneers of the capital structure studies, capital structure decisions have no effects on value of firms (Franco Modigliani and Merton Miller 1958). Recent studies have pointed out both

negative and positive effects of using leverage by a firm. Kaplan (1998) states that firms that use high levels of leverage in their capital structure are at risk of financial distress. Studies have linked that firms in developing economies face bankruptcy due to the decision by the management to use debt (Coupet, 2018). Firms in these economies cannot negotiate for fair debts with low interest rates, which makes it expensive to finance debt in the long run. Debt finance attracts interest, which is an expense to the organizations and reduces profits in the long run.

Although debt finance attracts additional expense, literature points out that firms that use debt capital have increased value as opposed to un levered firms (Dempsey, 2019). They benefit from taxes exemptions as a result of interest. Levered firms also enhance their earnings by using debt since they are in a position to capitalize on profitable opportunities due to the availability of funds. However, when too high, interest expenses may expose the firm to bankruptcy and financial distress situations. Several studies have also concluded that using leverage makes the firms' management efficient in handling cash. Studies based on the agency theory concluded that additional debt would demand creativity from the management to serve the interests (Solichah & Fachrurrozie, 2019).

The agency cost theory always advises that the management of the firms should use high levels of debt. This is so since the theory assumes that high levels of debt will regulate the management of the firms in spending their cash reserves Haifeng (Guo *et al.*, 2021). Scholars, however, have no conclusive findings in the study of financial leverage. Studies have focused on how much debt is used to finance the firm. These debt levels have been related to financial performance and effects as a result of used leverage with findings indicating both negative and positive correlations depending on proxies used to measure debt and performance.

Previous studies done in accounting, finance, and economics have used different proxies to measure financial leverage. In accounting, financial leverage is measured using debt ratio, debt to equity ratio, interest coverage ratio, financial distress levels, and the tax benefits due to debt. Abor (2005), Abor (2007), and Kyereboah-coleman (2007) used short-term debt, long-term debt, and total debt as a ratio of total assets. In another study by Raza and Muhammad Wajid (2013), the scholars used two accounting debt ratios, the debt-to-equity ratio and the total debt to asset ratio, as the measurement proxies for the independent variable (financial leverage). This study will use the debt-to-equity ratio, debt to capital ratio, and the interest coverage ratios as the proxies to measure the levels of debts in firms.

Debt to Equity Ratio (D/E) is a financial ratio that looks at the all-out obligation to value of an organization. In accounting, the proportion presents the influence or dissolvability proportions (Hanif & Bustamam, 2017). The solvency ratio is the capacity of a firm to settle its liabilities when the organization is in the liquidation interaction. This proportion is likewise named the leverage ratio, which is constantly utilized as an evaluation as far as possible as the amount, they can acquire (Barth & Miller 2018). For the most part, a lower debt to equity ratio suggests an all the more monetarily stable business. Organizations with a higher obligation to value proportion are considered riskier to loan bosses and financial backers than organizations with a lower ratio (Atidhira & Yustina, 2017). Unlike equity financing, debt should be reimbursed to the loan holders. Since debt financing likewise requires obligation overhauling or ordinary interest installments, debt can be a more costly financing than equity financing. Capital structure ratios significant contemplations in speculation investigation and choices making in any association or by a firm in specific industry.

Among capital structure ratios, debt to equity ratio unequivocally influences the company's income in the drawn-out (Shaheen, & Malik, 2012).

Debt to capital ratio is a ratio in accounting that measures the leverage levels of an organization. Debt to capital ratio measures how activities of a firm is financed by debt capital in relation to the total capital (Dumilah, 2021). From the statement of a firm's financial position, the D/C ratio is a computation of debt divided by debt add shareholders' equity. Analysts and potential investors use this accounting ratio to indicate whether an investment in a firm in question is a viable decision. The question, therefore, is what is the desirable ratio. A firm with a high debt to capital ratio signifies that the firm is highly levered. Previous literature has associated debt to capital ratio above 1 in the capital structure as one that is for a riskier firm (Ampah & Kiss, 2021). Firms with such ratios are in danger of bankruptcy and financial distress. More debt capital makes a company riskier since the firms may fail to meet the interest expenses when cash flow problems arise.

Finally, interest coverage ratio is a financial obligation ratio that is utilized to gauge the capacity of a firm to pay interest on every exceptional obligation. The interest coverage ratio is estimated by taking the company's income before interest and expenses (EBIT) of a specific period and separating them by complete interest payable by the firm on the entirety of its remarkable obligation (Setiany, 2021). This proportion estimates how frequently a firm can pay revenue on debt from its profit. This ratio will likewise gauge the association's capacity to meet its advantage on obligation commitment when they fall due. Accordingly, this proportion is a proportion of the dissolvability of an organization. The interest coverage ratio additionally gauges an organization's peripheral well-being to intrigue installment of a specific period (Malikov, Coakley & Manson, 2019). When the interest coverage is

low, it demonstrates the organization's obligation trouble is high, which means a slim likelihood of interest installment. A high default rate is related to low degrees of ICR and, therefore, increased possibilities of insolvency. Low revenue inclusion proportion likewise shows the organization has less income that can be utilized to pay for interest (Setiany, 2021). Any organization's suggested interest coverage ratio is above 1.5; when the ICR is beneath 1.5, the organization's capacity to pay interest on the obligation is sketchy. When ICR is under one, premium installments are more than its income (EBIT). A higher interest coverage ratio implies that a firm is performing better. A firm with an interest coverage ratio of two is ideal for serving its monetary commitments. Subsequently, the organizations are at a lower hazard of financial misery and insolvency (Banerjee & Hofmann, 2018).

2.3 Concept of Cash Holding

Cash is one of the least-productive assets because it generates very little or, in many cases, no accounting returns (Bordo & Levin, 2019). Despite this, some firms hold a relatively large share of their assets in cash and cash equivalents (Shah, 2011). Cash works as the lifeblood of a firm's operation, and significant companies worldwide keep a substantial amount of cash. Firms retain liquid cash for numerous reasons, i.e., transaction, speculative and precaution (Keynes, 1936). A sufficient amount of cash helps avoid debt financing costs and financial distress (Myers & Majluf, 1984).

There are no convincing confirmations regarding how much money should be held. An overabundance of cash holding can ease dividend payment and reduce the office struggle insiders and agency cost of debt (La Porta *et al.*, 2000). It also fortifies interior capital accessibility to benefit speculation openings and avoid monetary misery (Santioni Schiantarelli, & Strahan, 2017). Contrary to this, excessive cash can be disastrous to an organization. Having more liquid cash leads to suboptimal use.

Literature indicates that holding cash exacerbates conflict between the agent and the shareholders (Iftikhar, 2017).

Promptly accessible money can be utilized to help prevailing investors in type of money dividends (Chiou *et al.*, 2010; Franks, & Mayer, 1998). Tunneling happens when cash is utilized to help prevailing investors instead of putting resources into development openings and repurchase of offers (Chiou *et al.*, 2010; De Cesari *et al.*, 2012). Controlling investors hold a more significant part of offers in type of non-tradable offers (Huang *et al.*, 2011; Peng & Jiang, 2010). They put unreasonable money in private arrangements (where controlling investors are taking part) (Yu & Zhao, 2015) and buy shares at a value lower than the market value (Wu *et al.*, 2020).

From the above discussions, it is more likely that cash can be both helpful and a disadvantage to a firm. Therefore, this indicates that firms need to develop an optimal level where firms are less at-risk concerning costs associated with cash holding. An optimal level of cash among many firms has been advised to be where the marginal benefit of cash holding equals the marginal cost of doing the same (Mayer, 1998). It is also believed that in cases where firms are equipped with strong governance, shareholders' interests are always protected, and managers will always invest cash available on more profitable ventures (Iftikhar, 2017).

2.4 Theoretical Review

The hypothesis of this study was informed by pecking order theory, agency theory and the tradeoff theory.

2.4.1 Pecking Order Theory

In 1984 Myers developed the pecking order theory. This resulted from the influence of earlier literature, including a study of corporate debt (Donaldson, 1961). This theory guides the management of firms in making capital structure decisions. This theory is of the view that firms do not put much emphasis on a view of an optimal capital structure, but their greatest concern is the utilization of internal sources of finance over external sources (Ahmad & Atniesha ,2018; Abdullazade ,2019; Abdullazade 2020; Paulo *et al.*, 2018). Firms have three primary sources of funds to finance their operations or finance their investment opportunities; retained earnings, debt capital, and equity finance (Paulo, 2018). Studies done by frank *et al* (2003) suggest that the choice of this order is informed by the cost of finance and also transaction cost associated with different sources of finance. Additionally, Atanasova and Wilson (2003) reported that internal finance reduces information asymmetry issues.

The pecking order theory suggests the existence of information asymmetry between managers, owners, and potential investors (Ahmad & Atniesha, 2018). It is believed that the managers and the owners are well informed about the value of assets, profitability, and the firm's growth opportunities, a condition that may lead the potential investors in making wrong decisions (adverse selection) (Saleh, Shahar & Ibrahim, 2018). To avoid this problem, outside investors will always find ways to evaluate the business based on debt to equity. According to the study, additional debt sends a negative signal to the market, which is more likely to motivate managers to

utilize less debt than other finance sources (Caglio, Copeland & Martin, 2021). In line with the above argument, Eisfeldt and Muir (2012) add that firms are likely to go for less debt at the disposal of enough cash since managers feel that they would not be required to explain the proposed investments.

Additionally, financial leverage affects financial performance (Akhtar *et al.*, 2012 & Perinpanathan, 2014). A study by Kuo, Peng, and Wang (2014) points out that a high debt to capital ratio indicates high risks, which aggravates bankruptcy and financial distress, resulting in a negative effect on financial performance. Concurrently, Stulz (1990) concluded that debt has a negative relation to performance of organizations. Therefore, we expect that based on the pecking order theory, firms with high debt to capital ratio are likely to negatively affect financial performance (Butt, Khan, & Nafees, 2013).

Owners of debt capital demand regular payments in the form of interests Christiansen *et al* (2019). Therefore, firms are expected to dispatch more to debt holders than investors Moyen (2007) at high debt levels. Under debt overhang problems, Diamond and He (2014) indicate that shareholders may at times feel that debt holders stand to benefit more from investments made by the firm. This would make them less aggressive, and therefore at high-interest payments, financial performance is expected to be negatively affected. In contrast to this, some studies point out that managers are likely to send signals that they can service their external obligations in the event of utilizing financial leverage (Myers & Majluf, 1984).

Although this may sound to be true, scholars have criticized this theory because it does not provide adequate information about limits and the various types of funding. Butt *et al* (2013) points out that this theory is also limited. Unlike other capital

structure theories pecking order, theory does not provide the cost-benefit measures associated with a choice of funding. Many studies based on pecking order theory have recorded mixed findings on the effect of financial leverage on financial performance. Therefore, the limits and critics of this theory have informed this study to incorporate tradeoff and agency theory's assertions that agency cost is increased due to information asymmetry.

2.4.2 Agency Theory

Agency theory was proposed by Jensen & Meckling (1976). The theory is that conflicts are seen to rise in organizations due to; separation of ownership from control, the difference between the principles and the agents, and finally, information asymmetry. The agency theory is grounded on the hypothesis that a firm's governance is rich in information about the firm than the other stakeholders. This state of information asymmetry creates conflicts of interest between the principles and the agents. Conflicting interests leads to problems between; principals and agents, majority and minor shareholders, and finally, owners and creditors of the firm (Panda & Leepsa, 2017; Jensen & Meckling, 1976; Shi, Connelly & Hoskisson, 2017; Vitolla, Raimo & Rubino, 2020).

Managers may attempt to maximize their interest rather than shareholder's when ownership and the management of firms are separate (Jensen & Meckling, 1976). This may arise in a form where managers engage in risky business to please the shareholders and reward themselves with expensive holiday trips, pay rises and other incentives at the expense of the shareholders' (Panda & Leepsa, 2017). Studies point out that interest between minority and majority shareholders always arises when the majority shareholders decide to serve their interests, neglecting the minority shareholders Shi, *et al* (2017). This occurs during decision-making at company

meetings, where dominant shareholders find ways of aligning their interests with that of managers (Alim *et al.*, 2020). Studies have pointed out that this scenario is common among firms with few people owning most voting rights and family-owned businesses (Zhou, Peng, Chen, 2018).

Agency costs of companies can also arise in the form of agency cost of debt (Anderson, Mansi & Reeb, 2003). Such conflicts of interest arise between creditors and owners. According to Myers (1977), these conflicts usually occur when there is a risk of default leading to debt overhang problems where additional financial leverage will harm firm's financial performance resulting from high levels of interest expenses. Debt can have both a positive and adverse effect on firm performance and apparently, both effects can prevail in all firms (Dawar, 2014; Muritala, 2012). Literature claim that high financial leverage diminishes the possibility of unnecessary spending and over investments made by management. However, more debt usage in the capital structure may also mean more dependence on external capital that entails more scrutiny by fund providers, with less tolerance for unproductive investment operations and excess consumption of perquisites (Elsayed, & Elbardan, 2018).

Firms with high debt in their capital structure are likely to perform better than purely equity firms. Firms are expected to make profitable investment decisions with efficient managerial abilities (Cho & lee, 2019). However, managers of firms may use available cash to serve their interests leading to poor financial performance. To reduce this effect introduction of debt serves a monetary role for managers. Debt contracts demand more strict investment screening processes and decisions (Wu & Xu, 2020). Therefore, this would make managers of levered firms more likely to invest in profitable projects and, hence, perform better than purely equity-financed firms. However, with the increase in debt financing, the positive effect of debt will decrease,

and the negative impact will increase in situations where firms' ability to pay interest decline Guo *et al* (2021) therefore there is a likely positive relationship between interest coverage ratio and financial performance.

Although high debt levels may increase financial distress, its disciplinary roles in mitigating managerial wasteful spending behavior cannot be ignored (Elsayed & Elbardan, 2018). Literature indicates that certain levels of debt reduce the agency costs of equity. This, however, should be done in care since excess debt increases other costs such as borrowing and bankruptcy, resulting in poor financial performance (Mio *et al.*, 2020). However, this theory fails to consider certain costs other than agency-related cost, which affect performance of firms when financial leverage exceeds certain levels. Informed by this limitation, this study will complement the Agency theory with the tradeoff theory.

2.4.3 Tradeoff Theory

The development of the tradeoff theory by Myers (1984) can be dated back to the year 1956, during the development of the traditional theories about the capital structure. The conventional theories believed that the capital structure or the capital structure decisions were irrelevant in the computation of the value of a firm (Modigliani and Miller, 1958). They advised that the value of a firm is greatly dependent on the investment decisions made by its managers and the levels of profitability and not the levels of debt or equity ratios. In 1963 M&M revised the traditional theory and added that the tax benefits from using the debt capital increased the value of a firm. Interests on loans are detectable on taxation, and they advised that firm's management should use more financial leverage in their capital structure to maximize the firm's value (Kalam,& Khatoon, 2021).

Myers (1984) introduced the tradeoff theory that was seen as a more informed way in which the management would use it to make debt decisions. This theory is based on literature on taxes Modigliani and Miller (1963) and bankruptcy and financial distress cost Warner (1976) and the thoughts of Meckling (1976). Recently heavy criticism has pointed out that this theory only focuses on tax benefits and financial distress as the only cost and benefits associated with the choice of capital structure mix. It has also been a significant concern that the tradeoff theory fails to include the retained earnings in its capital structure decisions (Wottrich, Reijmersdal, & Smit, 2018).

