

**SHORT-TERM FINANCING DECISIONS AND FINANCIAL PERFORMANCE
OF NON-FINANCIAL FIRMS LISTED AT THE NAIROBI SECURITIES
EXCHANGE, KENYA**

**BY
MAKORI MOGAKA DANIEL**

**A THESIS SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE
DEGREE OF DOCTOR OF PHILOSOPHY IN FINANCE OF KENYATTA
UNIVERSITY**

MAY 2017

DECLARATION

DECLARATION

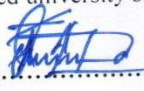
This thesis is my original work and has not been presented for a degree award in any other University. No part of this thesis may be produced without prior authority of the author and/or Kenyatta University.

SIGNATURE:  DATE: 07/06/2017

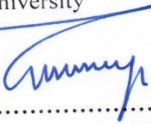
MAKORI MOGAKA DANIEL
D86/CTY/PT/22850/2012)

Declaration by Supervisors

We confirm that the work in this thesis was carried out by the candidate under our supervision as the appointed university supervisors.

SIGNATURE:  DATE: 7th June 2017

DR. AMBROSE JAGONGO
Department of Accounting and Finance,
School of Business, Kenyatta University

SIGNATURE:  DATE: 7/06/2017

DR. EDDIE SIMIYU
Department of Accounting and Finance,
School of Business, Kenyatta University



DEDICATION

I dedicate this thesis to my dear wife (Monica Wanjine) and my lovely daughter (Marion Cindy) for their love, moral support and encouragement that inspired me in the course of this study. I also dedicate this work to my mother (Florah Nyaboke) and my late father (Peter Makori) for laid a strong academic foundation upon which I have walked this journey.

ACKNOWLEDGEMENT

Primarily, all praises to the Almighty God, the munificent, the originator of the universe, who endowed with me the vigor and courage to complete this thesis.

Whilst the writer takes ownership and recognition for the product of this piece of work, many gifted people contributed their expertise and time. Consequently, I wish to recognize the support and direction of the ensuing folks.

First and foremost, my indebtedness and exceptional thanks goes to my affectionate and dedicated supervisors, Dr. Ambrose Jagongo and Dr. Eddie Simiyu for being instrumental in the development of this thesis. Devoid of their professional leadership, commitment, and patience, I would not have accomplished this study journey.

My heartfelt appreciation also goes to Dr. Fredrick Ndede, Dr. Job Omagwa, Dr. Lucy Wamugo, Dr. Jeremiah Koori, Dr. James Kilika, and Dr. Julius Korir of Kenyatta University for their incredible support in shaping the bearing of this thesis. Thanks are also due to the staff of Capital Markets Authority, especially Mr. Joshua Gichiri, the librarian, for assistance in the data collection that facilitated the completion of this thesis.

I would undoubtedly not be where I am devoid of the unrelenting love and encouragement from my entire family. Accolade goes to my dear wife and loving daughter who forfeited a lot of stuff owing to my demanding schedule. Many thanks also go to my siblings, Everline, Alice, Geoffrey, and Edinah for their encouragement. My earnest gratitude also goes to my father-in-law, Mr. Josphat Mbugua, my mother-in-law, Mrs. Lucy Njeri, my brothers-in-law, Wangige, Ndung'u and Sammy while not forgetting my sisters-in-law, Wanjiku and Wambui for their support. Finally, I appreciate my uncle, Mr. Edwin Osea Nyaencha and his beloved family for their encouragement.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	xi
LIST OF FIGURES	xiii
OPERATIONAL DEFINITION OF TERMS	xiv
ABBREVIATIONS AND ACRONYMS	xvii
ABSTRACT	xix
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Short-Term Financing Decisions	3
1.1.2 Cash Holdings	6
1.1.3 Firm Characteristics	7
1.1.4 Financial Performance	8
1.1.5 Short-Term Financing Decisions and Financial Performance	10
1.1.6 Nairobi Securities Exchange.....	12
1.2 Statement of the Problem.....	13
1.3 Objectives of the Study	15
1.3.1 General Objective	15
1.3.2 Specific Objectives	15
1.4 Research Hypotheses	16
1.5 Significance of the Study	17

1.6	Scope of the Study	18
1.7	Organisation of the Study	18
CHAPTER TWO		19
LITERATURE REVIEW		19
2.1	Introduction.....	19
2.2	Theoretical Review	19
2.2.1	Precautionary Motive Theory	19
2.2.2	Financing Advantage Theory.....	21
2.2.3	Liquidity Theory	22
2.2.4	Pecking Order Theory.....	23
2.2.5	Free Cash Flow Theory.....	24
2.3	Empirical Literature Review.....	26
2.3.1	Short-Term Financing Decisions and Financial Performance.....	26
2.3.2	Mediating Effect of Cash Holdings	34
2.3.3	Moderating Effect of Firm Characteristics	37
2.4	Summary of Empirical Literature and the Research Gaps.....	40
2.5	Conceptual Framework.....	42
CHAPTER THREE		46
RESEARCH METHODOLOGY		46
3.1	Introduction.....	46
3.2	Research Philosophy	46
3.3	Research Design.....	47
3.4	Empirical Model	48
3.4.1	Direct Effect Model	49
3.4.2	Interactive Effect Model	50

3.4.3	Mediation Effect Model.....	51
3.4.4	Moderating Effect Model.....	52
3.5	Operationalization and Measurement of Variables.....	54
3.6	Target Population.....	58
3.7	Sampling Design and Sample Size	60
3.8	Data Collection Instrument.....	60
3.9	Data Collection Procedure	61
3.10	Data Analysis Techniques.....	62
3.10.1	Diagnostic Tests.....	62
3.10.1.1	Normality Tests.....	63
3.10.1.2	Multicollinearity	63
3.10.1.3	Autocorrelation	64
3.10.1.4	Heteroscedasticity	64
3.10.1.5	Panel Unit Root Test.....	65
3.10.2	Test for Fixed or Random Effects.....	65
3.10.3	Ethical Considerations	66
CHAPTER FOUR.....		68
RESEARCH FINDINGS AND DISCUSSIONS		68
4.1	Introduction.....	68
4.2	Descriptive Statistics.....	68
4.2.1	Short-Term Financing Decisions and Financial Performance (Sector-Wise).....	68
4.2.2	Descriptive Statistics of All Variables (Overall)	70
4.3	Trend Analysis	72
4.4	Diagnostic Tests.....	83
4.4.1	Test for Multicollinearity.....	84

4.4.2	Panel Unit Root Tests	85
4.4.3	Test for Normality.....	85
4.4.4	Heteroskedasticity Test.....	87
4.4.5	Test for Autocorrelation.....	87
4.4.6	Hausman Test.....	87
4.5	Correlation Analysis	91
4.6	Regression Analysis.....	93
4.6.1	Test for Direct Effect	93
4.6.1.1	Effect of Short-Term Financing Decisions on Return on Assets ..	94
4.6.1.2	Effect of Short-Term Financing Decisions on Return on Equity ..	95
4.6.1.3	Effect of Short-Term Financing Decisions on Tobin-Q.....	96
4.6.2	Test for Interaction Effect.....	97
4.6.2.1	Interaction Effect of Short-Term Financing Decisions on ROA... ..	98
4.6.2.2	Interaction Effect of Short-Term Financing Decisions on ROE	99
4.6.2.3	Interaction Effect of Short-Term Financing Decisions on TQ.... ..	100
4.6.3	Test For Mediating Effect.....	101
4.6.3.1	Mediating effect of Cash Holdings on the relationship between Short-Term Financing Decisions and ROA	101
4.6.3.2	Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and ROE.....	106
4.6.3.3	Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and TQ	110
4.6.4	Test for Moderating Effect.....	114
4.6.4.1	Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and ROA	114