Literature points out that an efficient capital structure balances costs such as financial distress, the interest cost with the agency benefits, and tax shields (Graham, 2003). An optimal capital structure should, therefore, yield the highest value of a firm and results in the least cost of capital (WACC). Such capital structures reflect the high value of stock prices, which reflects high-performance levels. The tradeoff theory believes that the management of a firm will always be rational in capital structure decisions. Studies postulate that firms will use debt capital to a point where the benefits and the cost will result in an equilibrium (Kraus & Litzenberger, 1973). Firms are more profitable when operating under minimum cost since this increase's profits. Benefits enjoyed by the firms in using debt can be the tax benefits. The management of the firms need to look into the costs such as the bankruptcy cost and the agency cost when it's about debt finance (Ni & Li, 2017).

Firms that use high levels of debt are highly valued than those that use low debt, such that a positive relationship is seen between debt to asset ratio and firms value (Dang, Ngo, & Hoang, 2019). Current literature also points out that debt increases the value of a firm, but this is only true until a point where further use of debt will lower the value of the firm (Myers, 1984). Studies have linked this with the associated interest

cost that reduces the earnings before tax (EBT). Higher levels of financial debt to capital ratio are associated with high risk of default, which always indicates that the firm is performing poorly.

Therefore, the trade-off theory predicts a positive relationship between leverage and cash holding. Firms that hold more cash can pay the contractual obligation on leverage (Alves & Ferreira, 2011). Literature based on the trade-off theory, specifically on the tax benefits, predicts that a firm's financial leverage and financial performance have a positive relationship (Sunardi, Husain,& Kadim, 2020). Literature also indicates that firms' debt policies affect performance since the level of leverage increases the value of firms to a maximum point where additional leverage will lead to a negative relationship (Ibhagui, & Olokoyo, 2018).

2.5 Review of Empirical Literature

2.5.1 Debt to Equity Ratio on Financial Performance of Listed Firms

Velnampy, & Niresh (2012) did a study on the relationship between capital structure and profitability. The study used debt to equity ratio and the debt to total funds to find the relationship between the capital structure and the profitability of a firm. From a sample of 10 firms from the financial sector listed in Sri Lanka, secondary data was collected from the financial statements presented by the management of the firms. The study employed a longitudinal study over where the 8 years period data was collected and analyzed. The study concluded that the banks used more debt to finance their operations, an indication that they were heavily dependent on debt financing. The study also found that there exists a negative relation between debt to equity and net profit. The study therefore recommended that the management of the firms should be prudent in their choice of the mix of debt to equity since it significantly affects profitability.

Kithandi, & Katua (2019) carried out a study on relationship between financial leverage and financial performance fuel and energy sector in Nairobi stock exchange. The study used gearing ratio and debt equity ratio as a measure of financial leverage. In measuring financial performance, the study used several ROA and ROE. The study used a descriptive research design where Secondary data was collected from a sample of five firms in the petroleum industry. Multiple linier regression model was used to find a strong negative relationship between debt-to-equity ratio and financial performance of the petroleum firms (ROA). The study concluded that firms should reduce the amount of debt in their capital structures to increase profitability.

Basit & Hassan (2017) did a study on the impact of capital structure and firms' performance on firms in the Karachi Stock Exchange. The study used debt ratio and debt to equity ratio to measure leverage and ROA, ROE and EPS to measure performance of textile firms. From a sample of 30 firms in the textile industry in a period of 10 years starting (2007 ending 2016). A descriptive research design was used and data was put through an ordinary least square regression model where D/E ratio have no significant impact on ROA, EPS and ROE.

Rahman, Sarker, & Uddin (2019) did a study on the impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh. A sample observation of 10 firms listed in the Dhaka stock exchange were subjected for study over a period of (2013-2017). The study used debt to equity ratio, debt ratio and equity ratio to measure the independent variables while profitability of firms was seen as a ratio of ROA, ROE and EPS. The fixed effect regression showed that debt to equity ratio positively affects returns on assets. Returns on equity was negatively impacted by the levels of debt-to-equity ratio while profitability (EPS) was found to be affected by debt-to-equity ratio negatively.

2.5.2 Debt to Capital Ratio on Performance of Listed Firms

San and Heng, (2011) did a study on the relationship of capital structure and corporate performance of firm before and during the financial crisis 2007. The study main focus was on construction companies that were listed in Main Board of Bursa Malaysia from 2005 to 2008. All the 49 construction companies were divided into big, medium and small sizes, based on the paid-up capital. The study used TD/C, D/C, D/A, D/EMV, D/CE and LTD/CE to measure the independent variable while EPS, OM, NM, ROC, ROE, ROA measured performance. Results from the time series –cross section analysis showed that D/C has a negative relationship in small company's performance. In sum, the outcome reveals that the relationship exists between capital structure and corporate performance in selected proxies.

A study by Sadia and Shahen (2012) on the impacts of capital intensity, size of the firm and profitability on debt financing on the firms in the textile industry. The study used debt to capital ratio. D/C ratio was the total debt/ debt +equity from owners. Variations among the variables of the study were tested and the f-test showed a significance negative relationship between financial leverage and profitability.

Saeed, Gull and Rasheed (2013) did a study on the Impact of capital structure on banking performance on Pakistan firms for a period 2007-2011 on the sample of 49 banks using D/C, STD/C and LTD/C ratios to measure capital structure. Performance was seen as a ratio of EPS, ROE, and ROA. Descriptive statistics, correlation matrix and regression model were used to determine the association between debt and performance, the study found a negative association between debt to capital ratio and performance of firms in Pakistan.

Abor (2007) did a study on debt policy and performance of SMEs in Ghana and South Africa. The study used panel data in finding evidence. Results indicated that debt to capital ratio had a significant negative effect on performance of SMEs in Ghana and South Africa

2.5.3 Interest Coverage Ratio on Performance of Listed Firms

Kithandi, and Katua, (2019) did a study on the effects of financial leverage on financial performance of fuel and energy sector companies in Kenya. A period between 2012 and 2016. The study used debt ratio, debt equity ratio and interest coverage ratio as proxy to measure financial leverage and return on asset as a proxy to measure financial performance. Explanatory research design was used and the descriptive statistics results indicated existence of insignificant positive relationship between interest coverage ratio and return on asset.

Zulaika (2016) did a study on the effect of financial leverage on financial performance of the national bank of Angola. In his study he analyzed the financial statements of these firms from the year 2011-2015. The study used a descriptive research design to examine the relationship between variables and the results showed that interest coverage ratio (ICR) has an insignificant positive relationship with return on assets (ROA) however this study found an insignificant relationship between interest coverage ratio and financial performance and recommended that firms should not use ICR in making financing decisions. This means that debt levels/ financial leverage has insignificant effect on firm's financial performance

A study by Setiany (2021) on the Effect of Investment, Free Cash Flow, Earnings Management, and Interest Coverage Ratio on Financial Distress selected a sample of 33 firms. The results from the Altman Z- score showed that interest coverage ratio

significantly affected the financial difficulties of healthy firms. This study defined healthy firms as firms that are going concerns and those that are trading well in the market.

Ji (2019) did study the Impact of interest coverage ratio on value relevance of reported earnings: evidence from South Korea. Price of stock at the end of the financial year were the proxy for sustainability. Out of a sample of 9232 the study was done on a period of 8 years where interest coverage ratio was found to have a significant negative effect on financial performance. The study also indicated that interest coverage ratio had a significant positive impact on the values associated to the total assets.

2.6 The moderating Role of Cash Holding on Financial Leverage and Financial Performance Relationship

Ginglinger and Saddour (2008) said that corporate cash holding is the measure of money held to back different exercises of an organization. As indicated by Keynes (1937), the advantages of money property can be examined as far as the exchange, the safeguard, and the theory intentions. Soltani & Ravanmehr (2011) on monetary administration writing pinpoints the significance of organization asset the board, from the review cash is a significant asset in an organization and influences financial performance of firms.

From previous studies, cash holding affects financial performance in different ways (La Rocca, & Cambrea, 2019). Positive effects of holding cash are justified by the significance of having available cash which will help a firm to not only meet its unforeseen needs but also aid a firm at times of crisis (Soltani & Ravanmehr, 2011). Firms that hold cash can reduce their transaction costs that manifest in their day-to-

day undertakings (Bugshan, Alnori, & Bakry, 2021). Unlike debt and equity cash and cash equivalent is readily available for firms. This therefore reduces costs such as issue cost of equity, cost of liquidating assets and cost of debt (Long 1968; Dalbor & Oak, 2011). More so the pecking order theory on capital structure indicate that utilizing internal sources of finance reduces information asymmetry problems which is always associated with external sources of capital (Ahmad & Atniesha, 2018; Myers & Majiluf, 1984).

Traditionally managers have been keeping huge amount of cash due to its positive impact on financial performance (La Rocca, & Cambrea, 2019). However recent studies have different views. Studies on agency theory indicate that holding cash always result to conflicts of interests (Jensen & Meckling 1976; Shi *et al.*, 2017; Vitolla, Raimo & Rubino, 2020). Managers of firms use cash to satisfy their needs at the expense of shareholders leading to poor financial performance. A study by Sandri,*et al* (2003) states that in presence of more than enough cash, majority shareholders align their interests with those of managers to a disadvantage of minority shareholders.

Cash held by a firm has an effect to both the levels of leverage and performance of a business. At high levels of cash holdings managers will be reluctant to seek for debt financing (Paulo, 2018). Concurrently the pecking order theory is of the view that firms will always utilize internal sources of finance before seeking external finance Myers and Majiluf (1984) A study by Haifeng Guo, Tenkir, and Zhen Wu (2021) found that cash holding and financial leverage have a negative relationship. Furthermore, introduction of cash holding in the study model by Dalbor and Oak (2011) led to a decline in financial leverage. Studies on agency theory indicate that cash holding is likely to have a negative relationship between financial leverage. This

is believed to be true as managers will always prefer cash as it does not come with contracts that will act to monitor their activities. A study by Haifeng, *et al* (2021) indicate that debt actually moderates the behaviors of managers by imposing extra cost to a firm. In line with arguments of previous studies, it's likely that their exist relationships between cash holding, financial leverage and financial performance.

2.7 Control Variables

Control variables are those variables that the scientist means to keep constant in the entire period of study. Control variables, may not be the main interest of the researcher but their significance in understanding the correlation between the focal variables of the study cannot be disregarded. To isolate the effects of financial leverage on financial performance the study will control on firm size, firm age, firm growth and the effect of firm industry.

2.7.1 Firm Size

Scholars from strategic management, accounting, finance and economics have attempted to study the reasons among variations of performance among firms (Ibhagui, Olokoyo., 2018). Size of a firm has been studied by different scholars, in their studies size has been demonstrated by the number of employees, the total assets held by the firm and also by the levels of sales among many indicators of size (Becker *et al.*, 2010). The size of a firm affects financial performance of a firm. Studies have pointed out that large firms enjoy economies of scale unlike small firms (Chodorow-Reich *et al.*, 2021). More so studies show that large firms can capitalize on opportunities that small firms may fail to finance (Abbasi, & Malik, 2015).

A study by Chen, Huang and Yang (2013) examined the relations between audit quality, audit firm size, and financial performance. This study evaluates audit quality

of firms from human capital-related factors, such as educational qualification level of employees, experience of employees, and professional training. From a sample of 9192 firms both primary and secondary were collected and findings indicate that firms' size has a positive relationship with financial performance of firms.

Abbasi and Malik (2015) did a study on Firms' size moderating financial performance in growing firms in Pakistan. In this study size of the firm was measured in form of market capitalization and with a sample of 50 firms, the study collected cross-sectional data and used descriptive and inferential statistics to find that size of a firm has a positive but weak effect on financial performance of listed firms in Pakistan. The study therefore recommended that management of firms should keep an eye on the size of the firm.

2.7.2 Firm Age

Age of a firm can simply be said to the number of years the firm has been in operation (Putri & Rachmawati, 2017). Age greatly affects performance of a firm. Several scholars have investigated on the effect of age and financial performance of a firm and several studies have concluded that firms that have been in the game for long may enjoy such benefits in relation to brand image and also experience Zahra *et al* (2018), this is common among the firms in the manufacturing sector. Studies have also shown that age among firms in the service and banking sector gives the customers a feeling of security which ultimately leads to performance improvements. This therefore reflects that age of a firm has a positive relationship with the performance of a firm.

In Europe, Loderer and Waelchli (2010) assess the association between firm age and performance. The study used an explanatory research design. The results indicated that firm age affects the financial performance of commercial banks.

A study by Burca, and Batrinca (2014). On the determinants of financial performance. The study used company's size, growth, retention ratio, solvency margin and investment as determinants of financial performance of 41 insurance firms in Romania. Company size was found to have a positive relation with financial performance of insurance firms in Romania.

Osunsan *et al* (2015) examined the effect of firm age and financial performance of small business enterprises in Kampala. The study used a descriptive research design to find mean, median, mode, standard deviation, skewness and kurtosis. The study was of the findings that age of a firm significantly affect financial performance of small business enterprises in Kampala.

Abubakar, Sulaiman, & Haruna (2018) Carried out a study on the effect of firm's characteristics on financial performance of listed insurance companies in Nigeria. Age of the firm was measured by the number of years the firm has been in existence. Secondary data was collected for a period of 10 years (2007-2016). Regression analysis was done and findings indicate that age of a firm significantly affects financial performance of insurance firms in Nigeria. From the study aged firms kept more cash which resulted to poor performance and therefore negative relationship

2.7.3 Firm Growth

Firm growth is one of the central engagements in the current literature. Business owners, managers and investors project financial performance by the growth sequence of a firm (Bottazzi, *et al.*, 2011). Growth measurement dimension takes the form of improved sales, profitability, assets, number of employees or take the other dimension of improved services which leads to quality or better processes Gupta, (2019). Studies

by Neneh and Van, (2017) have highlighted that sales assets and number of employees are indicators of growth of a firm.

Literature proves that growth affects financial performance of a firm. Firms that have used sales to measure growth have indicated positive relationship between sales and financial performance (Neneh, & Van, 2017). Firms with increased assets indicate that they are utilizing assets to generate maximum revenues thus high ROA.

Batchimeg (2017) did a study on determinants of financial performance on 100 firms listed in the Mongolian stock exchange. Financial performance was measured using ROA, ROE and ROS while cost to revenue ratio, short term debt to total assets, quick ratio, cash ratio earnings per share growth in profit and growth in assets we used as the independent variables of the study. Panel data for the period 2012-2015 was collected and results from the regression indicate that growth in assets is insignificant to financial performance of firms in Mongolia.

Pantea, Gligor, & Anis, (2014) did a study on Economic determinants of financial performance on firms listed in Bucharest stock exchange. The study used firm size growth, capital intensity, human resource and corporate social responsibility as determinants of financial performance. Data for the 55 firms were collected from a period of (199-2012) and results indicate that firm's growth has no linkage to financial performance.

2.8 Research Gap

Recently financial performance of firms has been a debate by many scholars. Several factors have been discussed to affect financial performance of firms both globally and locally. Accountants and economists have linked leverage to performance, with scholars finding mixed results about how financial leverage affects firms' performance

in various economies. Literature shows mixed and non-conclusive findings on the effects of financial leverage and financial performance of firms. Most studies have advanced in developed economies, and studies in Africa have been done on developed countries but are limited here in Kenya. Recently, there have been attempts to study leverage in Kenya. This is the result of inconsistent market growth and the declining levels of dividends among the majority of firms in Kenya. Literature illuminates that cash holding is likely to moderate the relationship between financial leverage and financial performance, especially at times of financial distress. Most studies to test this effect have focused on developing economies, while none in Kenya. Therefore, the study will test the moderating role of cash holding on the relationship between financial leverage and financial performance of listed firms in Kenya.

2.8.1 Summary of Literature Review

Author and objectives	Variables used	Methodology and findings	Research gap
-Capital structure and profitability - Velnampy, & Niresh, (2012)	-Debt to equity ratio -Debt to total funds	-Longitudinal study - findings of the study shows a negative relation between debt and FP	-The firms under study are banks which have different capital structure as compared to firms in different sectors
-The relationship between capital structure and profitability of firms in NSE -Shehla, Atiya and Haleema (2012)	-equity ratio - debt to total funds	descriptive research design - negative association between D/E and FP	-The size of the firms under study was five, the sample is too small to make a conclusive findings about firms in Kenya. -It only focused in firms in petroleum industry
-Impact of capital structure and firms performance on firms in the Karachi Stock Exchange -Basit & Hassan (2017)	-debt ratio -debt to equity	descriptive research design the study found D/E ratio to have no significant impact on ROA and ROE	The study only focused on textile firms The study was done on a developed economy as compared to Kenya.
- Impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh -Rahman, Sarker, & Uddin. (2019)	-debt to equity ratio -debt ratio -equity ratio	-fixed effect regression -D/E positively affects ROA. -ROE was negatively impacted by the levels of D/E - (EPS) was found to be affected by D/E negatively.	Inconsistent findings among different proxy measures of both leverage and performance
San, & Heng,(2011).did a study on the relationship of capital structure and corporate performance of firm	Total debt to capital Debt to capital Debt to asset -Debt to equity margin value -Debt to capital employed ratio -Long term debt to capital employed ratio	- Time series cross section analysis The study showed a negative relationship between debt and ROA	The sample under the study was only considered under the construction sector.
-Impact of capital structure on banking performance on Pakistan firms -Saeed, Gull & Rasheed, (2013).	-Debt to capital -Short term debt to capital ratio -Long term debt to	Descriptive statistics, correlation matrix and regression model negative association between D/C and performance of firms	The study did an examination on baking sector whose findings cannot be generalized to firms in other sectors of the economy

	capital ratio	positive association between short term debt and ROA	
-Effects of financial leverage on financial performance of fuel and energy sector companies in Algeria - Mustafa Zuthimalim (2015)	debt ratio, debt equity ratio interest coverage ratio	-Explanatory research design Descriptive statistics The results indicated existence of insignificant positive relationship between ICR and ROA -Negative relationship between D/E and debt ratio with FP	The findings of the research is only skewed towards the petroleum sector. The study only focused on the direct relationship between debt and financial performance.
-Effect of financial leverage on financial performance fuel and petroleum sector firms in Angola -Zulaika (2016)	-Interest coverage ratio Debt ratio	-descriptive research design The study results showed that (ICR) has an insignificant positive relationship with (ROA)	The study did not consider some variables affecting financial performance of firms in Angola
-Effect of Investment, Free Cash Flow, Earnings Management, and Interest Coverage Ratio on Financial Distress -Setiany, (2021)	. -Free cash flows -Earnings management -Interest coverage ratio	. The results showed that ICR significantly affected the financial difficulties of healthy firms.	The findings of the results is only applicable to healthy firms as described by the study

2.9 Conceptual Framework

A conceptual framework is a representation of the variables under study in a diagram format. Financial leverage is the independent variable in the study while the financial performance is the dependent variable. Financial leverage in the study is identified as ratios which are the debt to equity, debt to capital and the interest coverage ratio. In this study, cash holding is the moderating variable and lastly the control variables are the size of the firm and the age of the firm. The conceptual framework is as shown below.

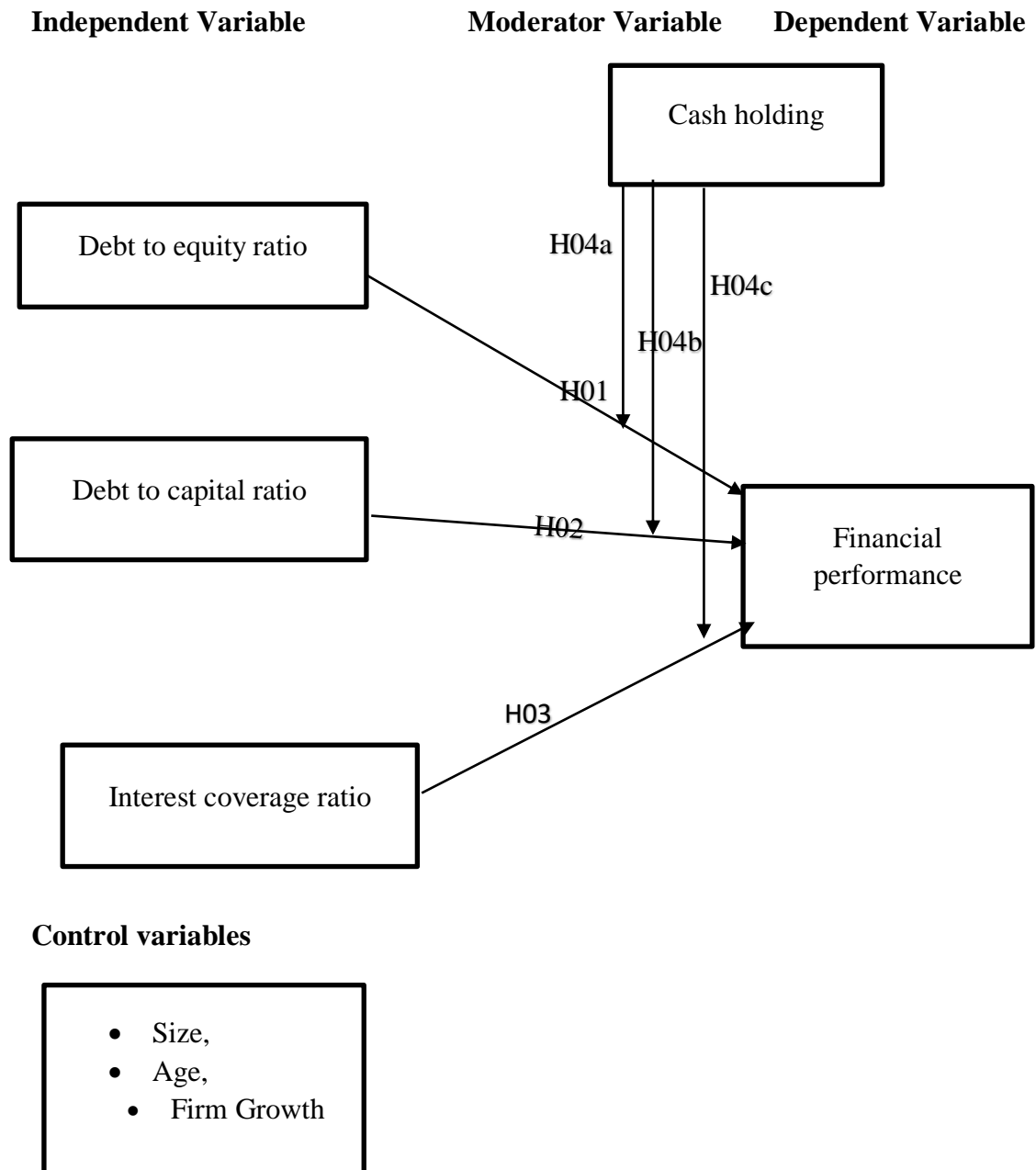


Figure 2.1 Conceptual Framework 1

Source: Researcher 2021

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Research methodology means the philosophy of how research should be undertaken. This section gave an overview of the research design, target population, sampling techniques, model specification, and measurement of the variables, data collection and data analysis.

3.1 Research Paradigm

A research paradigm is a shared perspective that guides research activity or a study (Alise & Teddlie, 2010). Dammak (2015) asserts that a paradigm is a framework through which a researcher makes decision on methodological aspects in a study. As per Bhattacharjee (2012), the two well-known research paradigms are positivism and post-positivism. Positivism view progresses that experimentation, observation and reason based on experience are the basic pillars in understanding human behavior (Comte and Bhattacharjee, 2012). Positivism tries to set up causal relationship through deductive reasoning. The fundamental perspectives on positivism include hypotheses creation, estimation, theories testing, and drawing a conclusion (Kivunja & Kuyini, 2017). Moreover, positivism supports those quantitative methodologies are appropriate to produce substantial experimental evidence and a hypothetically significant understanding of this evidence (Adam *et al.*, 2014). Subsequently, this study was grounded on the positivism paradigm since the study aimed at establishing a causal relationship between financial leverage, cash holding and financial performance.

3.2 Research Design

This study took explanatory and longitudinal research design. A longitudinal design utilizes determined or repeated measures to follow open directions of people throughout a drawn-out timeframe (Caruana *et al.*, 2015). The justification of a longitudinal research design was that panel data for the period 2011 to 2021 was analyzed to test the hypotheses.

Explanatory studies try to build up causal relationships between research variables, with the fundamental issue being to study a problem to explain the relationship between variables (Saunders & Rojon. 2011). The decision for an explanatory research design was on the grounds that, this study planned to explain the relationship between financial leverage, cash holding and financial performance of listed firms in Kenya.

3.3 Target Population

Target population defines the study subjects who possess similar traits in one way or another (Orodho, 2005). Therefore, this implies a collection of elements collected upon which findings can be generalized. The study population consisted of 67 listed firms on the Nairobi Securities Exchange for the period between 2011 and 2020. An inclusion and exclusion criteria was applied where firms that did not operate consistently were excluded from the study. Additionally, the study chooses to exclude firms listed after the year 2011. Finally, firms that failed to provide all relevant data for the analysis were also excluded, leading to a survey study of 39 firms as provided in the appendix.

3.4 Data Collection

The data gathered was secondary and quantitative. Quantitative data comprise sets of observed or measured variables (Tharenou, Donohue & Cooper, 2007). Essentially, quantitative data portrays a phenomenon by assigning in order and significant manner (Zikmund, Carr, & Griffin, 2013). For the most part, quantitative data is a form of numbers and figures on which statistical analysis is the premise of making inductions. In this study, every variable the study was represented and measured numerically.

Secondary data alludes to other researchers or entities' information or facts before the current study. Essentially, Tharenou *et al* (2007) hypothesize that secondary data "is data that has not been gathered for study purposes. Though secondary data is historical, it is considered unbiased, in this way, dependable. Data utilized in this study was extracted from individual companies' audited yearly reports. The variables were changed into natural logarithms for consistency in estimation, simplification of the data, and linearity. A data mining technique was utilized to gather data with the assistance of a data collection schedule. This was used as a tool to guarantee the extraction of every applicable data. Relevance and accessibility of data collected were premised on an inclusion-exclusion criteria.

3.5 Data Analysis

Data analysis is the utilization of reasoning to comprehend the data, and it envelops searching for predictable and consistent patterns and summing up significant subtleness found in the study (Munch, 2017) before data analysis was data entry, data cleaning, and changing over the raw data into the different proxies' measurements of the research variables.

Data were analyzed through descriptive and inferential statistics. Descriptive statistics focuses on summarizing the data into mean, least and maximum values, and standard deviation (Mihas, 2019). Inferential statistics utilized regression and correlation analysis, where Pearson's pairwise correlation was used to gauge the direction and magnitude of the relationship among the research variables. The study's hypotheses were tested by interpreting the beta coefficients and ρ -values of multivariate regression estimation equation. The Hausman test results guided the decision between the fixed and the random effect regression model.

3.6 Measurement of Research Variables

Research variables should be quantifiable to enable hypotheses testing, making inferences, and reaching conclusions. Measurement entails the operationalization of research variables. Sekaran & Bougie (2016) characterize the operationalization of concepts as “operationally defining a concept to render it measurable is done by looking at the behavioral dimensions, facets, or properties denoted by the concept. These are then translated into observable and measurable elements so as to develop an index of measurement of the concept”. Operationalization thus entails reducing research variables into their respective empirical measurements. The study operation operationalized the variables as follows.

3.6.1 The dependent variable

Previous studies have used different accounting measures to quantify financial performance, which include ROE, ROA, GM and EPS (Raza, 2013). Market based measures such as stock return and volatility has also been used for performance measures (Welch, 2004). Both accounting base and Tobin's Q measure has also been used for performance measurement (Abor, 2007). This study used returns on assets to measure financial performance and followed previous studies in recognizing

accounting-based measures as appropriate in quantifying financial performance of individual firms (Amidu, 2007).

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Total assets}}$$

3.6.2 The independent variables

The independent variable in this study is financial leverage. The measurement tools of the levels of financial leverage are measured by the Debt-to-Equity ratio, the debt to capital ratio, and the interest coverage ratio. This study followed previous studies in assigning financial leverage proxies as D/E and D/C Burca & Batrinca. (2014) and ICR.

Three measurement units are used to measure financial leverage. The study used debt to equity ratio, which explains how the company has financed its operations by using debt. The D/E ratio was determined by finding a sum of the company's total debt divided by the shareholder's equity.

$$\text{Debt/Equity} = \frac{\text{Total Debts}}{\text{Total shareholders' equity}}$$

The debt to capital ratio was the second proxy to measure financial leverage. This ratio is used to measure the firm's capital structure and the financial solvency of the firm. This ratio is an essential consideration since it shows the degree of financial leverage at a particular time. The data to calculate the debt to capital ratio was readily available in the balance sheets and was calculated by dividing the total debts of the firm by the sum of total debt and equity.

$$\text{D/C} = \frac{\text{Today Debt}}{(\text{Total Debt} + \text{Total Equity})}$$

The last measurement proxy of financial leverage in this study was the interest coverage ratio. This is a debt and profitability ratio that is used to assess how efficient the firm is in the settlement of its interests on debt balances. The value of interest coverage was calculated by finding the values of the firms earnings before interests and taxes divided by the interest expenses at the given period.

$$\text{ICR} = \frac{\text{EBIT}}{\text{Interest Expenses}}$$

3.6.3 Moderating variable

A moderating variable is a research variable that affects the strength and direction of the two variables under study relate. In this study Cash ratio measured cash holding levels as informed by studies (Duchin, 2010). The cash ratio was determined by information from the audited balance sheets of the firms under study in such a way that;

$$\text{CR} = \frac{\text{Total cash reserves}}{\text{Total assets.}}$$

3.6.4 Control variables

To isolate the effects of financial leverage on financial performance, the study controlled on firm size, firm age, and firm growth. Measurement of control variables was;

From previous studies, the age of a firm has been measured by the total number of years since incorporation. This study went further in subjecting the age value to natural logarithm (Rafiq, Salim, & Smyth, 2016).