4.6.4.2	Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and ROE.....	118
4.6.4.3	Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and TQ	123
4.7	Discussion of Findings.....	127
4.7.1	Effect of Short-Term Financing Decisions on Financial Performance.....	127
4.7.1.1	Effect of Inventory Turnover Decisions on Financial Performance.....	128
4.7.1.2	Effect of Accounts Receivable Turnover Decisions on Financial Performance.....	129
4.7.1.3	Effect of Accounts Payable Turnover Decisions on Financial Performance.....	130
4.7.1.4	Effect of Cash Conversion Cycle Decisions on Financial Performance.....	132
4.7.1.5	Effect of Firm Characteristics on Financial Performance.....	133
4.7.2	Interaction Effect of Short-Term Financing Decisions on Financial Performance	134
4.7.3	Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and Financial Performance	137
4.7.4	Moderating Effect of Firm Characteristics on the Relationship between Short-Term Financing Decisions and Financial Performance	139
	CHAPTER FIVE	144
	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	144
5.1	Introduction.....	144
5.2	Summary	144
5.3	Conclusions.....	147

5.4	Policy Recommendations.....	150
5.5	Contribution to Knowledge.....	153
5.6	Limitations and Delimitations of the Study.....	154
5.7	Areas for Further Research	155
	REFERENCES.....	157
	APPENDICES	175
	Appendix I: Non-Financial Firms Listed at the NSE, Kenya	175
	Appendix II: List of Selected Firms.....	176
	Appendix III: Research Permit	177
	Appendix IV: Document Review Guide-Data Abstraction Tool.....	178
	Appendix V: Document Review Guide-Data Entry Sheet	180
	Appendix VI: Diagnostic Test Results	181
	Appendix VII: Testing for Random and Fixed Effects.....	184
	Appendix VIII: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and ROA.....	190
	Appendix IX: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and ROE.....	191
	Appendix X: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and TQ.....	193

LIST OF TABLES

Table 3.1: Mediation Decision Making Criteria	52
Table 3.2: Operationalization and Measurement of Study Variables	57
Table 3.3: Target Population Distribution	58
Table 3.4: Selection of Firms	60
Table 3.5: Summary of Data Analysis Techniques	67
Table 4.1: Short-Term Financing and Financial Performance (Sector-Wise)	68
Table 4.2: Descriptive Statistics of All Variables	70
Table 4.3: Multicollinearity Results	84
Table 4.4: Hausman Test for ROA	88
Table 4.5: Hausman Test for ROE	89
Table 4.6: Hausman Test for TQ	90
Table 4.7: Correlation Matrix Results	91
Table 4.8: Regression Results with ROA	94
Table 4.9: Regression Results with ROE	95
Table 4.10: Regression Results with TQ	96
Table 4.11: Interaction Effect of Short-Term Financing Decisions on ROA	98
Table 4.12: Interaction Effect of Short-Term Financing Decisions on ROE	99
Table 4.13: Interaction Effect of Short-Term Financing Decisions on TQ	100
Table 4.14 Regression Results for the Mediating Effect (Dependent Variable: ROA) ...	104
Table 4.15 Regression Results for the Mediating Effect (Dependent Variable: ROE) ...	108
Table 4.16 Regression Results for the Mediating Effect (Dependent Variable: TQ)	112
Table 4.17: Moderation Effect Regression Results with ROA	115
Table 4.18: Summary Results for Moderating Effect (Dependent Variable: ROA)	117
Table 4.19: Moderation Effect Regression Results with ROE	119

Table 4.20: Summary Results for Moderating Effect (Dependent Variable: ROE)	122
Table 4.21: Moderation Effect Regression Results with TQ	124
Table 4.22: Summary Results for Moderating Effect (Dependent Variable: TQ)	126
Table A.1: Panel Unit Root Test Results	181
Table A.2: Jarque-Bera Test for Normality	183
Table A.3: Heteroskedasticity Test Results	183
Table A.4: Serial Correlation Tests	183
Table A.5: Random Effect Test Results for ROA	184
Table A.6: Fixed Effect Results for ROA	185
Table A.7: Random Effect Results for ROE	186
Table A.8: Fixed Effect Results for ROE	187
Table A.9: Random Effect Results for TQ	188
Table A.10: Fixed Effect Results for TQ	189
Table A.11: Effect of Short-Term Financing Decisions on ROA (First Step)	190
Table A.12: Effect of Short-Term Financing Decisions on CR (Second Step)	190
Table A.13: Effect of Short-Term Financing Decisions and Cash Holdings on ROA (Third and Fourth Steps)	191
Table A.14: Effect of Short-Term Financing Decisions on ROE (First Step)	191
Table A.15: Effect of Short-Term Financing Decisions on CR (Second Step)	192
Table A.16: Effect of Short-Term Financing Decisions and Cash Holding on ROE (Third and Fourth Steps)	192
Table A.17: Effect of Short-Term Financing Decisions on TQ (First Step)	193
Table A.18: Effect of Short-Term Financing Decisions on CR (Second Step)	193
Table A.19: Effect of Short-Term Financing Decisions and Cash Holding on TQ (Third and Fourth Steps)	194

LIST OF FIGURES

Figure 2.1: Conceptual Framework	44
Figure 4.1: Trend of Return on Asset for the Year 2001-2014.....	73
Figure 4.2: Trend of Return on Equity for the Year 2001-2014.....	74
Figure 4.3: Trend of Tobin-Q for the Year 2001-2014.....	75
Figure 4.4: Trend of Inventory Holding Period for the Year 2001-2014	76
Figure 4.5: Trend of Accounts Receivable Turnover for the Year 2001-2014.....	77
Figure 4.6: Trend of Accounts Payable Turnover for the Year 2001-2014.....	78
Figure 4.7: Trend of Cash Ratio for the Year 2001-2014.....	79
Figure 4.8: Trend of Cash Ratio for the Year 2001-2014.....	80
Figure 4.9: Trend of Total Asset for the Year 2001-2014	81
Figure 4.10: Trend of Revenue Growth for the Year 2001-2014	82
Figure 4.11: Trend of Leverage for the Year 2001-2014.....	83
Figure 4.12: Histogram of Residuals	86

OPERATIONAL DEFINITION OF TERMS

Accounts Payable Period	A variant of the accounts receivable turnover ratio, which reflects the period in terms of days a firm, takes to pay the bills. It evaluates the effectiveness of the company in managing its payables.
Accounts Payable Turnover	Number of times on average accounts payable is paid during the year.
Accounts Payable Turnover Decisions	Measures used to determine optimum level of accounts payable turnover. Accounts payable turnover in day's ratio is a proxy for accounts payable decisions.
Accounts Receivable Period	A variant of the accounts receivable turnover ratio, which shows how many days a firm, takes to turn account receivables to ready money.
Accounts Receivable Turnover	Number of times on average, cash is collected from the accounts receivable are during the year.
Accounts Receivable Turnover Decisions	Actions taken to either relax or tighten the company's credit policy depending on the length of accounts receivable period. Accounts receivable period is a proxy for accounts receivable turnover decisions.
Cash Conversion Cycle	Proxy for decisions on cash conversion cycle that indicates the duration from the purchase of raw materials to manufacture of products right through the collection of accounts receivable

	related with the product sale.
Cash Conversion Cycle Decisions	Management policies concerning the accounts receivable, inventory holding and accounts payable periods that domino effect into the most favorable cash conversion cycle.
Cash Holdings	Amount of cash and cash equivalents the company keeps available to spend and invest. Cash ratio is a proxy for cash holdings.
Debt to Total Assets Ratio	Proxy for financial leverage that indicates the proportion of a firm's resources financed by external funds.
Financial Performance	Firms' overall financial wellbeing during a specified period and it appraises related firms, industries, or sectors in aggregation.
Firm Size	Computed as the natural logarithm of total assets and acts as a proxy for the size of non-financial firms listed at the NSE.
Growth Opportunities	An indicator of investment prospects available to non-financial firms listed at the NSE.
Inventory Holding Period	A variant of the accounts receivable turnover ratio, which reflects the numbers of days companies hold on the inventories.
Inventory Turnover Decisions	Actions taken to determine the ideal inventory-holding period.
Inventory Turnover	Number of times on average, inventory is converted and

replaced during the year.