Size a firm was measured by total assets of the firm. This data was then subjected to log transformation to attain linearity (Orlitzky, 2001).

FS = ln (Total Assets)

Firm growth was a ratio of change in assets of a firm

$$FG = \frac{(\text{Assets of year } t - \text{assets of year } t - 1)}{\text{Assets of year } t - 1.}$$

3.7 Model Specification

The study utilized panel data regression analysis. In particular, Pooled regression sort of panel data was utilized. This pooled regression model is otherwise called the consistent coefficient model. It is called so on the grounds that both intercepts and slopes are consistent. The panel data combines cross-sectional organization data and time series data with the assumption that there is no significant cross-section or temporal impacts. The model dismisses the time, space, or individual effects, and all organizations are comparable to capital structure and there is no significant industry or time impact on leverage. The general type of the model utilized is

$$y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots m$$

Where y_{it} = Is the measure of dependent variable of firm i and time t

α = intercept of the equation

β_i = Co-efficient for X_{it} variables

X = independent variables for firm

i = number of the firms i.e. $i = 1, 2, 3 \dots N$

t = time period i.e. $t = 1, 2, 3 \dots T$

Model 1

This model showed the relationship between the control variable and the predicted variable (financial performance). This study was controlled by size and the age of the firm. Therefore, the model is presented as

$$ROA(it) = \alpha + \beta_1(it)FA(it) + \beta_2(it)FS(it) + \beta_3(it)FG(it) + \varepsilon(it) \dots\dots\dots Model 1$$

Model 2

This model showed the (direct effect) relationship between the levels of debt to the performance of the firm

$$ROA(it) = \alpha + \beta_1(it)FA(it) + \beta_2(it)FS(it) + \beta_3(it)FG(it) + \beta_4(it)D/E(it) + \beta_5(it)D/C(it) + \beta_6(it)ICR(it) + \varepsilon(it) \dots\dots\dots model 2$$

Testing the moderating role of cash holding

According to literature by Baron and Kenny, a variable is considered a moderator if it proves the following conditions; firstly, there must be an existence of a relationship that can be moderated. This, therefore, signifies that the relation tested in model 3 above must prove to be significant; otherwise no moderation. Secondly, the moderator variable must significantly affect the outcome variable. This effect was tested in model three below. Finally, the interaction term, i.e., between the moderator and the dependent variable must be significant. Significance of interactions was tested using a hierarchical regression model where interactions were done step by step, as shown by models 4, 5, and 6.

Model 3

This model presented the moderator variable to test its significance on the outcome variable.

$$ROA(it) = \alpha + \beta 1(it)FA(it) + \beta 2(it)FS(it) + \beta 3(it)FG(it) + \beta 4(it)D/E(it) + \beta 5(it)D/C(it) + \beta 6(it)ICR(it) + \beta 7(it)CH(it) + \varepsilon(it) \dots \dots \dots \text{model (3)}$$

Model 4

This model showed the first interaction between the moderating variable (cash holding and the first independent variable debt to equity ratio.

$$ROA(it) = \alpha + \beta 1(it)FA(it) + \beta 2(it)FS(it) + \beta 3(it)(it)FG(it) + \beta 4(it)D/E(it) + \beta 5(it)D/C(it) + \beta 6(it)ICR(it) + \beta 7(it)CH(it) + \beta 8(it)d/e(it)*ch(it) + \varepsilon(it) \dots \dots \dots \text{model (4)}$$

Model 5

This model showed the second interaction between the moderating variable (cash holding and the second independent variable debt to capital ratio

$$ROA(it) = \alpha + \beta 1(it)FA(it) + \beta 2(it)FS(it) + \beta 3(it)FG(it) + \beta 4(it)D/E(it) + \beta 5(it)D/C(it) + \beta 6(it)ICR(it) + \beta 7(it)(CH(it)) + \beta 8(it)d/e(it)*ch(it) + \beta 9(it)d/c(it)*ch(it) + \varepsilon(it) \dots \dots \dots \text{model (5)}$$

Model 6

This model showed the final interaction between the moderating variable (cash holding and the first independent variable interest coverage ratio.

$$\begin{aligned}
 ROA(it) = & \alpha + \beta_1(it)FA(it) + \beta_2(it)FS(it) + \beta_3(it)FG(it) + \beta_4(it)D/E(it) \\
 & + \beta_5(it)D/C(it) + \beta_6(it)ICR(it) + \beta_7(it)CH(it) + \beta_8(it)d/e(it)*ch(it) + \beta_9(it)d/e(it)*ch(it) \\
 & + \beta_{10}(it)icr*ch(it) + \varepsilon(it) \dots\dots\dots model (6)
 \end{aligned}$$

ROA= Returns on Assets

FA= Firms age

FS= Firms size

FG = Firm Growth

D/E= Debt to Equity

D/C = Debt to Capital

ICR = Interest Coverage Ratio

CH = Cash Ratio

ε = error term.

3.8 Model Assumptions

The model follows a linear equation form. The dependent function of the equation is affected by multiple factors and therefore holds the assumptions of a multiple linear equation. This paper also studied the cause-effect and examined data at different stationary points. A multiple linear regression model assumes multivariate normality, no multicollinearity, and heteroskedasticity Plonsky & Ghanbar (2018).

3.8.1 Diagnostic Tests regression and panel data diagnostic tests.

Regression diagnostic tests are methods used to discover hitches fundamental to regression analysis and establish if various assumptions appear practical (Fox, 1991). Several assumptions requirements need to hold in a regression model before data is presented for analysis. These assumptions include; normality, autocorrelation multicollinearity, and heteroscedasticity (Hayes, 2018).

3.8.2 Normality Test

Regression models assumed multivariate normality; this assumption is of the view that residuals must be normally distributed (Schmidt & Finan, 2018). If this assumption does not hold, the effect is a reflection of the sampling variance. Condition for normality serves to be necessary since the powers of F-tests and T-tests are very sensitive to normality. This condition assures that the p -values for the t-tests and F-test was valid. Studies have tested normality by using the Jarque-Bera and Shapiro Wilk tests. The null hypothesis for the test is normality, implying that the p -value is lower than the $\text{Prob} > \chi^2(2)$ for normality. This study used the Shapiro Wilk test, where if p values appear greater than 0.05, the null hypothesis is accepted, and the residuals are normally distributed.

3.8.3 Multicollinearity Test

Multicollinearity means that independent variables are positively correlated with each other. Values greater than 30 indicate strong multicollinearity among variables. This ultimately affects the correctness of the final estimate of the standard error of the regression coefficient. Various scholars have eliminated multicollinearity by centering the data while others have dropped a variable when there are high levels of correlation. Variance Inflation Factor (VIF) was used to test the hypothesis on multicollinearity. $VIF = 1/T$ where T is the tolerance which is $T=1-R^2$. According to VIF, multicollinearity exists if the VIF values is 10 while values of 5 may indicate multicollinearity. Higher values of R^2 indicate the increased power of prediction between independent variables. Gujarati, Porter, & Gunasekar (2012) proposed that multicollinearity problems can be solved by increasing the sample size, data pooling, or dropping the variable.

3.8.4 Heteroskedasticity Test

Heteroscedasticity is a linear regression robust check for constant variance in error terms. If the error term proves to be different every time, the final estimate of the model may be misleading. To check for this assumption, Breuch –Pargan test was done. The decision to accept or reject the null was based on the P-values where the null hypothesis (Ho constant variance) was not rejected as the $\text{prob} > \chi^2 = 0.05$ and rejected at $\text{prob} < \chi^2 = 0.05$.

3.8.5 Autocorrelation Test

According to Gujarati *et al* (2012), autocorrelation is “correlation between members of a series of observations ordered in time.” The existence of autocorrelation in data makes the projected values of t, F, and χ^2 inappropriate. Tests for autocorrelation in studies with panel data are done using techniques such as the Baltagi-Wu test, the Durbin Watson test, and the Breusch-Godfrey test. Drukker (2003) points out that these tests have numerous specification assumptions like the individual effects, a requirement for non-stochastic regressors, and the inability to work in heteroscedasticity. The study, therefore, used the Wooldridge test since this test is not affected by the limitations above. This technique serves to be capable of dealing with unbalanced panel data, with and without gaps in the observations (Drukker, 2003). For this test, the beta is first estimated by regressing a change in the predicted variable at a point in time on a change in predicting variable at the same time and obtaining the residual. The absence of autocorrelation is fulfilled if $\% \text{change in error } (t), \text{ on } (t-1) = -$

5

3.8.6 Stationarity Test

The basic assumption of a regression problem is that the data in a time series analysis is stationary. Stationary in this context is to mean that the variables under in the

regression problem are constant over time (Nazlioglu, & Karul, 2017). In cases where this assumption does not hold, there is a result of a bogus regression relationship and the validity of the t-test and F-tests. Stationary deduce that the mean, variance, and auto-covariance are not changing with time. Therefore, the study conducted multiple root tests on the variables using the Levin- Lin Chu test. In cases where the data fails to be stationary, the ultimate solution was de-trending the time series by using the first differences. In testing for this assumption, a condition to reject the null hypothesis holds when the test statistic results yield a $p\text{-value} < 0.05$.

3.8.7 Hausman Test

In regression analysis, Hausman's test dictates the choice between fixed and random effects. In fixed effect regression, the analyst is in the will to control the time-invariant unobserved single effect correlated with the observed independent variables. The fixed effect regression model assumes that at any time, the traits are unique in the variables thus, there is no association between the variables' traits. On the other hand, the random effect assumes there exists a random variation among variables and the effect is uncorrelated to the predictor variables (Greene, 2003).

Hausman's test consists of two hypotheses; the null hypothesis with the favored model to be the random effect, while the alternative hypothesis goes with the fixed effect. If $p\text{-value} < 0.05$, the null hypothesis is rejected; hence the fixed-effect model should be used; otherwise, the random-effect model.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings of the study. From the previous chapter, the study recommended diagnostic tests to test the fit of the models used and justifications for adopting stated statistical procedures. This chapter, therefore, serves to present the findings in five key sections; descriptive statistics, diagnostic tests, correlation analysis, hypothesis tests, and finally, the results for moderation.

4.2 Descriptive Statistics

Table 4.1 presents the summary of the study variables. It defines the mean, standard deviation, minimum and maximum values recorded on the variables studied. The mean returns on assets indicating financial performance of listed firms were 0.0447255 with the lowest value of -0.2553873, a maximum value of 0.266378 and a standard deviation of 0.0765138. A mean ROA of 0.0447255 indicates that listed firms in Kenya are not generating maximum returns from their assets. The difference between the minimum value ROA and maximum shows that profitability of firms listed in Kenya varies widely.

The debt-equity ratio mean value was 1.755988, a minimum of 0 and a maximum value of 8.076124 with a standard deviation of 1.671666. From the results, it can be concluded that firms in Kenya are highly levered. The difference also indicates that firms a significant proportion of firms highly depend on debt as indicated by the D/E ratio of 8.076124. Additionally, debt capital ratio had a mean value of 0.4840639, a minimum of 0, a maximum of 0.9917642 and a standard deviation of 0.199227. Interest coverage ratio averaged at 3.0966, a minimum of -3.255892, a maximum of 12.85083 and a standard deviation of 2.9928. This signifies that firms listed in Kenya

fairly can serve their debt obligations. However, the variability between the minimum and maximum indicates that some firms are utilizing debt out of their reach.

Cash holding displayed a mean of 0.0592078 with a minimum and maximum values of 0 and 0.2869323 respectively with a standard deviation of 0.0529605. From the results, it can be concluded that majority of firms listed in Kenya keep a relatively low level of cash and cash equivalents as a ratio of their total assets

The control variables of the study firm age averaged at 67.55128, minimum 3, maximum of 151 (log-transformed values of average 4.2795, minimum of 3.639 and a maximum of 4.8903 with a standard deviation of 0.2734) and a standard deviation of 30.1025 years. Additionally, the size of firms listed in NSE averaged 16.66491 with a minimum value of 12.02837, a maximum of 19.86773 and a standard deviation of 1.671067. Finally, growth of firms averaged at 0.0680944, with a minimum of -0.5668528 and a maximum of 0.4341003 with a standard deviation of 0.1340876.

Table 4.1: Descriptive Statistics

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
ROA	390	.0447255	.0765138	-.2553873	.266378
D/E	390	1.755988	1.671666	0	8.076124
D/C	390	.4840639	.3452381	0	.9917642
ICR	390	3.096684	2.992858	-3.255892	12.85083
CH	390	.0592078	.0529605	0	.2869323
FA	390	4.279566	.2734156	3.639057	4.890372
FS	390	16.66491	1.671067	12.02837	19.86773
FG	390	.0680944	.1340876	-.5668528	.434100

Source: Researcher, (2021)

4.3 Diagnostic Tests

Before choosing which panel regression model to use and reducing the chances of a spurious regression problem, robustness tests were conducted, including a test for normality, test for multicollinearity, unit root test, test for heteroscedasticity, autocorrelation test, and finally, specification error test.

4.3.1 Normality Tests

The Shapiro- Wilks tests provide a null hypothesis that residuals are normally distributed. Table 4.2 provides the results of the test above. From the table, the p-value of table 4.2 is above 0.162, therefore, accepting the null hypothesis that the residuals are normally distributed.

Table 4.2: Shapiro Wilk Normality Test

Variable	Obs	W	V	Z	Prob>z
Myresiduals	390	0.9943	1.512	0.982	0.162307

Source: Researcher, (2021)

4.3.2 Multicollinearity

Multicollinearity indicates that two or more independent variables of the study are highly correlated. Multicollinearity among variables can cause a detrimental effect on the output of a multiple regressions model. According to Gujarati *et al* (2012), multicollinearity presents itself when the output of the VIF exceeds values of 10. Additionally, the event where coefficients of correlation exceed 0.9 indicates high levels of relation among variables (Garson, 2013). According to table 4.3, the average VIF is in the range of (1.09 and 1.83) which is below the limit of 10 indicating that the variables do not suffer from multicollinearity.

Table 4.3: Multicollinearity

VARIABLE	VIF	1/VIF
D/C	1.83	0.547424
D/E	1.62	0.618048
FS	1.29	0.772334
FG	1.13	0.887563
ICR	1.11	0.899788
AGE	1.09	0.919108
MEAN VIF	1.34	

Source: Researcher, (2021)

4.3.3 The Heteroscedasticity Assumption.

Heteroscedasticity assumption necessitates a need for a constant error variance in a regression model. To crisscross on this assumption Breusch-Pagan / Cook-Weisberg test for heteroskedasticity was conducted where the null hypothesis stated is rejected at p-values <0.05.

Ho: Constant Variance

Based on the results in table 4.4 below (Prob > chi2 = 0.1094) not significant the alternative hypothesis was rejected while the null was accepted, therefore constant variance of error terms.

**Table 4.4: Results for Heteroscedasticity
Breusch-Pagan / Cook-Weisberg test for heteroscedasticity**

Ho: Constant variance		
Variables: fitted values of ROA		
Chi2(1) =		1.49
Prob > chi2 =		0.2218

Source: Researcher, (2021)

4.3.4 Unit Root Test

In the event of non-stationary data, the econometric model is very likely to yield a non-sensible or rather a spurious result from the regression output in an econometric model (Gujarati *et al* 2012). Non-stationary data refers to a data series that does not have a steady mean, variance, and auto-covariance at different lags over a long run (Hossain & Hossain 2015). Following previous studies, it is more important to check if the panel data are stationery. Previous studies have recommended the Levin lin chu, Breitung to test for stationary in panels (Nazlioglu & Karul, 2017). Guided by the hypothesis on stationary tests with the Levin lin chu test;

(*H₀*): Panel data contains unit root

(*H_a*): Panel data is stationary.