Listed Firms	Firms quoted or trading in a stock market.
Return on Assets	Proxy for financial performance, which shows the ability of the company to turn assets into profit.
Return on Equity	Indicator of efficient management of investment made by shareholders. It is a measure of financial performance and is a proxy for shareholders' value.
Short-Term Financing Decisions	Multiple crucial decisions which involve managing accounts payable, accounts receivable and inventories to meet the immediate cash requirements of a firm. Inventory holding, accounts receivable and accounts payable periods are proxies for short-term financing decisions.
Non-financial firms	Firms other than those in the banking, insurance, investment, telecommunications sectors and some commercial and service firms.
Tobin-Q	The ratio of the market value of a firm to the substitute cost of its assets. It is a measure of financial performance and is as a proxy for firms' market value.

ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
APP	Accounts Payable Period
APT	Accounts Payable Turnover
ARP	Accounts Receivable Period
ART	Accounts Receivable Turnover
BSE	Bombay Stock
CCC	Cash Conversion Cycle
CLRM	Classical Linear Regression Model
CMA	Capital Markets Authority
CMC	Cooper Motor Corporation
CR	Cash Ratio
EBIT	Earnings Before Interest and Tax
FE	Fixed Effects
FGI	Finished Goods Inventory
FGLS	Feasible Generalized Least Squares
FSIZE	Size of Firm
GDP	Gross Domestic Product
GDPGR	Gross Domestic Product Growth Rate
IHP	Inventory Holding Period
INV	Inventory
IT	Inventory Turnover
IISTE	The International Institute for Science, Technology and Education
JSE	Johannesburg Stock Exchange
KCC	Kenya Cooperative Creameries

KPCU	Kenya Planters Co-operative Union
KSE	Karachi Stock Exchange
LEV	Leverage
OLS	Ordinary Least Squares
NSE	Nairobi Securities
NYSE	New York Stock Exchange
RE	Radom Effects
RMI	Raw Materials Inventory
ROA	Return on Assets
ROE	Return on Equity
SIZE	Firm Size
SMEs	Small and Medium Enterprises
SSEs	Small Scale Enterprises
TQ	Tobin-Q
UK	United Kingdom
US	United States
USA	United States of America
VIF	Variance Inflation Factor
WCM	Working Capital Management
WIP	Work-In-Process
WLS	Weighted Least Squares

ABSTRACT

The existing literature links poor financial performance among non-financial listed firms in Kenya to long-term funding conduct of these firms. However, as important as long-term financing decisions are, they are made less frequently, while the day-to-day decisions involving the management of short-term financing components consume tremendous amounts of management time. Poor short-term financing decisions impair the firm's ability to remain operating. This study therefore investigates the effect of short-term financing decisions on financial performance of non-financial firms listed at the Nairobi Securities Exchange, Kenya. This thesis also seeks to determine the interaction effect of short-term financing on the financial performance of non-financial firms listed at the NSE. The study further investigates the moderating effect of firm characteristics namely firm size, growth opportunities and financial leverage on the relationship between short-term financial decisions and financial performance of non-financial firms listed at the NSE. In order to provide a holistic solution, the study evaluates the mediating role of cash holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE. The research employs explanatory research design, which is non-experimental in nature. The study has adopted a census of 26 non-financial firms listed at the NSE. The study uses panel data extracted from the annual reports and financial statements of non-financial firms obtained from the NSE handbooks, Capital Markets Authority library, and company websites for the period 2001-2014. The study has applied panel data models (random and fixed effects) on the basis on the results the of Hausman specification test. The mediating effect of cash holdings has been tested using the step-wise regression technique by employing a four-step approach by Baron and Kenny (1986). In addition, the study has used Modified Wald and Wooldridge tests to test for heteroscedasticity and serial correlation respectively. Moreover, the study has performed Bera and Jarque and Fisher-type tests to test for normality and unit root in panel data respectively while the study has tested the presence of multicollinearity by the Variance Inflation Factor test. Finally, the study has used Feasible Generalized Least Squares to approximate the regression model owing to the presence of heteroskedasticity problem. The FGLS regression results reveal that inventory turnover decisions have positive effect on financial performance measures. However, only the relationship between inventory turnover decisions and return on assets is significant. The study also establishes that accounts receivable turnover decisions are have significant negative effect on all financial performance measures while accounts payable turnover decisions have significant positive effect on all financial performance measures. The study further determines that cash holding has significant mediating effect on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE. Additionally, the study finds that the interaction between the short-term financing decision components had a significant effect on financial performance. Finally, the study determined that the relationship between short-term financing decisions and financial performance when using return on assets and Tobin-Q is moderated by firm characteristics. The study, therefore, recommends that managers of non-financial listed firms at NSE should lessen the accounts receivable period to a sensible minimum in order to generate worth for their shareholders; and increasing inventory holding and accounts receivable periods to reasonable levels. This study further recommends that managers should maintain an optimal cash ratio. Finally, the study recommends that the policy makers of should consider the firm characteristics such as the size of the firm, leverage and growth opportunities affect short-term financing decisions which in turn affects firms' performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial performance of the listed firms in any country is central to the performance of the stock market and of that economy at large (Maina & Sakwa, 2012). On the contrary, the non-financial firms listed at the Nairobi Securities Exchange (NSE) have been performing poorly in recent years (Ngugi, Amanja & Maana, 2009). Whereas there are about 61 firms listed at the NSE, some of them are not in health financial position. In addition, some of the quoted firms have suffered decline in financial performance and de-listed by Capital Markets Authority (CMA). It is necessary to note that many of the tribulations facing these companies were largely to do with insufficient funding (Chebii, Kipchumba & Wasike, 2011). Yet, spotlight has been on the long-term financing decisions, for instance capital structure and rarely on short-term financial decisions (Ray, 2012; Autukaite & Molay, 2013). Dandapani, Chang and Prakash (1995) notes that the current assets constitute 40 percent of the total assets of an average firm, and the day-to-day management of short-term financial resources consumes 80 percent of the time of a financial manager.

Short-term finance constitutes the working capital (WC) of the company directly connected to trade-off between liquidity and performance (Pamasivan & Subramanian, 2009). Working capital management (WCM) augments the free cash flow of the firm, which in turn enhances the firms' intensification prospects and value to shareholders (Christopher & Kamalavalli, 2009). WC is a significant aspect in sustaining the continuity, solvency, liquidity, and productivity of the firm (Akash, Khan, Hamid, & Hussain, 2011). Holding high levels of current assets in form of account receivables and

inventory may render the firm incapable of paying its short-term obligation when they fall due. Also high levels of short liabilities increase chances of bankruptcy (Ricci & Vito, 2000). Thus, efficient management of WC entails attaining best possible level of working capital that exploits growth opportunities (Afza & Nazir, 2007). Padachi (2006) points out that a great number of businesses collapse due to the incapacity to plan and organize appropriately current assets and liabilities of firms.

In order to free up funds to meet short-term financial requirements, it is imperative for companies to focus more on working capital management efficiency (Ernst & Young's Working Capital Report, 2009). Strategic management of the current assets and liabilities results to shorter cash conversion cycle, which generates sufficient funds to firms and boosts the cash holding levels. Nonetheless, this exposes the firms to the risks of stock-out situations, default by customers, and risk of trade credit from suppliers (Zeitun & Tian, 2007). Too little working capital might result in the firm's incapability to take care of its financial obligations. On the other hand, locking up a great amount resources in working capital minimizes the return on capital employed. Therefore, firm can reduce risk, plan for uncertainties, and build a stand by cash reserve to assist in hard times in order to advance financial performance of firms (Nobanee & AlHajjar, 2009).

Sartoris and Hill (1983) points out that the decisions made in any one short-term financing component have effects on the other components. Ban˜os-Caballero, Garcı'a-Teruel, and Martı'nez-Solano (2012) also underscore the importance of considering the three components at the same time because they influence each other as well as firms' profitability and value. However, studies on short-term financing as detailed in the empirical review in chapter two mostly focuses on the direct effect of short-term financing decisions on financial performance but fails to appreciate the indirect

mechanism through which the short-term financial decisions are able to influence firm performance. An understanding of the mediating role of corporate cash holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE is thus imperative.

1.1.1 Short-Term Financing Decisions

Short-term finance is primarily concerned with the analysis of decisions that affect current assets and current liabilities (Ross, Westerfield & Jordan, 2008). It involves multiple crucial decisions, which involve management of account payables and receivables, cash conversion cycle, preservation a definite level of stock and the investment of available cash (Deloof, 2003). Decisions about working capital management are generally associated with simultaneous financing of short-term investments of both current assets and current liabilities (Damodaran, 2002). Hence, working capital management is reasonably termed short-term financial management most of the time (Fisman & Love, 2003). The performance of working capital offers an important view of the state of the financial position of a company (Financial Executives International Canada, 2013). Companies can cut dependence on external funding by effectively managing working capital, and utilize the freed cash for additional investments, which results in added financial flexibility (Autukaite & Molay, 2013).

The liquidity crisis experienced by large companies, particularly during the 2008 worldwide financial turmoil, increased consciousness among firms to let loose the valuable cash locked up in the net trading cycle. A firm needs to retain a certain level of net working capital in order to obtain debt financing from most financial institutions (McGuigan, Moyer, Rao & Kretlow, 2012). Thus, short-term financial management for the most part is the fundamental occupation of corporate management since it is a life

giving force for any business. For that reason, both profit and non-profit leaning organizations, regardless of their size and business type, needs a certain level of working capital (Mukhopadhyay, 2004). Financial decisions of short-term assets and liabilities management are critical because they lay bare the financial stability of the firm and the market. These decisions moreover ensure that a business has ample cash flow to take care of operating expenses and short-term debt obligations (Afza & Nazir, 2008).

The working capital components carry with it benefits and costs. For example, inventory holding lessens stock-out situations but raises the carrying costs. Conversely, holding insufficient inventory could lead to loss of sales, benevolence among customers and production interruptions (Ross *et al.*, 2008). Concerning receivables, Salek (2005) points out that the conditions for permitting credit requires should relaxed up in order to heighten sales. However, thinning it would decrease receivables and losses due to bad debt but leads to sales reduction. On payables, firms may be capable of getting cash discounts for paying their trade credit early (Berk, DeMarzo & Harford, 2009). Berk *et al.* (2009) suggests that a company should opt to make use of accounts payables only if it is the least expensive source of financing. This, therefore, requires the proficient management of working capital aspects.

It is essential to manage inventories efficiently since most firms maintain huge inventories; hence, considerable sum of an organization's fund is being committed to them (Kumar & Bahl, 2014). On average, inventories represent approximately 44 percent of the current assets and 18 percent of the total assets of most firms. Maximizing the returns on investments in inventories is therefore, one of the key objectives of a finance manager (Mathuva, 2013). Excess investment in inventories may depict inefficiencies in inventory management. Reducing the level of inventories is in line with lean production

concept, although variation in demand patterns limits the application of this concept (Nobanee, 2010).

Accounts receivable management is a decisive field of corporate finance because of its effect on risk and financial performance, and accordingly on the firm's market value (Mihajlov, 2012). Accounts receivables are among the most significant elements of short-term financing. They normally embody large investment in total assets of the firm and absorb noteworthy amount of transactions and decisions. On average, firms invest 25 percent of their total assets in accounts receivable (Giannetti, 2003). For instance, the proportion of accounts receivables in total assets varies from 39 percent in Spain, 29 percent in France, and 19 percent in Finland (Pedro & Martínez, 2010). Kimutai (2006) asserts that, accounts receivables account for a big proportion of assets in businesses averaging 15 percent to 20 percent of the total assets of a typical business in Kenya.

Accounts payable is an essential substitute for both short-term and long-term financial debts (Deloof, 2003). It is an important source of funding for many firms (Chowdhury & Amin, 2007). Indeed, trade credit constitutes 41 percent and 35 percent of the total debt for medium sized firms in the United Kingdom and United States respectively (Cunãt, 2007). The utilization of trade credit as a source of short-term financing has a number of advantages. To begin with, firms opt for trade credit to get through financial constrictions, particularly when credit from financial establishments is not accessible (Ge & Qiu, 2007). Next, trade credit permits firms to trim down the transaction cost associated with the procedure of making payments for invoices, and the confirmation of the quality of products prior to paying (Pike, Cheng, Cravens & Lamminmaki, 2005). Lastly, trade credit affords a higher level of financial flexibility than bank loans (Huyghebaert, Van de Gucht & Van Hulle, 2007).

The cash conversion cycle (CCC) embodies an excellent indicator of working capital management efficiency (Nobanee & AlHajjar, 2012). CCC is an all-inclusive indicator which relates with the management of account receivables, inventory and account payables (Hutchison, Farnis & Anders, 2007). CCC entails the duration starting with the raw materials purchases used in production until the debts collection related to the sale of the products (Besley & Brigham, 2005). It is traditionally argued that a shorter CCC improves profitability and vice versa (Mathuva, 2010). Jamming resources at various phases of the supply chain lengthens the cash conversion cycle and though this may enhance profitability (owing to improved sales), it may unfavorably affect profitability if the benefits of holding extra inventory and/or conceding additional trade credit to customers go below the costs engaged in working capital (Padachi, 2006).

1.1.2 Cash Holdings

Cash holdings are seen as the accessible cash and assets readily convertible into cash, such as financial receivables and securities with maturity not exceeding three months (Gill & Shah 2012). Firms can take advantage of extra investment opportunities without being too limited by capital from high cash holdings (Ogundipe, Ogundipe & Ajao, 2012). Cash holding comprises a security safeguard, which permit firms to shun the cost of mobilizing funds from outside or selling the available assets to fund their growth prospects. On the other hand, inadequate cash balance pushes companies to miss investment projects that are profitable or go for abnormal cost of financing (Ogundipe *et al.*, 2012). However, businesses should come up with thorough, sound and logical decisions in order to avoid the negative effect of holding too much cash (Elkinawy & Stater, 2007). Short-term financing presents an enormous opportunity for businesses to discharge cash to operate more successfully. In fact, efficient management of cash

presents companies with growth opportunities exclusive of additional financial support (Frankfurt Business Media, 2012).