The study considered the p – values to either accept the null hypothesis at $p > 0.05$ or reject it at $P < 0.05$. Results from table 4.6 show p values < 0.05 ; therefore, the alternative hypothesis is favored. At levels, Returns on assets failed to meet the stationery assumption where unit-roots at first difference provide p value $= 0.0000 < p = 0.05$, fulfilling the assumption of being stationery.

Table 4.5: Results of Unit Root Test

VARIABLE	At levels		First difference	
	STATISTIC	P-VALUE	STATISTIC	P-VALUE
VARIABLES				
ROA	-1.2402	0.1075	-6.5577	0.0000
D/E	-3.5624	0.0002	-	-
D/C	-17.9222	0.0000	-	-
ICR	-3.1474	0.0008	-	-
CH	-5.4573	0.0000	-	-
FA	-12.6867	0.0000	-	-
FS	-9.3743	0.0000	-	-
FG	-7.5404	0.0000	-	-

SOURCE (FIELD DATA, 2020)

4.3.5 Autocorrelation

The existence of correlation among observed values over a given period presents autocorrelation (Gujarati *et al.*, 2012). Autocorrelation in data is explained when a value can be highly predicted by a previous value (Sing *et al.*, 2020). The study used the Wooldridge test in testing the hypothesis where the null hypothesis; was no first-order autocorrelation). Based on the results (Table 4.6), the prob $>= 0.0890 > 0.05$)

therefore, the null hypothesis is favored while the alternative hypothesis is rejected, indicating that there is no serial autocorrelation among the data under study.

Table 4.6: Wooldridge Test for Autocorrelation

Wooldridge test for autocorrelation in panel data

H0: no first order autocorrelation

$F(1, 38) = 3.047$

Prob > F = 0.0890

4.3.6 Specification Error Test

Table 4.7 highlights the model specification error test results (Prob>F=0.1329) after conducting the Ramsey's test statistics. From this assumption, the null hypothesis being model has no omitted variables, and this would be rejected if the value of prob > F=<0.05. Results from the table below support the null hypothesis; therefore, the model has no omitted variables.

Table 4.7: Ramsey Reset (test using powers of the fitted values of FP)

Ho:	model has no omitted	Variables
	$F(3, 379) =$	1.88
	Prob > F =	0.1329

Source: Author 2021

4.4 Correlation Analysis

The objective of correlation analysis is to display the magnitude and nature of association between research variables. The magnitude of association and the direction of association are presented in table 4.8 below. The Pearson pairwise correlation displays a strong negative relationship between the debt-equity ratio and financial performance ($r = -0.4443$; $\rho < 0.05$). This implies that as values of debt-to-equity ratios increase, firms become less profitable. It can therefore be concluded that financial performance of listed firms is impacted negatively by debt-to-equity ratio.

Debt capital ratio ($r = -0.2496$; $\rho < 0.05$) this also provides that as firms debt to capital increases, firms financial performance is impacted negatively. Results indicate that interest coverage ratio and financial performance are positively correlated ($r = 0.2726$; $\rho < 0.05$). The correlation between interest coverage ratio and financial performance suggests that as firms increase the power to pay their interest expense, financial performance is impacted positively by 27.26%

Additionally, results from correlation indicate a strong positive and a significant association between cash holding and returns on assets ($r = 0.2175$; $p < 0.05$). This implies that holding more cash impacts financial performance positively. Therefore, the study can recommend that firms keep more cash as it positively affects financial performance.

Table 4.8: Correlation Matrix

	1	2	3	4	5	6	7	8
ROA	1.0000							
D/E	-0.4443*	1.0000						
D/C	-0.2496*	0.5960*	1.0000					
ICR	0.2726*	-0.0444	0.1223*	1.0000				
CH	0.2175*	-0.2847*	-0.2352*	0.0635	1.0000			
FA	-0.2101*	0.1141*	0.0907	-0.1909*	0.0116	1.0000		
FS	-0.1050*	0.1630*	0.3441*	-0.0600	-0.0856	-0.1065*	1.0000	
FG	0.2992*	-0.0920	0.0397	0.0827	0.0799	-0.1000*	0.2876*	1.0000

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

Source: Researcher, (2021)

4.4.1 Regression Analyses

Since the model tested for moderation, regression analysis was done on multiple models. Firstly, a regression model on the effects of control variables was done. This

was followed by assessing the impact of financial leverage ratios on the predicted variable. This was then followed by testing the effects of the moderator variable on ROA. Hierarchical regression was then done introducing interactions 1 to 3.

4.4.2 Testing the Effect of the Control Variables

From the regression model in the previous chapter, the study first presented the effects of the control variables (firm age, firm size and firm growth) on financial performance. The choice between the fixed and the random effect on analyzing the results was determined by the output of the Hausman test $\rho < 0.05$; thus, the choice for the fixed effect (appendix v). The table below 4.13 shows that firm age negatively affects financial performance of listed firms ($\beta = -0.0994$, $\rho < 0.05$). This indicates that older firms are more likely to record poor financial performance. The findings of this study are in line with those of Abubakar, Sulaiman & Huruna (2018). However, these findings are contrary to the results (Zahra zheng & Yu, 2018).

In line with the effect of firm age, firm size negatively affected the financial performance of listed firms ($\beta = -0.0146$, $\rho < 0.05$). This indicated that firms with vast amounts of assets are less likely to be profitable than those with fewer assets. These findings agree with studies by (Abbasi & Malik, 2015). The wasteful spending of assets can explain this by firms that are rich in assets. Additionally, at the disposal of more assets, it becomes difficult for managers to utilize these assets fully.

Contrary to the other two control variables, the growth rate of a firm indicates a positive and significant effect on financial performance of listed firms ($\beta = 0.1037$, $\rho < 0.05$). These findings agree with results from (Neheh & Van, 2017). these findings can be explained by the fact that a growing firm increases sales and assets. With

increased assets, they are better positioned to handle competition and venture into more profitable businesses.

Table 4.9: Fixed effect Regression results for control variables

Fixed-effects (within) regression	Number of obs	=	390
Group variable: id	Number of groups	=	39
R-sq: within = 0.1486	Obs per group: min	=	10
between = 0.1137	avg	=	10.0
overall = 0.1221	max	=	10
corr(u_i, Xb) = -0.1523	F(3,348)	=	20.25
	Prob > F	=	0.0000

ROA	Coef.	Std. Err.	t	P> t	95% Conf.	Interval
FA	-.0994323	.0307168	-3.24	0.001	-	-.1598462 .0390184
FS	-.0145602	.0034064	-	0.000	-	-.0212599 .0078605
FG	.1037345	.0208194	4.98	0.000	.0627867	.1446823
cons	.7058326	.1451365	4.86	0.000	.4203775	.9912876
sigma_u	.05861082					
sigma_e	.04561398					
Rho	.62279067					

F test that all u_i=0:	F(38, 348) =	14.79	Prob > F =	0.0000
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4.4.2 Testing the Direct Effect

Following model two in the previous chapter, the study examined the direct effects. Testing the direct effect involves scrutinizing the influence of the forecaster variables (debt to equity ratio, debt to capital ratio and interest coverage ratio) on financial performance (ROA). Results from the regression test for direct effects of financial leverage ratios on financial performance (ivs, DV) was determined by conducting a fixed effect regression and random effect model. The regression results of the direct effect for the fixed effect model are shown in Table 4.10.

4.4.3 Fixed Effect Model

Unlike the random effect, the fixed-effect model allows a varying intercept among firms in panel data analysis but still assumes a stable coefficient within the firms. Table 4.12 below highlights the fixed effect model regression results where findings indicate that the model explains 36.16% variation in financial performance of listed firms in Kenya. Debt to equity ratio significantly affected financial performance ($\beta = -0.007$, $\rho < 0.05$). Specifically, if debt to equity ratio changes by one unit with other variables held constant, financial performance negatively changes by 0.007 units. The results can be explained by the fact that interest paid is likely to direct firms into financial distress when a firm appears to be financed by lenders. Additionally, debt contracts are expensive to service hence reducing profitability.

Moreover, a significant negative effect of debt to capital ratio was found on financial performance. Results from the table 4.10 below indicate ($\beta = -0.105$, $\rho < 0.05$). This implies that a 1unit increase in debt to capital ratio leads to a -10.5% increase in financial performance. The findings agree with studies by San and Heng (2011). High debt levels explain negative relationships since firms are more risk-averse at high debt

to capital ratios since they operate under slim margins. This will make managers shy away from possible profitable business alternatives.

Unlike debt to Equity and debt to capital ratios, interest coverage ratio had a significant positive effect on financial performance. Results show ($\beta = 0.0038$, $p < 0.05$), implying that a unit variation of interest coverage ratio would result in a 0.0038 unit change in financial performance. With a high ability to meet debt obligations, firms are in no threat of bankruptcy and distress. They can execute their day-to-day requirements internally due to increased profitability and a high ability to settle debt obligations. The firm will be in a position to negotiate with other traders since they pose less risk. This is evident when financial institutions lend at lowered rates to clients likely to settle their obligations and charge high rates to potential loan defaulters.

Table 4.10: Results for fixed effect model on direct effect

Fixed-effects (within) regression	Number of obs	=	390
Group variable: id	Number of groups	=	39
R-sq: within = 0.3616	Obs per group: min	=	10
between = 0.1513	avg	=	10.0
overall = 0.2036	Max	=	10
	F(6,344)	=	32.47
corr(u_i, Xb) = -0.3434	Prob > F	=	0.0000

	ROA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
FA	-.0653412	.0272413	-2.40	0.017	-.1189217	-.0117607
FS	-.0069713	.0030969	-2.25	0.025	-.0130625	-.0008801
FG	.0670802	.0185264	3.62	0.000	.030641	.1035195
D/E	-.0070423	.0026947	-2.61	0.009	-.0123424	-.0017422
D/C	-.1052369	.0169553	-6.21	0.000	-.1385861	-.0718877
ICR	.0037894	.001026	3.69	0.000	.0017714	.0058074
_CONS	.487506	.1300517	3.75	0.000	.2317095	.7433026
Sigma_u	.06152404					
Sigma_e	.0397258					
Rho	.70575484 (fraction of variance due to u_i)					

F test that all u_i=0: F(38, 344) = 15.96 Prob > F = 0.0000

4.4.4 Results of the Hausman Test

The choice between fixed and random effects is determined based on the results of the Hausman test (Greene, 2008). The test establishes if unique errors are correlated to the regressor, which is supported by the alternative hypothesis. In choosing between using either fixed or random effect models, the results of the Hausman test were

observed. The table results show a p-value of 0.0205 <0.05; therefore fixed-effect model was used to analyze the direct effects.

Table 4.11: Hausman test results for direct effect

	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b- V_B)) S.E.
FA	-.0653412	-.0479976	-.0173436	.0178787
FS	-.0069713	-.0047035	-.0022679	.0014433
FG	.0670802	.0800369	-.0129567	.0012052
D/E	-.0070423	-.0098265	.0027841	.0008815
D/C	-.1052369	-.0734883	-.0317486	.0076281
ICR	.0037894	.0043238	-.0005344	.0002328
FA	-.0653412	-.0479976	-.0173436	.0178787

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\chi^2(6) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 14.97$$

$$\text{Prob}>\chi^2 = 0.0205$$

(V_b-V_B is not positive definite)

4.4.5 Testing the Effects of Moderator Variable

A variable is considered a moderator if there exists a relationship that can be moderated. From the previous model, there exists a significant relationship between (FL) and (FP). Additionally, the moderator variable must prove to affect the predicted variable significantly. A fixed-effect regression model was used to analyze the effect of the moderator on the predicted variable. From table 4.12 below, cash holding justifies a significant effect on ROA β 0.1992 p <0.05, indicating a significant

positive effect on ROA. A coefficient of 0.19 postulates that keeping other factors unchanged, a unit change in cash holding is likely to yield a change of ROA by 19% to the desired direction. These findings are in line with literature from KYNES (1963), who suggested that firms that hold more cash are in a position to capitalize on more profitable ventures.

Furthermore, La Rocca & Cambrea, (2019) indicate that firms are in a better position at high levels of cash holding to meet their unforeseen needs. These firms are also in a position to finance themselves internally, hence reducing the cost of acquiring external capital. Cash holding also lessens transaction costs, i.e. cost of liquidating asserts to fund their day to day activities.

Table 4.12: Testing the effects of moderator variable

Fixed-effects (within) regression	Number of obs	=	390
Group variable: id	Number of groups	=	39
R-sq: within = 0.3766	Obs per group: min	=	10
between = 0.1626	avg	=	10.0
overall = 0.2149	max	=	10
	F(7,343)	=	29.60
corr(u_i, Xb) = -0.3568	Prob > F	=	0.0000

	ROA	COEF.	Std. Err.	Z	P> Z	[95% Conf. Interval]
FA	-.0632411	.0269684	-2.35	0.020	-.1162854	-.0101968
FS	-.0071732	.0030655	-2.34	0.020	-.0132029	-.0011436
FG	.0631914	.018384	3.44	0.001	.0270319	.0993508
D/E	-.0070957	.0026668	-2.66	0.008	-.012341	-.0018505
DC	-.0998424	.016884	-5.91	0.000	-.1330517	-.0666331
ICR	.0036882	.001016	3.63	0.000	.0016899	.0056865
CH	.1991786	.0693238	2.87	0.004	.0628254	.3355318
_CONS	.4682172	.1288765	3.63	0.000	.2147294	.721705
sigma_u	.06154186					
sigma_e	.03931339					
Rho	71018951 (fraction of variance due to u_i)					

F test that all u_i=0: F(38, 343) = 16.33 Prob > F = 0.0000

4.4.6 Testing the effect of the first interaction

In the previous chapter, model four presented a linear regression model showing the first interaction between CH and D/E. Random effect analysis showed that cash holding significantly moderated the relationship between D/E and FP $\beta = 0.18834p < 0.05$. Table 4.13 shows a change in R-sq by 0.0782 and a coefficient change proves

full moderation of CH on predicting variable. The output from the interaction indicates a positive change of 0.18834 units of ROA in the event of a unit change in the interaction term.

Table 4.13: Testing the effect of the first interaction

Random-effects GLS regression	Number of obs	=	390
Group variable: id	Number of groups	=	39
R-sq: within = 0.4014	Obs per group: min	=	10
between = 0.2408	avg	=	10.0
overall = 0.2872	max	=	10
	Wald chi2(8)	=	233.97
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

	ROA	COEF.	Std. Err.	z	P> z	[95% Conf. Interval]
FA	-.0438105	.0203814	-2.15	0.032	-.0837573	-.0038637
FS	-.0062476	.0026909	-2.32	0.020	-.0115216	-.0009735
FG	.0735748	.0178653	4.12	0.000	.0385596	.1085901
D/E	-.0082611	.0024841	-3.33	0.001	-.0131299	-.0033923
D/C	-.0661883	.014917	-4.44	0.000	-.0954251	-.0369514
ICR	.0037344	.0009717	3.84	0.000	.00183	.0056389
CH	.2365216	.0658025	3.59	0.000	.1075511	.3654921
DE*CH	.1883912	.0438015	4.30	0.000	.1025419	.2742406
_CONS	.353047	.1010939	3.49	0.000	.1549067	.5511873
sigma_u	04823513					
sigma_e	.03836058					
rho	61256672 (fraction of variance due to u i)					

4.4.7 Testing the effects of the second interaction

In the previous chapter, model five presented a linear regression model showing the first interaction between CH and D/C. Random effect analysis showed that cash holding significantly moderated the relationship between D/C and FP $\beta = 0.1594p < 0.05$. Table 4.14 shows a change in R-sq by 0.0018 from (0.2408 to 0.2426), and a coefficient change GLS proves full moderating of CH on predicting variable. Upon interaction, a coefficient $\beta = 0.1594p < 0.05$ signifies a unit change in the interaction term results in a change in ROA by 0.1594 units.

Table 4.14: Testing the effects of the second interaction

Random-effects GLS regression	Number of obs	=	390
Group variable: id	Number of groups	=	39
R-sq: within = 0.4152	Obs per group: min	=	10
between = 0.2426	avg	=	10.0
overall = 0.2920	max	=	10
	Wald chi2(9)	=	245.67
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	

	ROA	Coef.	Std. err.	Z	p> z	[95% Conf. Interval]
FA	-.039427	.0202941	-1.94	0.052	-.0792027	-.0792027
FS	-.0059856	.0026707	-2.24	0.025	-.0112201	-.0112201
FG	.071653	.0177209	4.04	0.000	.0369207	.0369207
D/E	-.0086456	.0024672	-3.50	0.000	-.0134813	-.0134813
DC	-.067788	.014804	-4.58	0.000	-.0968034	-.0968034
ICR	.0031706	.0009847	3.22	0.001	.0012406	.0012406
CH	.2337301	.0652474	3.58	0.000	.1058476	.1058476
DE*CH	.1783855	.0435778	4.09	0.000	.0929745	.0929745
DC*CH	.1593606	.0580166	2.75	0.006	.0456502	.0456502
_CONS	.3323928	.1006183	3.30	0.001	.1351846	.1351846
sigma_u	.04789918					
sigma_e	.03795243					
Rho	.61432515 (fraction of variance due to u_i)					

4.4.8 Testing the complete effect of moderation

The Hausman test was conducted to test for the full interactions, and the results favored the random effect model. Significant moderation was recorded from the regression model with both changes in R-sq and coefficients from 24.08% to 24.41%. This indicates that upon interactions, the predicting power of the model significantly rises. The model explained this by the high prediction power of 24.41% in the event of interaction between interest coverage ratio and cash holding ROA is impacted negatively at -0.04848 $p < 0.5$

Table 4.15: Testing the complete effect of moderation

Random-effects GLS regression	Number of obs	=	10
Group variable: id	Number of groups	=	10.0
R-sq: within = 0.4261	Obs per group: min	=	10
between = 0.2441	avg	=	39
overall = 0.2962	max	=	390
	Wald chi2(10)	=	0.0000
Corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

	ROA	COEF.	Std. Err.	z	P> z	[95% Conf. Interval]
FA	-.038299	.020251	-1.89	0.059	-.077992	.0013924
FS	-.007264	.0027023	-2.69	0.007	-.012561	-.0019676
FG	.0709039	.0175781	4.03	0.000	.0364515	.1053563
DE	-.008291	.0024534	-3.38	0.001	-.013099	-.0034822
D/C	-.061633	.0149713	-4.12	0.000	-.090977	-.0322906
ICR	.0033082	.0009792	3.38	0.001	.001389	.0052274
CH	.2267038	.0648482	3.50	0.000	.0996037	.353804
DE*CH	.1967983	.043883	4.48	0.000	.1107892	.2828074
DC*CH	.1491889	.0576842	2.59	0.010	.0361299	.2622479
ICR*CH	-.048486	.0194543	-2.49	0.013	-.086616	-.0103567
_CONS	.3459054	.100397	3.45	0.001	.1491309	.5426799
Sigma_u	04827904					
Sigma_e	03765051					
Rho	62182505 (fraction of variance due to u_i)					

4.5 Testing of Hypotheses

Hausman test was conducted to determine the choice between fixed and random effect (Appendix I). A result of $\text{prob} > \chi^2 = 0.05$ led to the rejection of the null hypothesis. Therefore, fixed effect while $p > 0.05$ led to the choice of random effect. According to Kohler & Kreuter (2019), fixedom effect model.

H01: Debt to equity has no significant effect on financial performance of listed in Kenya

The hypothesis debt to equity ratio has no significant effect on financial performance of listed firms in Kenya was rejected. Results from table 4.10 indicate ($\beta = -0.00704, < 0.05$), therefore a significant negative effect. There is a negative association between debt-to-equity ratio and financial performance from the coefficient. The study's finding is in line with (Velnampy & Niresh, 2012) studies. With the negative finding, the study contradicts with results from

Dhakar, Sarker & Uddin (2019) who found a positive relationship between debt to equity ratio and financial performance of firms. The negative association between debt-to-equity ratio and financial performance of firms can be explained by debt obligations such as high-interest costs, which reduces the profitability of firms. Also, high debt to equity ratio makes it hard for a firm to raise additional capital at times of need. At this situations, firms are likely to miss out on more appealing business opportunities.

H02: Debt to capital ratio has no significant effect on financial performance of listed firms in Kenya

The second hypothesis was rejected based on findings from the output generated from the fixed-effect analysis of the econometric model. The results show a significant negative effect of debt to capital ratio on financial performance of listed firms ($\beta = -0.1052, P < 0.05$). Studies from San, Heng (2011), Shahen, & Malik (2012) and Saeed, Gull & Rasheed (2013) are consistent with these findings. This, therefore, implies that higher debt to capital levels leads to adverse effects on financial performance.

H03: Interest coverage ratio does not significantly affect financial performance of listed firms in Kenya

Informed by ($\beta_2 = 0.0038, P < 0.05$), the study indicates a significant positive effect of interest coverage ratio on the financial performance of listed firms in Kenya, rejecting the null hypothesis. More so, these findings are in line with the result from studies by Kithandi & Katua (2019), who support the same, contrary this finding contradict the findings of Zulaika (2016); Ji (2019), who record a negative effect of interest coverage ratio on financial performance of firms. The results of this study support that when firms have high abilities to meet their debt obligations, they are better positioned to invest positively and utilize borrowed funds, unlike when margins are very low. Additionally, high-interest coverage ratios indicate that firms are less likely to experience financial distress and therefore managers are at ease to make profitable investment decisions.

H04a: cash holding does not significantly moderate the relationship between debt-to-equity ratio and financial performance of listed firms in Kenya.

Table 4.13 revealed that cash holding significantly moderates the relationship between the debt-to-equity ratio and financial performance of listed firms in Kenya ($\beta=0.1884$; $p<0.05$), leading to the rejection of the null hypothesis. The interaction reduces the negative effects of debt to equity showing a buffering effect on the relationship between debt-to-equity ratio and financial performance. P -values of ($p<0.05$) informed the rejection of the null hypothesis indicating that keeping high levels of cash holding reduces the adverse effects of debt-to-equity ratio on financial performance. This can be explained by the fact that the burden of dividend payment is lessened at higher cash holding levels, and conflicts between lenders and insider traders are reduced. Additionally, high cash holding levels prove the availability of internal finance, which enables firms to capitalize on investment opportunities. Contrary, lower cash holding levels indicate a more adverse effect on financial performance (ROA). These findings are likely to explain the more interest burden by debt contracts on the firm.

H04b: cash holding does not significantly moderate the relationship between debt to capital ratio and financial performance of listed firms in Kenya.

Results also indicated a significant moderating effect of cash holdings on the relationship between debt to capital ratio and financial ($\beta= 0.1594$; $p <0.05$). This suggests that cash holding mitigates the adverse effect of debt to capital ratio on financial performance. This result concurs with literature from Kaplan (1998) on the advantages of keeping enough cash at disposal since it lessens financial distress

among firms. Additionally, with lower leverage values, agency costs of debt are reduced, and also firms pay less on debt contracts which increases their profitability.

H04c: Cash holding does not significantly moderate the relationship between interest coverage ratio and financial performance of listed firms in Kenya.

The relationship between interest coverage ratio and financial performance is significantly moderated by cash holding. From the final regression model (6) in table 4.15, interaction results showed ($\beta=-0.04848$; $\rho<0.05$), therefore the rejection of the null hypothesis. This implied that this interaction affected financial performance negatively, such that as the level of interaction increases by a unit, the effect is a decline in financial performance by -0.04848 . The interaction between interest coverage ratio and cash holding led to a change in the coefficient, implying that its evil exceeds the benefits of interest coverage at increased levels of cash holding. This is explained from the thoughts of agency theory, where firm managers may spend cash at their disposal to pursue their goals increasing the agency cost of equity.

Table 4.16: Summary Results of Hypotheses Tests

Hypotheses	B	P<5%	Decision
H ₀₁ :Debt to equity ratio has no significant effect on financial performance of listed firms in Kenya	-0.00704	0.009	Rejected
H ₀₂ :Debt to capital ratio has no significant effect on financial performance of listed firms in Kenya	-0.1052	0.000	Rejected
H ₀₃ :Interest coverage ratio has no significant effect on financial performance of listed firms in Kenya	0.0038	0.001	Rejected
H ₀₄ :Cash holding does not significantly moderate the relationship between financial leverage ratios and financial performance of listed firms in Kenya	0.1992	0.001	Rejected
H _{04a} :Cash holding does not significantly moderate the relationship between debt to equity ratio and financial performance of listed firms in Kenya	0.1884	0.001	Rejected
H _{04b} :Cash holding does not significantly moderate the relationship between interest coverage ratio and financial performance of listed firms in Kenya	0.1594	0.004	Rejected
H _{04c} :Cash holding does not significantly moderate the relationship between interest coverage ratio and financial performance of listed firms in Kenya	-0.04848	0.004	Rejected

4.6 Mod Graphs

The study used mod graphs to show the effects of predictor variables on the dependent variable to demonstrate a detailed view of moderation. Mod graphs show plots at average cash holding levels, one standard deviation above and below the average.

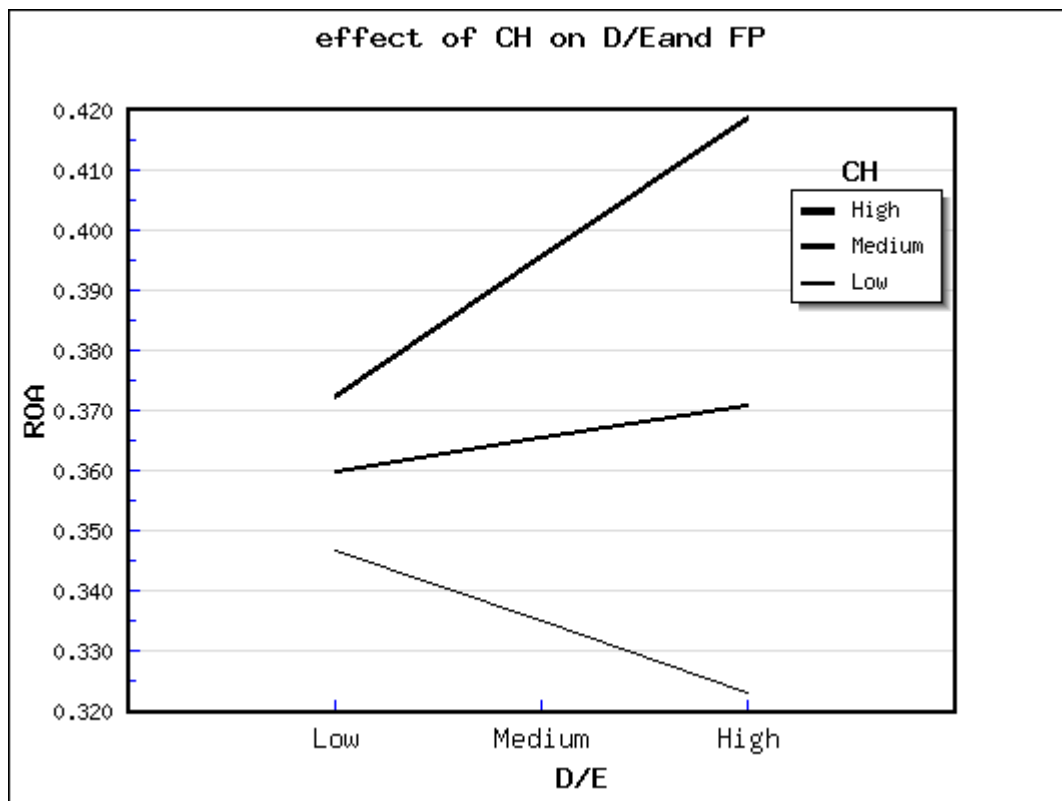


Figure 4.1: Mod graph showing the first interaction

From the above fig 4.1, high cash holding and debt to equity levels yield the highest ROA. Contrary to lower cash holding levels and high levels of debt-to-equity ratio, financial performance is at the lowest. This indicates that increasing the cash levels reduces the negative effect of the debt-to-equity ratio on financial performance. The buffering effect can be explained by the role cash holding plays in mitigating the adverse impact of debt at higher cases of bankruptcy and financial distress associated with over-dependence on leverage. This is a scenario more common in lower chances of cash holding. Additionally, with high cash levels, holding firms are in a better position to service their loans. This makes borrowed funds cheaper, and with better managerial skills, profitable investments are made, leading to improved financial performance.