The variation in working capital management components determines the cash holding levels (Almeida, Campello & Weisbach, 2004). Moreover, the short-term debt changes can be a proxy for cash as companies may employ short-term debt as a financial source. Efficient management of working capital reduces the requirements for external funding thereby improving financial performance of firms (Paramasivan & Subramanian, 2009). Ferreira and Vilela (2004) reveal that the amount of liquid asset surrogates is adversely affected by the cash held by firms. Ozkan and Ozkan (2004) further points out that companies can substitute cash holdings with non-cash assets namely net working capital less cash and marketable securities. This study, therefore, explores the mediating effect of cash holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE.

1.1.3 Firm Characteristics

Different firm characteristics such as size, financial leverage and growth opportunities might lead to diverse investment strategies in working capital based on the role played by each these characteristics in infuriating and/or plummeting the problem of asymmetric information and the cost allied to the level of asymmetric information (Wasiuzzaman & Arumugam, 2013). To begin with, large companies can afford to have relaxed policies on inventories and account receivables since they have access to external funding and less borrowing limitations (Hill, Kelly & Highfield, 2010). Larger companies have higher sales volumes and therefore, need bigger investments in working capital. They also have sophisticated bargaining power with creditor and customers and tend to be more diversified (Moussawi, LaPlante, Kieschnick & Baranchuk, 2006).

Another firm characteristic is financial leverage. Firms with increasing debt ratios would pay extra consideration to their working capital since external funding is more costly than internal funding. This could prevent trapping cash in the operating cycle which could be exploited for more beneficial investment opportunities (Nazir & Afza, 2009). In addition, investing high cost funds in the working capital cycle would not appear to be an excellent idea since the return on working capital investment is little. Alternatively, companies with high debt ratios tend to need more cash flow from operation in order to repay its debt or renew it (Nwaeze, Yang, & Yin, 2006).

Finally, companies that expect more expansion opportunities needs added funds in the future and accordingly require extra internal financing. In expectation of this, companies then amplify their short-term investments and cash holdings. Expectation of soaring growth in sales may perhaps result in firms accumulating more inventories, which can overshadow the effect on trade credit (Moussawi *et al.*, 2006). Therefore, companies with elevated growth rate maintain low levels of operating working capital and hence the negative relationship between the requirement of working capital and growth opportunities (Charitou, Elfani, & Lois, 2010). It is, therefore, worthwhile to establish the moderating effect of firm characteristics on relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE.

1.1.4 Financial Performance

Financial performance is a measure of efficient utilization of assets by a firm from principal business mode to generate revenues. The return on investment, return on assets, market value, and accounting profitability reflect financial performance of firms (Naser & Mokhtar, 2004). Financial performance is a general a general measure of the overall financial health of a firm over a given period when compared with similar firms (Ricci &

Vito, 2000). High financial performance reflects management effectiveness and efficiency in making use of company's resources, and expressed in terms of growth of sales, profitability, employment, or stock prices. Efficient management of various economic resources has a direct effect on the financial performance of firms (Njanja & Pellisier, 2011).

The effectiveness and efficiency in making use of company's resources and growth of sales is reflected in its financial performance as measured by profitability and stock prices. For instance, profitability is a measure of the amount by which a firm's revenues exceeds the corresponding expenses (Naser & Mokhtar, 2004). Liquidity, profitability, and shareholders wealth are the recommended measures of financial performance. Therefore, monitoring these measures as a group is more important than focusing on only one or two measures at the exclusion of others (Niresh, 2012). To put in plain words, financial performance is a pointer to the skillful administration of available resources of the business. There are various ways of classifying the production resources. Time is the basis of one of the categorization where long-term resources consist of fixed assets, which are necessary for production use while short-term resources comprises raw materials and labor cost. Thus, the most important guiding standard in production by a company is the assumption of profit maximization. Escalating the total revenue or reducing the total expenses results in corporate profitability (Dey, 2009).

The development of the economy is dependent on the performance of the financial sector and the stock market. The depth of the financial sector supports economic growth and a properly working capital market enhances economic effectiveness (Ngugi *et al.*, 2009). This implies that the performance of the stock market and the economy in general is reliant on the financial performance of the listed firms. The analysis of the performance

of the stock market in Kenya shows that has not made momentous contribution to the economic growth (Ngugi *et al.*, 2009). Thus, the motivation to undertake this study is due many corporate failures in the Kenyan capital market and those that have gone into receivership, only a handful of companies have managed to come of out of it in sound financial health. For example, Uchumi Supermarkets, Kenya Cooperative Creameries (KCC), Nyaga Stock Brokers, Bulk Medical Limited, and A Baumann and Company are case in point of these firms (Maina & Sakwa, 2012).

1.1.5 Short-Term Financing Decisions and Financial Performance

Maintenance of liquidity, solvency, survival, and profitability of companies is the most important role of working capital management (Mukhopadhyay, 2004). The promotion of the well-being of the business on the market in terms of liquidity and growth of the value of shareholders is dependent on efficient management of working capital. The ineffective short-term financing management not only decreases financial performance but eventually might also lead a business to financial crisis and as a result, every organization regardless of its size, profit orientation, and type of business, requires necessary amount of WC (Jeng-Ren, *et al.*, 2006). Efficient management of short-term financial resources, thus, has massive influence to the financial performance of a firm (Siddiquee & Khan, 2009).

Arnold (2008) observes that working capital management unambiguously affects both the financial performance and the desired level of liquidity of a company. The profits that are generated by investing these resources in long-term assets are reduced if a company invests deeply in working capital, that is, in excess of its requirements. Furthermore, the cost of storing inventory for longer periods and handling of excessive inventory put up with by a firm. Raheman and Nasr (2007) add that each company, for its continued

existence, needs short-term financing. Short-term financing is a very important component of company investment that is indispensable for uninterrupted company operations. Therefore, to uphold its liquidity, solvency, and financial performance, a firm requires a certain level of working capital. At times, erroneous procedures of working capital management may possibly result in bankruptcy, albeit the profitability of a company may continually be positive (Samiloglu & Demirgunes, 2008). For instance, a company may realize inferior return on investment due to disproportionate levels of current assets (Raheman & Nasr, 2007).

Short-term financing decisions require exceptional consideration since the management of working capital largely affects a firm's financial performance (Chowdhary & Amin, 2007). A firm may face a financial crisis since inefficient management of working capital reduces profitability. Both insufficient and unwarranted working capital is injurious for a firm. The unwarranted working capital can lead to redundant funds used for earning profit while the insufficient working capital disrupts the operations and harms profitability (Ganesan, 2007). Working capital management efficiency actually boosts cash flow to the firms, which sequentially boosts the return to the investors and growth opportunities for the companies. Working capital management is an incessant function associated with the continued existence of firms. In fact, companies in which working capital management is not accorded due deliberation cannot continue to exist for longer periods (Dong & Su, 2010). It is against this background, that present study seeks to establish the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE.

1.1.6 Nairobi Securities Exchange

The stock market and financial sector are important players in the development of the economy of the country. A capital market, which is functioning efficiently, enhances growth, investment, and economic efficiency. Thus, the financial performance of the listed firms is critical to the performance of the stock market and the economy of the country generally (Ngugi *et al.*, 2009). There is only one stock market in Kenya namely Nairobi Securities Exchange (NSE) established in 1954. The NSE has categorized the listed companies listed into 11 sectors consisting of automobiles and accessories sector, agricultural sector, banking sector, insurance sector, construction and allied sector commercial and services sector, manufacturing and allied sector, energy and petroleum sector, investment sector, investment service sector, and telecommunication and technology sector (see Appendix I).