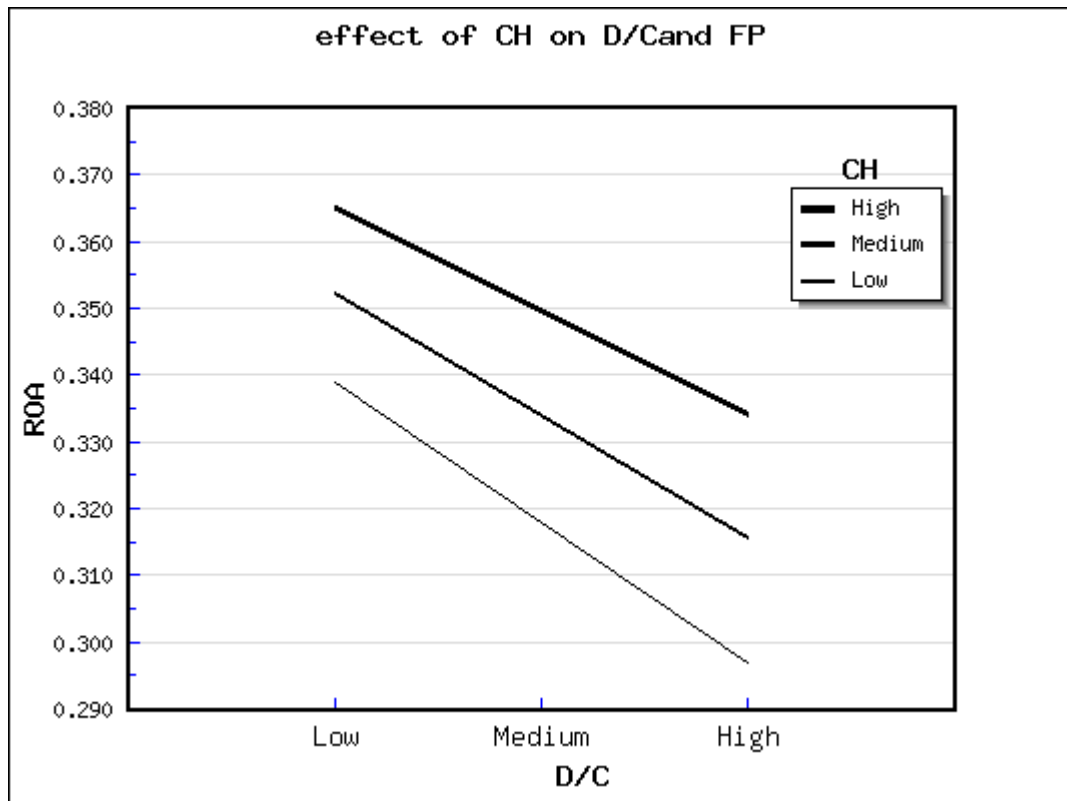


Figure 4.2: Modgraph for the second interaction

A buffering moderation is evident in the effect of debt to capital ratio and financial performance of listed firms in Kenya. The graph shows that high cash holding and low debt to capital ratios yield the most probable results. Maintaining high cash holding while increasing debt to capital ratio reduces ROA. At this point, debt obligations are maximum, and much of the firm's precedes are used to service debt covenants. Although high levels of cash holding do not change the direction of the effects between D/C and FP, its role in reducing the adverse effects of debt to capital ratio cannot be ignored. Therefore, managers are urged to maintain high levels of cash holding at all times to better their performance.

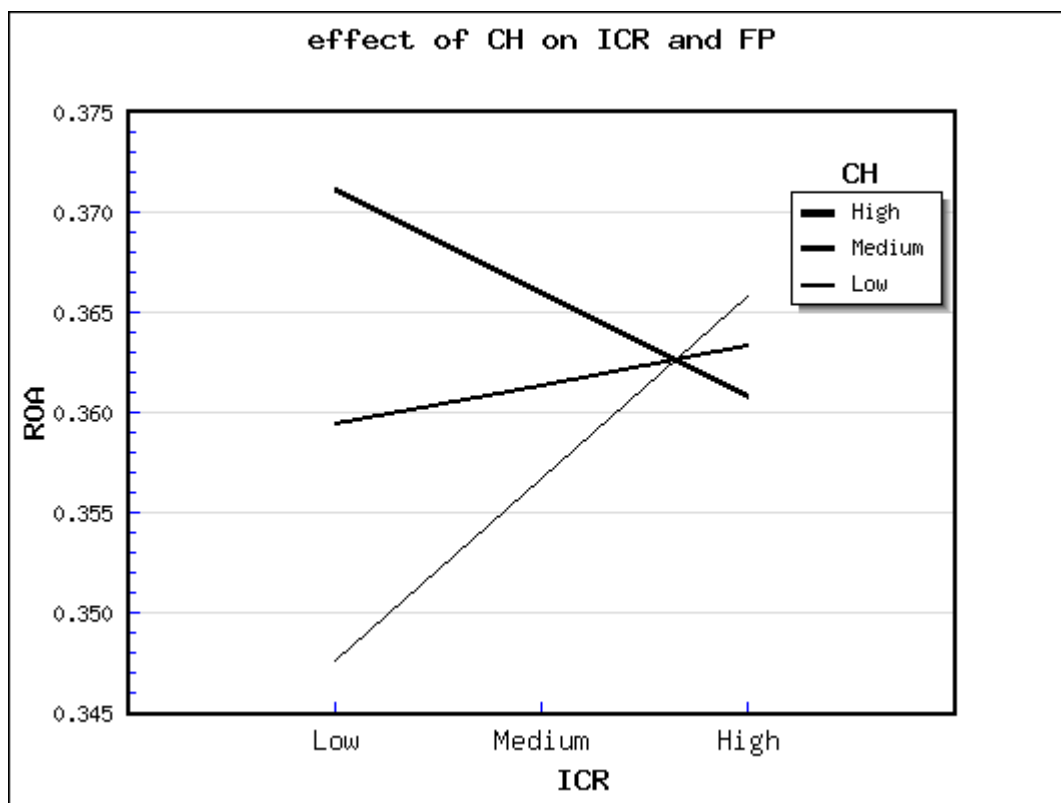


Figure 4.3: Mod graph showing the third interaction

From the above mod graph, the effects of maintaining high cash holding on interest coverage ratio and financial performance are positive. Additionally, keeping higher levels of cash holding at lower levels of ICR yields better results as compared to keeping low levels of cash holding at low ICR. From figure 4.3 above, increasing levels of ICR at medium and low levels of cash holding improves financial performance. At high levels of cash holding, however, higher levels of interest coverage ratio ROA declines with increased ICR. Levels of ROA decrease at continuous increased ICR to an equilibrium point where the benefits of high, low, and average cash holding are equal.

At points above the equilibrium, holding high cash levels diminishes the benefits of high levels of ICR. However, keeping minimum cash proves advantageous as high levels of ICR and CH improve financial performance. This antagonistic effect informs

various stakeholders that an optimal level of cash holding exists. Therefore, decision makers need to understand that above these limits, the good of holding cash will be more hazardous, resulting in declining financial performance.

This finding supports the thoughts of the trade-off theory that there exists a balance or an optimal level of sources of finance. Like the tax shield benefits on borrowings, cash holding is attached to some benefits. However, when certain levels are exceeded they serve otherwise. Finally, the thinking of agency theory is confirmed since, at higher abilities to services obligations, managers tend to utilize excess cash for their good at the owners' expense. This increases agency costs resulting in poor financial performance.

4.7 Hierarchical Regression Model

The study tested the hypothesis in a hierarchical regression model such that the variables under study were introduced into the regression model in successive blocks. Based on the nature of the study, six models were presented, with the first showing the effects of control variables (firm age, firm size, and firm growth).model two constituted the control variables in addition with the independent variables of the study (debt to equity, debt to capital and interest coverage ratio). Additionally, model three introduced the moderator variable cash holding on the previous model two stated above. Moderation was tested by additionally interacting the moderator variable with the independent variable, resulting in the creation of variables (debt to equity ratio and cash ratio $de*ch$ debt to capital and cash ratio $dc*ch$ and interest coverage ratio and cash ratio $icr*ch$). The created variables interacted hierarchically as presented by models four to six, where moderation was expected upon the significance of the interaction term and the outcome (Barron & Kenny, 1986).

4.8 Regression Models

Models 1

$$ROA(it) = 0.705 + -0.0994FA(it) + -0.0146FS(it) + 0.104FG(it) + \varepsilon(it) \dots\dots Model 1$$

Model 2

$$ROA(it) = 0.487 + -0.0653FA(it) + -0.0069FS(it) + 0.0671FG(it) + -0.00704D/E(it) + -0.1052D/C(it) + 0.0038CR(it) + \varepsilon(it) \dots\dots Model 2$$

Model 3

$$ROA(it) = 0.4682 + -0.0632FA(it) + -0.0072FS(it) + 0.0632FG(it) + -0.0071D/E(it) + -0.0998D/C(it) + 0.00369 ICR(it) + 0.1992CH(it) + \varepsilon(it) \dots\dots Model (3)$$

Model 4

$$ROA(it) = 0.3531 + -0.0438FA(it) + -0.00625FS(it) + 0.0737FG(it) + -0.00826D/E(it) + -0.0662D/C(it) + 0.00373CR(it) + 0.2365CH(it) + 0.18834d/e(it)*ch(it) + \varepsilon(it) \dots\dots Model (4)$$

Model 5

$$ROA(it) = 0.3324 + -0.03943FA(it) + -0.00599FS(it) + 0.0716FG(it) + -0.0086D/E(it) + -0.0678D/C(it) + 0.00317CR(it) + 0.2337CH(it) + 0.1784d/e(it)*ch(it) + 0.1594d/c(it)*ch(it) + \varepsilon(it) \dots\dots Model (5)$$

Model 6

$$ROA(it) = 0.3459 + -0.0383FA(it) + -0.00726FS(it) + 0.0709FG(it) + -0.0083D/E(it) + -0.0616D/C(it) + 0.0033ICR(it) + 0.2267CH(it) + 0.1968d/e(it)*ch(it) + 0.1492d/c(it)*ch(it) + -0.0448icr*ch(it) + \varepsilon(it) \dots\dots Model (6)$$

Table 4. 17: Hierarchical Regression Model

Tscore	Model 1 Coef. (Se)	Model 2 Coef. (Se)	Model 3 Coef. (Se)	Model 4 Coef. (Se)	Model 5 Coef. (Se)	Model 6 Coef. (Se)
_cons	0.705(0.1414)**	0.487 (0.13)**	0.4682 (0.129)**	0.3531 (0.101)**	0.3324 (0.0101)**	0.346 (0.101)**
FA	-0.0994(0.031)**	-0.065(0.027)**	-0.063 (0.027)**	-0.0438 (0.0204)**	-0.0394 (0.0203)	-0.038 (0.0202)
FS	-0.015(0.003)**	-0.007 (0.003)**	-0.007 (0.003)	-0.00625 (0.003)**	-0.006 (0.0027)**	-0.0073 (0.003)**
FG	0.104 (0.021)**	0.067 (0.019)**	0.063 (0.019)**	0.0737 (0.0179)**	0.0716 (0.0172)**	0.0709 (0.018)**
D/E		-0.007 (0.003)**	-0.007 (0.003)**	-0.0083 (0.0025)**	-0.0086 (0.0025)**	-0.008 (0.0024)**
D/C		-0.105 (0.017)**	-0.10 (0.0169)**	-0.0662 (0.1492)**	-0.0678 (0.0148)**	-0.062 (0.015)**
ICR		0.004 (0.001)**	0.004 (0.001)**	0.00373 (0.001)**	0.00317 (0.001)**	0.0033 (0.001)**
CH			0.196 (0.069)**	0.2365 (0.0658)**	0.2337 (0.065)**	0.2267 (0.065)**
DE*CH				0.18834 (0.0438)**	0.1784 (0.0436)**	0.1967 (0.044)**
DC*CH					0.1594 (0.058)**	0.1492 (0.058)**
ICR*CH						-0.048 (0.0194)**
<i>R-sq:</i>	0.1486	0.3616	0.3766	0.2408	0.2426	0.2441
<i>R-sqΔ</i>	0	0.213	0.015	0.0782	0.0018	0.0015
<i>F- value</i>	20.25	32.47	29.60	233.97	245.67	255.85
<i>Prob > f</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
<i>sigma_u</i>	0.05861	0.06152	0.06154	0.4824	0.04789	0.04828
<i>sigma_e</i>	0.04561	0.03973	0.03931	0.03836	0.03795	0.03765
<i>Rho</i>	0.6228	0.7058	0.7102	0.6126	0.61433	0.6218
Hausman						
chi2	224.22	14.97	14.81	14.23	16.09	16.24
Prob>chi2	0.0000	0.0205	0.0385	0.0759	0.0650	0.0929

p<.05

Standard error

4.9 Chapter Summary

This chapter informs diagnostic tests, descriptive statistics, correlation analysis, regression analysis, and moderation results. The Levin- Lin Chu test was applied to check for unit roots on panel data in the study. The null hypothesis was rejected at a significance level of 5% based on the test results in table 4.5, indicating the absence of unit roots in the data. Normality assumption was tested by the Shapiro Wilk tests, where the assumption for normality was held. The Variance Inflation Factor test tested correlations among the independent variables. Results in Table 4.3 indicate a VIF of less than 10, which informed that the data collected do not suffer multicollinearity. The assumption of Heteroskedasticity in data was tested by Breusch-Pagan/Cook, where results confirmed that the variance of the error term is similar across values of the independent variables. The Autocorrelation test was done using the Wooldridge test, where results eliminate claims of serial autocorrelation. Control variable's effect on the predicted variable proved mixed results, age, and size of the firm had a negative impact on financial performance. In contrast, growth of a firm positively impacted financial performance. Results from the fixed effect regression model showed that at 5% significance level, debt to equity and debt to capital ratios had a significant negative effect on financial performance. Contrary, interest coverage ratio had a positive effect on financial performance of listed firms in Kenya. Finally, Results from Table 4.15 indicates that cash holding significantly moderated the relationship between financial leverage and financial performance.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the previous findings and presents the conclusion, recommendations, and propositions for further research.

5.2 Summary of the Findings

The study examined whether cash holding moderates the relationship between financial leverage and financial performance. The study's independent variables were debt to equity ratio, debt to capital ratio, and interest coverage ratio. The study was done on all listed firms in Kenya for a period between 2011 and 2020. The study found that financial leverage ratios significantly affect the financial performance of listed firms in Kenya. Additionally, the study found a moderating role of cash holding on the relationship between financial leverage and financial performance of listed firms in Kenya.

5.2.1 Effect of Debt to Equity ratio on financial on performance of listed firms

The study's first objective was to analyze the effects of debt to equity ratio on the financial performance of listed firms in Kenya. Results from fixed effect regression showed that debt to equity ratio had a significant negative effect on financial performance ($\beta = -0.00704 < 0.05$). From the results above, a unit change in debt to equity ratio affects financial performance negatively by 0.00704 additionally, results from correlation analysis showed a strong negative association between financial performance and debt to equity ratio ($r = -0.44; p < 0.05$). The results suggested that firms with high debt to equity ratios are likely to experience poor financial performance. The study's finding is in agreement with Velnampy, & Niresh (2012) but are in contrast with those by Shehla, Atiya and Haleema (2012) ; Rahman, Sarker

& Uddin (2019). However, some studies found no significant effect Basit & Hassan (2017), which explains that firms in different economic regions perform differently on financial leverage.

This, therefore, implies that firms should be vigilant in the usage of debt since higher levels of debt-to-equity ratios imply that firms are at high risk due to additional debt contracts that reduce firms' profits. Firms are therefore expected to utilize internal equity compared to debt as it is likely to improve financial performance.

5.2.2 Effect of Debt to capital ratio on financial performance of listed firms

Debt to capital ratio denotes debt utilized by a firm compared to capital held by the firm. Results from correlation analysis showed that debt to capital ratio has a significant negative association with financial performance ($r=-0.2496 <0.05$). Additionally, the fixed effect regression analysis results indicated a significant negative effect on financial performance ($\beta =- 0.1052; \rho<0.05$). The results infer that debt to capital ratio negatively affects financial performance. These findings are in agreement with studies by San and Heng (2011), Sadia Shahan (2012), Gull and Rasheed (2013), who found a negative and significant effect on debt to capital ratio on financial performance. Additionally, the significant negative correlation between debt to capital ratio and cash holding agrees with the pecking order theory ($r=-0.2352 <0.05$) where firms that utilize debt capital have utilized fully utilized internal sources of finance.

5.2.3 Effect of interest coverage ratio on financial performance of listed firms

Interest coverage ratio signifies the ability of a firm to meet its debt obligations at a given time. Studies have measured this ratio with respect to interest expense as a percentage of earnings before interest and tax. From the results, this ratio significantly

affects financial performance in a positive way. The study findings indicate that a unit change in interests' coverage ratio explains a 0.0038 changes in units of (ROA) financial performance ($\beta=0.0038$; $p<0.05$). Additionally, correlation results ($r=0.2726<0.05$) explains a significant association between interest coverage ratio and financial performance. This implies that firms with high ability to pay their debt contracts are likely to record improved financial performance. These findings are in line with those of Kithandi & Katua, (2019) and contrast with studies by Ji (2019) who found no significance in interest coverage ratio on profitability of firms.

5.2.4 Moderating Effect of cash holding

Cash holding moderated the relationship between financial leverage and financial performance. Results further indicate a buffering effect of cash holding on the relationship between debt to equity ratio and financial performance. The adverse impact of debt to equity on financial performance is reduced, although the effect is not changed. According to studies by Santioni *et al.*, (2017) and La Porta *et al.*, (2000), findings agree that cash holding reduces the adverse effects of leverage and impacts financial performance positively.

Further, the results showed a significant moderating effect of cash holding on the relationship between debt to capital ratio and financial performance. The study further indicates a buffering effect of cash holding on the relationship between financial leverage and financial performance. This explained that by increasing cash holding, the adverse effects of debt to capital ratio on financial performance are reduced. This is in line with other studies that holding a significant amount of cash lessens agency cost of debt (Graham, 2003; Ginglinger & Saddington 2008; Soltani & Ravanmehr, 2011).

Finally, cash holding significantly moderated the relationship between interest coverage ratio and financial performance. Results indicate that increasing cash levels when firms have a high ability to meet interest obligations negatively impacts financial performance. Findings from the fixed effect regression model further suggest that cash holding reduces the direct effect of interest coverage ratio on financial performance.

Additionally, figure 4.3 shows that at higher cash holding levels, the effects of interest coverage ratio are changing to become negative compared to both low and average levels of cash holding. This is explained by the propositions of agency cost theory, where managers of firms with high abilities to service their obligations using generated proceeds tend to utilize available cash held to satisfy their own objectives. Furthermore, the tradeoffs indicate that the marginal cost of a source of finance should equal marginal cost at equilibrium. The findings of this study are in line with these assertions as above equilibrium a diminishing effect is recorded as evident in fig 4.3.

5.3 Conclusion

Over the past years, there has been a constant rise in discussions of how financial leverage affects financial performance. Although studies have been widely done, inconsistent and mixed findings are recorded. Theories and previous literature have highlighted the significance of cash holding on financial performance. The extensive literature on cash holding also indicates that cash holding affects leverage levels of firms. In line with literature on the pecking order theory, firms that utilize high debt levels are expected to have utilized all available sources of internal sources of funds.

Moreover, it is prudent to weigh on an additional source of finance as they may impact performance negatively at points where equilibrium is exceeded. Results of the study support the view of the pecking order theory that debt and cash holding negatively correlate. Additionally, concerns should not only be put on financial leverage but also cash holding. This is supported by the findings in the test on hypothesis 4c, where excessive cash holding antagonizes the positive effect of high abilities to settle debt expenses.

5.4 Recommendations

The study provides a recommendation to managers, policymakers, and scholars exploring the effects of capital structure decisions on financial performance among firms globally.

5.4.1 Managerial Contribution

Based on the study's findings, decision-makers are informed in different ways. First, managers of listed firms should consider utilizing low debt levels to enhance financial performance. This will mean that managers should make decisions that support the utilization of equity sources of finance compared to externally borrowed funds. This entails that firms maintain a capital structure where equity capital exceeds debt. Additionally, firms that use debt should ensure that they are at higher levels to pay debt contracts, positively affecting financial performance.

Secondly, decision-makers of firms should consider holding higher levels of cash as it significantly affects financial performance positively. In line with previous studies by La Rocca & Cambrea (2019) and Welsberg (2004), keeping high cash levels enables firms to capitalize on more profitable ventures improving their financial performance. However, holding cash should be done with caution as more than enough cash results

in negative impacts, especially if the firms are profitable or self-sufficient. At high levels, debt of cash holding servers to improve financial performance. On the contrary, with higher abilities to settle debt, financial performance declines with increased cash holding.

5.4.2 Policy Contribution

The study findings recommend that policymakers should revisit their policies on debt. Firstly usage of debt negatively affects financial performance, which is in line with the pecking order theory. Policymakers are expected to develop policies that support the utilization of internal capital over external funds. Secondly, the findings of this study suggest that firms should maintain high levels of cash as it results in improved financial performance. Additionally, it is essential for policymakers of firms with high debt levels to consider holding vast amounts of cash as it reduces the adverse effects of financial leverage on financial performance of listed firms. It is also crucial for policymakers to develop equilibrium levels of cash holding since at points above equilibrium, the positive effects turn negative. This, therefore, urges policymakers to keep low levels of cash at high profits margin and keep high cash levels at low profits margin.

5.4.3 Theoretical Contribution

The study examined the moderating effect of cash holding on the relationship between financial leverage and financial performance from 2011 to 2020. Therefore, the findings of this study rationalize how financial leverage ratios could determine levels of financial performance. In addition, this study advances existing literature by introducing cash holding and understanding how it moderates the relationship above.

Secondly, this study's findings agree with the pecking order theory as debt to capital ratio indicates a significant negative relationship with cash holding. Additionally, the pecking order theory identifies debt capital as more expensive than debt capital. This is in agreement with the findings of this study, as higher levels of debt to capital ratio and debt to capital ratio have yielded poor financial performance. Cash holding has proved to improve financial performance. It can be said to be the most preferred source of finance that firms should embrace.

The study blends in with the agency theory propositions that under the high agency cost of debt where financial performance declines due to underinvestment problems. This is where firms believe that they stand to benefit less than debt holders at times of profits. Furthermore, the agency theory on agency cost of equity states that when firms are in a better position to settle debt obligations, managers will be less motivated to venture into profitable ventures and, instead, pursue their self-interest. This, therefore, implies that policymakers should consider using debt contracts to curb the inefficiencies of managers at points where firms have higher abilities to settle a debt.

Finally, the study findings agree with literature on the trade-off theory that managers of firms are expected to weigh the benefits and costs of using different financing. Results indicate that firms that are excessively levered record poor financial performance.

5.5 Limitations of the study and Further Research Recommendations

The study was only done on listed firms in Kenya; hence, upcoming studies could find a need to incorporate firms from other countries in the region to provide a

broader conclusion on the moderating role of cash holding on the relationship between financial leverage and financial performance.

Additionally, literature points out other financial performance measures such as returns on equity (ROE) and Tobin's returns on investment (ROI). Therefore, this creates interest for further studies to find if they will yield the same results or contradict the findings of the study.

Extensive literature also provides that firms in different sectors of the economy are affected by leverage in different ways. More so, firms in various sectors of the economy have different cash needs, while some are required by their regulatory authorities to maintain set levels of cash. It will therefore be interesting to see if the study results hold in different sectors studied as single units of analysis. Finally, it would be interesting to test the effect of cash holding using other models such as the langrage multiplier to find if the same result holds.

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APPENDICES

Appendix I: Hausman tests

---- Coefficients ----

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
FA	-.0994323	-.0779912	-.021441	.0208472
FS	-.0145602	-.0126963	-.0018639	.0017132
FG	.1037345	.115925	-.0121905	.0035556

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \chi^2(3) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 224.22 \end{aligned}$$

$$\text{Prob}>\chi^2 = 0.0000$$

Hausman test for direct effects

---- Coefficients ----

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
FA	-.0653412	-.0479976	-.0173436	.0178787
FS	-.0069713	-.0047035	-.0022679	.0014433
\FG	.0670802	.0800369	-.0129567	.0012052
D/E	-.0070423	-.0098265	.0027841	.0008815
D/C	-.1052369	-.0734883	-.0317486	.0076281
ICR	.0037894	.0043238	-.0005344	.0002328

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \chi^2(6) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 14.97 \end{aligned}$$

$$\text{Prob}>\chi^2 = 0.0205$$

(V_b-V_B is not positive definite)

Hausman test for model 3

(V_b-V_B is not positive definite)

	fe	re	Difference	S.E.
FA	-.0632411	-.0484967	-.0147444	.0174713
FS	-.0071732	-.0048921	-.0022811	.001406
FG	.0631914	.0755909	-.0123995	.0013591
D/E	-.0070957	-.0095601	.0024644	.0008576
D/C	-.0998424	-.0697199	-.0301225	.0074551
ICR	.0036882	.00421	-.0005218	.0002289
CH	.1991786	.1858815	.0132971	.0203776

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic
 $\chi^2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 14.81
 Prob>chi2 = 0.0385
 (V_b-V_B is not positive definite)

Hausman test for model 4

---- Coefficients ----

	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
FA	-.0663174	-.0438105	-.0225068	.0166609
FS	-.0083145	-.0062476	-.002067	.0013334
FG	.061665	.0735748	-.0119099	.0016571
D/E	-.0059924	-.0082611	.0022687	.0008166
D/C	-.0938046	-.0661883	-.0276163	.0071344
ICR	.0032581	.0037344	-.0004763	.0002208
CH	.2413991	.2365216	.0048775	.01853
DE*CH	.1935044	.1883912	.0051131	.011536

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic
 $\chi^2(8) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 14.23
 Prob>chi2 = 0.0759
 (V_b-V_B is not positive definite)

Hausman test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
FA	-.058652	.039427	-.019225	.0165368
FS	-.008192	.005986	-.002206	.0013027
FG	.059868	.071653	-.011785	.0012056
D/E	-.006426	.008646	.0022194	.0007927
D/C	-.097042	.067788	-.029254	.0070512
ICR	.0026081	.0031706	-.000563	.0002293
CH	.23868	.2337301	.0049499	.0178346
DE*CH	.1814998	.1783855	.0031143	.011241
DC*CH	.1670729	.1593606	.0077123	.

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\chi^2(9) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 16.09$$

$$\text{Prob}>\chi^2 = 0.0650$$

(V_b-V_B is not positive definite)

Hausman test

---- Coefficients ----

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
FA	-.0543701	-.0382998	-.0160703	.016345
FS	-.0098091	-.007264	-.0025451	.001338
FG	.0595645	.0709039	-.0113394	.001229
D/E	-.0061241	-.0082908	.0021667	.0007772
D/C	-.089807	-.0616338	-.0281732	.0069672
ICR	.0027232	.0033082	-.000585	.0002218
CH	.2403898	.2267038	.0136859	.0172612
DE*CH	.1981649	.1967983	.0013666	.0105053
DC*CH	.1572772	.1491889	.0080883	.
ICR*CH	-.050433	-.0484865	-.0019465	.0036581

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\chi^2(10) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 16.24$$

$$\text{Prob}>\chi^2 = 0.0929$$

(V_b-V_B is not positive definite)

Appendix II: Target Population: Firms Listed In Kenya

I: Nairobi Security Exchange

No.	Company	Sector	Year listed
1	Eaagads Limited	Agriculture	1972
2	Kakuzi Limited	Agriculture	1951
3	Kapchorua Tea Factory Limited	Agriculture	1972
4	Limuru Tea Kenya Limited	Agriculture	1967
5	Sasini Limited	Agriculture	1965
6	Williamson Tea Kenya Limited	Agriculture	1972
7	Rea Vipingo Plantations Limited	Agriculture	1998
8	Car and General (Kenya) Limited	Automobiles and Accessories	1950
9	Sameer Africa	Automobiles and Accessories	1994
10	Marshalls (E.A) Limited	Automobiles and Accessories	1987
11	Barclays Bank of Kenya Limited	Banking	1986
12	CFC Stanbic of Kenya Holdings Limited	Banking	1970
13	Diamond Trust Bank of Kenya Limited	Banking	1972
14	Equity Group Holdings Limited	Banking	2006
15	Housing Finance Group Limited	Banking	1992
16	I&M Holdings Limited	Banking	2013
17	KCB Group Limited	Banking	1989
18	National Bank of Kenya Limited	Banking	1994
19	NIC Group PLC	Banking	1971
20	Standard Chatered Bank Kenya Limited	Banking	1988
21	The cooperative Bank of Kenya Limited	Banking	2008
22	Atlas African Industries Limited	Commercial and Service	2014
23	Express Kenya Limited	Commercial and Service	1978
24	Kenya Airways Limited	Commercial and Service	1996
25	Longhorn Publishers Limited	Commercial and Service	2012
26	Nairobi Business Ventures Limited	Commercial and Service	2016
27	National Media Group Limited	Commercial and Service	1973
28	Standard Group Limited	Commercial and Service	1954
29	TPS Eastern Africa Limited	Commercial and Service	1997
30	Uchumi Supermarket Limited	Commercial and Service	1992
31	WPP Scan Group Limited	Commercial and Service	2006
32	Deacons East Africa PLC	Commercial and Service	2016
33	Hutchings Biemer Limited	Commercial and Service	1993
34	Athi River Mining Cement Limited	Construction & Allied	1997
35	Bamburi Cement Limited	Construction & Allied	1951
36	Crown Paints Kenya Limited	Construction & Allied	1992

37	E.A Cables Limited	Construction & Allied	1973
38	E.A Portland Cement Company Limited	Construction & Allied	1972
39	Ken Gen Company Limited	Energy and Petroleum	2006
40	Kenol Kobil Limited	Energy and Petroleum	1959
41	Kenya Power & Lighting Company Limited	Energy and Petroleum	1954
42	Total Kenya Limited	Energy and Petroleum	1988
43	Umeme Limited	Energy and Petroleum	2012
44	Britam Holdings Limited	Insurance	2011
45	CIC Insurance Group Limited	Insurance	2012
46	Jubilee Holdings Limited	Insurance	1984
47	Kenya Reinsurance Corporation Limited	Insurance	2006
48	Liberty Kenya Holdings Limited	Insurance	2007
49	Pan Africa Insurance Holdings Limited	Insurance	1963
50	Centum Investment Company Limited	Investment	1977
51	Home Afrika Limited	Investment	2013
52	Kurwitu Ventures Limited	Investment	2014
53	Olympia Capital Holdings Limited	Investment	1974
54	Trans-Century Limited	Investment	2011
55	Nairobi Securities Exchange Limited	Investment Services	2014
56	B.O.C Kenya Limited	Manufacturing and allied	1969
57	British American Tobacco Kenya Limited	Manufacturing and allied	1969
58	Carbacid Investments Limited	Manufacturing and allied	1972
59	East African Breweries Limited	Manufacturing and allied	1972
60	Eveready East Africa Limited	Manufacturing and allied	2006
61	Flame Tree Group Holdings Limited	Manufacturing and allied	2015
62	Kenya Orchards Limited	Manufacturing and allied	1959
63	Mumias Sugar Company Limited	Manufacturing and allied	2001
64	Baumann Company limited	Manufacturing and allied	1976
65	Unga Group Limited	Manufacturing and allied	1971
66	Safaricom Limited	Telecommunication and Technology	2008
67	Stanlib Fahari I-Reit	Real Estate Investment Trust	2015

Exclusion inclusion criteria

Total population =67

Exclude all firms listed 2011 and above -13

Exclude all firms that did not trade consistently -5

Exclude firms that did provide relevant data-10

Firms selected for the study= 39