To end failures of businesses, companies listed at the NSE should be financially health (Ngugi *et al.*, 2009). Despite the fact that there are about 61 firms listed in NSE, some of them are not in sound financial position. At the point of listing, companies have to fulfill rigorous listing requirements. However, with time the company's financial status and direction of the business may change for better or worse. This may be due to changes in management, governance, risk profile, or financial appetite (Maina & Sakwa, 2012). The analysis of the annual reports of companies listed at the NSE (2015) shows that some companies do not pay dividends regularly, and when they pay, the level of payout is very small against the expectations of the shareholders.

There is an increasing trend of failure of Kenyan firms where A Baumann and Company, KCC, Nyaga Stock Brokers, Bulk Medical Limited, and Uchumi chain of supermarkets are examples of such firms (Maina & Sakwa, 2012). According to the NSE (2010), the

Capital Markets Authority (CMA) has put under statutory management several public and private companies. These companies include the Standard Assurance (2009), Kenya Planters Co-operative Union (KPCU) (2010), Hutchings Beimer (2010), Uchumi Supermarkets (2006), Invesco Assurance (2008), Pan Paper Mills (2009), and Uchumi Supermarkets (2006). Uchumi Supermarket Limited Annual Report (2005) reported that the company had a tight cash flow position that made it difficult for the company to maintain supplier relations and consistent supplies. This condition led to loss of customers to competition and worsened the cash flow position, which resulted into receivership. It is therefore important investigating the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE.

1.2 Statement of the Problem

Various stakeholders including the shareholders, lenders, suppliers, and government have invested greatly in the listed firms by providing financial resources and favorable business environment (Ngugi *et al.*, 2009). Consequently, these stakeholders are hopeful of good financial performance among listed firms and, indeed, some companies have performed well while others have experienced decline in financial performance. The regulator has delisted some companies such as CMC Holdings from the NSE due to financial causes (Chebii *et al.*, 2011). Besides, the regulator has put a number of public and private companies such as Hutchings Biemer and A Baumann under statutory management (Nairobi Securities Exchange [NSE], 2010). To exemplify, the Capital Markets Authority put Uchumi Supermarkets Limited under receivership between July 2006 and March 2010 due to its inability to pay suppliers (Michira, 2015). Besides, supermarket chain sought a bank in loan 500 million Kenyan Shillings in 2015 to pay its suppliers (Masinde, 2015). Remarkable efforts to revitalize the companies in poor financial health have paid attention to financial reorganization (Kibet, Kibet, Tenei &

Mutwol, 2011). However, poor short-term financing decisions are largely the cause of many of the predicaments faced by the companies put under statutory management (Chebii *et al.*, 2011). This state of affairs has led to loss of wealth and confidence investors in the stock market in Kenya (Maina & Sakwa, 2012).

Corporate managers often overlook working capital, which encompasses short-term financing and investments, when making financial decisions (Ray, 2012). Because of that, studies on short-term financing decisions have received less attention from empirical evidence (Sharma & Kumar, 2011; Mwangi, Makau & Kosimbei, 2014). Nonetheless, the existing studies on the effect of short-term financing decisions on financial performance of listed non-financial firms have produced varied results (Falope & Ajilore, 2009; Mihajlov, 2012; Nyamweno & Olweny, 2014; Khan, Rasheed, Ahmed & Rizwan, 2016). Most of the existing studies have focused on the direct effect of short-term financing decisions on firm performance (Nyabwanga *et al.*, 2012; Langroudi, Biabani & Somesaraei, 2013; Hassan, Imran, Amjad & Hussain, 2014). Furthermore, the studies carried out in Kenya have not addressed the relationship between short-term financing decisions and financial performance comprehensively. For instance, Mwangi *et al.* (2014) considers short-term financing decisions in terms of aggressive/conservatism working capital management policies while Mathuva (2010) considers short-term financial management in terms of the operating cycle. On the other hand, Nyambwaga *et al.* (2012) viewed working capital in terms of efficiency of cash, inventory, and receivables management.

In consequence, the discrepancies in the findings on the same subject have motivated the present study. The present study explores not only the direct effect of short-term financing decisions on financial performance but also the intervening process that link

short-term financing decisions and financial performance of non-financial firms listed at the NSE using panel data for 14 years period ranging from 2001 to 2014. Further, the study examines the interaction effect between the various components of short-term financing decisions. Finally, the study investigates the moderating effect of firm characteristics on the relationship between short-term financing and financial performance of non-financial firms listed at the NSE. The study, therefore, takes a holistic approach in evaluating the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE, Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

To determine the effect of short-term financing decisions on financial performance of non-financial firms listed at the Nairobi Securities Exchange, Kenya.

1.3.2 Specific Objectives

The specific objectives of the study are:

- i. To determine the effect of Inventory Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.
- ii. To establish the effect of Accounts Receivable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.
- iii. To determine the effect of Accounts Payable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.
- iv. To establish the effect of Cash Conversion Cycle Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.

- v. To establish the interaction effect of Short-Term Financing Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.
- vi. To determine the mediating effect of Cash Holdings on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya.
- vii. To establish the moderating effect of Firm Characteristics on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya.

1.4 Research Hypotheses

The study seeks to test the following null hypotheses:

H₀₁: Inventory Turnover Decisions have no significant effect on Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₂: Accounts Receivable Turnover Decisions have no significant effect on Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₃: Accounts Payable Turnover Decisions have no significant effect on Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₄: Cash Conversion Cycle Decisions have no significant effect on Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₅: There is no significant interaction effect between Inventory Turnover Decisions, Accounts Receivable Turnover Decisions, and Accounts Payable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₆: Cash Holdings do not have significant mediating effect on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya.

H₀₇: Firm Characteristics do not have significant moderating effect on the relationship between Short-Term Financing Decisions and Financial Performance of firms listed at the NSE, Kenya.

1.5 Significance of the Study

The study has brought to light matters regarding short-term financing decisions. It informs the government policy interventions on how to spur growth of businesses in Kenya. The findings of the current study would guide the corporate managers of non-financial firms listed at the NSE on how to promote sound business environment especially during economic instability times, which could in result in job creation in the economy.

It is constantly a challenge for the chief executive officer of a firm to determine the optimum level of working capital. The study therefore, has suggested various short-term financing strategies the managers can use to measure the performance of their companies in terms of financial performance. By understanding the relationship between short-term financing decisions and financial performance, the management is able to plan their working capital strategies based on working capital management policies that enhance profitability.

The study has attempted to contribute to the growing body of knowledge in financial management on the interaction effect of short-term financing decisions on corporate financial performance. The study also attempts to contribute to the theory of finance by testing the mediating effect of cash holdings on the relationship between short-term

financing decisions and financial performance of firms. Further, the study tests the moderating effect of firm characteristics on the relationship between short-term financing decisions and financial performance of firms.

1.6 Scope of the Study

The study has focused on the effect of short-term financing decisions on financial performance. In this regard, the study has covered the non-financial firms listed at the NSE, Kenya. The study is further confined itself to a period of 14 years ranging from 2001 to 2014. The banking, insurance, insurance, some commercial and service firms and telecommunication firms are disqualified from the study due to their distinctive characteristics, such as liquidity and financing rules by the Central Bank of Kenya and the requirements of the Banking Act, which do not pertain to other firms (Pratheepkanth, 2011). The study on short-term financing decisions is further restricted to inventory turnover decisions, accounts receivable turnover decisions and accounts payable turnover decisions.

1.7 Organisation of the Study

This study is organised into five chapters. The first chapter presents the background of the study, the statement of the problem, the objectives of the study, research hypotheses, scope of the study, and significance of the study in that sequency. The second chapter reviews the theoretical and empirical literature on the study topic, identifies the research gaps and presents the conceptual framework. The third chapter describes the research methodology that has been utilised to achieve the objectives of the study. The fourth chapter presents and discusses the results of the analysis of data. The fifth chapter presents the summary, conclusions, policy recommendations, contribution to knowledge, limitations and delimitations of the study, and areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical review, empirical review, summary of research gaps and the conceptual framework. The theoretical review provides an overview of theories underpinnings of the study. The empirical review gives a critical review of related studies on short-term financing decisions and financial performance. The conceptual framework depicts the relationship between short-term financing decisions and financial performance hence demonstrating the researcher's conceptualization of the variables investigated in the study. The study has identified the research gaps for contextualizing the current study based on the literature review.

2.2 Theoretical Review

The precautionary motive theory, financing advantage theory, liquidity theory, pecking order theory, and the free cash flow theory underpin the study. The precautionary motive theory attempts to explain the reason why firms keep inventory and its relationship with profitability. On the other hand, the transactions cost theory explains the widespread use of trade credit (accounts receivable) and financial performance. The liquidity theory tries to explain companies resort to suppliers' credit as a source of finance while the pecking order theory links short-term financing decision components with cash holdings and ultimately firm performance. Finally, the free cash flow theory explains the reasons why managers hold cash.

2.2.1 Precautionary Motive Theory

The first version of this theory is that higher inventory holding period circumvents the possibility of a stock out situation (Wen, 2003), which could result in the decline of

profitability. A stock out is a situation whereby a company runs out of stock and it has a disastrous effect on the profitability of a company because a company devoid of stock may lose its goodwill (Bhattacharya, 2008). The absence of inventory pushes both current and potential customers away to competitors. This not only affects both current and future profitability of the company, as it leaves an appalling reputation about the company. Wen (2003) argues that the stock out avoidance theory hold more truth than any other theories explaining the association between inventory holding period and profitability.

Another version of the precautionary motive hypothesis proposes a higher performance because of an enlargement in the inventory-holding period given the vagueness in the lead-time of delivery (Modigliani, 1957). Even though companies may have a contractual agreement with suppliers in terms of delivery of inventory, unforeseen circumstances can cause a delay in the delivery. A holdup in the delivery can end result in loss of prospect for potential sales, which condenses the profitability of a business. The normal lead-time period also means that companies must hoard inventory in-between the time of placing a new order and the time of receiving inventory in the store. Due to the uncertainty in lead-time and the time gap between placing an order and receiving inventory, companies are required to keep a safety or buffer stock (Blinder & Maccini, 1991). The precautionary motive theory suggests a positive relationship between inventory holding period and financial performance. Based on the arguments of the precautionary theory, therefore, this study seeks to establish whether increasing the inventory-holding period has any effect on the financial performance of non-financial firms listed at the NSE. The study also investigates the nature of such an effect.

2.2.2 Financing Advantage Theory

Schwartz (1974) first proposed the financing advantage theory of trade credit. According to the theory, the supplier might have an advantage over financial institutions in screening the credit worthiness of his customers, over and above a greater aptitude to observe and compel repayment of the credit. This could provide him a cost benefit over traditional lenders in advancing trade credit to a purchaser. This theory predicts a positive relationship between accounts receivable period and financial performance because suppliers assume the position of financial institutions and therefore extend finance to customers in the form of higher credit sales. The financing advantage theory sees the granting of credit purely on financial grounds, therefore viewing trade credit as a substitute for institutional financing (Bhattacharya, 2008).

There are no less than three basis of cost advantage. The first argument is that suppliers have a number of advantages above financial institutions (Jain, 2001). Suppliers are able to shrink the information asymmetry between the customer and themselves, thereby reducing the rate of default. Suppliers are in the best position to evaluate the credit worthiness of their customers because of the constant and continuous trading relationship. They are also in the better position to monitor their customers than financial institutions because of the frequent trade transactions (Van Der Wijst & Hol, 2002).

The second argument of the financing theory is that the increase in accounts receivable period leads to greater control over customers. This is because a supplier is able to threaten to discontinue supplies should the customer fail to pay. This threat can particularly be plausible if the customer accounts for a small segment of the supplier's sales. By contrast, a financial institution could have restricted control since the threat to vacate future finance may well have modest direct effect on the buyer's operations

(Petersen & Rajan, 1997). According to Garcia-Teruel and Martinez-Solano (2010), the control over customer becomes even more vital when there are a small number of suppliers in the market. Because in this instance customers will be, weary of a default due to lack of supplies from another source. McMillan and Woodruff (1999) contend that the control even becomes stronger if the supplier is a member of an association and the grouping en bloc can make those sanctions.

The final argument is that suppliers have more effective and quicker ways to collect and sell assets of defaulting customers, especially, in the case of durable goods it is easier to repossess and sell them. The more durable the merchandise supplied the superior security they offer and the better the credit the dealer is capable of providing (Mian & Smith, 1992). The financial theory of accounts receivable may improve companies' profitability because it will forge a good supplier-customer relationship. A good supplier-customer relationship may enhance profitability because it guarantees future sales. In addition, it will lead to increase in profitability because it will entice customers to purchase more (Petersen & Rajan, 1997). Based on the transaction costs theory, the present study seeks to establish the effect of accounts receivable turnover decision on financial performance of non-financial firms listed at the NSE, Kenya.

2.2.3 Liquidity Theory

This supposition, first recommended by Emery (1984), propose that credit rationed firms make use of more trade credit more than those with access to credit from financial institutions. The essential position of this proposal is that when a company is financially inhibited, trade credit can compensate for the decrease of the credit from financial institutions. In agreement with this observation, those businesses boasting excellent liquidity or superior access to capital markets can fund those that are starved of credit.

Another variation of the liquidity theory is that companies with negative cash flow or fallen sales are most likely to request for trade credit (Petersen & Rajan, 1997). Following the aforementioned argument therefore, in times of restricted monetary policy, trade credit make amends for the decline in credit from financial institutions. Due to the negative correlation between financial institution lending and trade credit, an excellent affiliation with banks curbs the exploitation of trade credit (Bastos & Pindado, 2007).

The liquidity theory explains the relationship between accounts payable and company profitability. This is because a company with liquidity problems may delay payment to suppliers in order to use that money to settle other expenses as and when they fall due, which may improve profitability (Nilsen, 2002). Thus, trade credit is a substitute for institutional financing. Given that, financially unrestrained firms are less likely to require trade credit and more likely to advance it, and therefore, a negative relationship between access of a purchaser to other sources of funding and trade credit utilization is projected (Petersen & Rajan, 1997). Berk, DeMarzo and Harford (2009), points out that a company ought to select to borrow by means of accounts payables on condition that it is the inexpensive basis of financing. The liquidity theory suggests a positive relationship between accounts payable and financial performance. Based on the arguments of the liquidity theory, this study seeks to determine the effect of accounts payable on financial performance of non-financial firms listed at the NSE, Kenya.

2.2.4 Pecking Order Theory

According to Myers and Majluf (1984), pecking order presumption supports for an order in the selection of finance owing to diverse levels of asymmetry and agency costs present in different sources of funding. The supposition suggests that companies ought to first fund investments with internal funds, then with secure debt, followed by chancy debt and

lastly with equity to lessen the unfavorable pointers that might be produced. The theory further opines that businesses do not have optimal cash holdings except cash is a bulwark between preserved earnings and investment requirements (Ferreira & Vilela, 2004). This furthermore implies that when a company raises its internal funds, its leverage falls. As a companies go on with maintaining an excess of internal funds for the intention of decreasing undesirable selection costs, it amasses surplus cash, which it employs to pay off its debts when they fall due. Thus, working capital constitutes obtainable internal source of funding which can serve as an alternating source of funding to external funding (Opler, Pinkowitz, Stulz & Williamson, 1999).

Almeida *et al.* (2004) affirm that working capital can be a replacement for cash and the alterations in net working capital influences the cash holdings. In addition, the alterations in short-term debt might be a surrogate for cash, as company could exercise short-term debt as financial source. Shin and Soenen (1998) indicate that the efficient management of working capital by firms reduces the requirement for external financial support and the healthier financial performance. External finances may be very expensive thanks to floatation costs and the problem of asymmetric information. Additionally, the high amount of cash stock amplifies problems of opportunism and agency, causing an inefficient use of the resources and, therefore, adversely affecting firm performance (Lau & Block, 2012). It is against this background that the study sought to establish the mediating role of cash holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE, Kenya.

2.2.5 Free Cash Flow Theory

The Free Cash Flow Theory by Jensen (1986) presuppose that managers mount up cash so as to augment the amount of resources they can be in command of and to get

unrestricted authority over the investment decisions of the firm. Hence, managers fancy to cling to more cash and soaring amounts of investment in working capital to lessen the investment risk of the firm so as to reduce the likelihood of insolvency and consign excess import to deterrent motivation of holding cash (Opler *et al.*, 1999). Amassing of cash and having a bulky collection of liquidity accessible when wanted throughout the working capital cycle decreases the anxiety on the managers to execute their responsibilities efficiently and permits them to select projects that make them contented however may not necessarily keep shareholders pleased (Drobotz, Gruninger & Hirschvogel, 2010). Moreover, the managers are not subject to scrutiny of the capital markets when funding new projects internally because they do not have to get new funds externally, which could as well be very costly (Ferreira & Vilela, 2004).

There several implications derived from the Free Cash Flow theory. Companies with larger agency problems are inclined to build up cash and have exceedingly liberal working capital policies to facilitate adequate liquidity even if they do not have excellent investment prospects. Thus, cash holdings increase mostly in firms with soaring free cash flows produced and well-established management, which does not face a great deal of demands to pay out the amassed cash holdings to shareholders in form of dividends (Bates, Kahle & Stulz, 2009). Such firms might in fact be sloppy in collecting its accounts receivables and may markedly invest in inventories, as the demands are not there to free the cash and heighten exploitation of it (Jensen, 1986). Opler *et al.* (1999) points out that business might be holding surplus cash with the intention of shielding themselves from superfluous takeover endeavors and that these firms may be more hard to assess as a result of liquidity. Equally, firms may have high levels of investments in working capital. It is against this backdrop that the study sought to determine the mediating role of cash

holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE, Kenya.

2.3 Empirical Literature Review

Many researchers and scholars alike have studied short-term financing decisions from different standpoints and in different environments. This section reviews studies on the effect of short-term financing decisions on the financial performance of listed firms. The section also presents an empirical review on the mediating effect of cash holdings as well as the effect moderating effect of firm characteristics.

2.3.1 Short-Term Financing Decisions and Financial Performance

Bagh, Nazir, Khan and Razzaq (2016) explores the impact of working capital management on performance of 50 non-financial listed in Karachi Stock Exchange (KSE) for the period ranging from year 2005 to 2014. The firm performance as indicated by return on asset (ROA), return on equity (ROE) and earning per share (EPS) has been used as dependent variable. The results of multiple regression articulates that the Average Payment Period, inventory turnover and Cash Conversion Cycle have negative and significant impact on ROA but Average Collection Period has positive and significant impact on ROA. The results also indicates that Average Payment Period has negative significant impact on ROE while Inventory Turnover has negative significant impact on EPS. The results further show that Average Collection Period has positive and statistically significant impact on. The study, however, has been carried out in Pakistan, which has different economic, social, and political structures from those prevailing in Kenya.

Khan, Rasheed, Ahmed and Rizwan (2016) investigates the impact of working capital management on firm financial performance of 38 listed firms of non-financial sector of

Pakistan for the period of five years from 2011 to 2015. Financial performance has been measured by the gross profit margin (GPM), return on assets (ROA) and return on equity (ROE). The results show that Average Collection Period has positive and highly significant impact on GPM and ROA but it has insignificant impact on ROE. The impact of Average age of inventory and Average payment period on GPM and ROA is positive but insignificant. The results also indicate that only Average Payment Period has positive and significant impact on ROA. This study, however, adopts Pooled ordinary least squares (OLS) regression model. As argued by Baum (2006), pooled OLS regression can have a complicated error process such as heteroskedasticity across panel units and serial correlation within panel units. The study has taken a decision in this thesis to consider only the fixed and random effect models due to severe limitations of pooled OLS regression model.

Takon and Atseye (2015) investigate the effect of working capital management on profitability of Nigerian listed companies during the period 2000–2009. The study utilizes panel data, pooled OLS regression, and fixed effects. The results show that Cash Conversion Cycle has a negative and significant effect on financial performance as measured by Return on Assets (ROA). The results further indicate that Accounts Receivable has a significant negative effect on Return on Assets of Nigerian firms. Inventory shows a significant negative effect on profitability. Growth Opportunities, Firm Size, and Leverage have significant positive effect on ROA. This study, however, uses ROA as the only measure of performance. Saeedi and Mahmoodi (2011) argue that it would be improper to employ one indicator of financial performance or even a composite index, as this would confer a deceptive conclusion about the correlation between the variables. The present study therefore, uses both accounting profit and market valuation as measures of firm performance.

Salempour and Vaez (2015) establishes whether working capital management has significant effect on company's profitability. To this end, using data for 471 companies listed on Tehran Stock Exchange during 2002–2013, and two models are. They use correlations analysis, and the fixed effects regression models. The research findings shows that Working Capital Management Components namely Inventory Holding Period, Account Receivables Period and Account Payables Period have effect significant inverse effect on profitability as measured by Return On Assets (ROA). The study, however, has been carried out in Iran, which has different economic, social, and political structures from those prevailing in Kenya. It is, therefore, necessary to test these conclusions in the Kenyan market context.

Hoang (2015) investigates the relationship between working capital management and profitability of 98 manufacturing firms listed on Ho Chi Minh City Stock Exchange, Viet Nam for 6 years period from 2009 to 2014. The results of Pearson's correlation and fixed effects multiple regression analysis found significant negative relationships between average inventory period, average payment period, average collection period, net trade cycle, cash conversion cycle and Return on Assets. Further, the control variables including liquidity, leverage, firm size and firm growth also have significant effect on firm profitability. The study however, has covered a limited period, which does not allow meaningful conclusions, and the macro-economic conditions in Vietnam could be different from those prevailing in Kenya.

Nyamweno and Olweny (2014) investigate the effect of working capital management on performance of 27 firms listed at the Nairobi Securities Exchange, Kenya for the period 2003 to 2012. The Generalized Method of Moments (GMM) regression model results reveal that cash conversion cycle and days of accounts receivables have an indirect but

insignificant effect on performance measured by gross operating profit. The days in inventory and accounts payable in days have a direct significant effect on performance. Firm size and Inflation variables have significant direct and indirect effect on performance respectively. This study, however, has not considered the interaction effect of short-term financing decisions on financial performance. The study has also failed consider the mediating effect of cash holdings on the relationship between short-term financing decisions and financial performance which is the subject matter of the current study.

Hassan, Imran, Amjad and Hussain (2014) investigates the effect of working capital management on performance of non-financial listed firms in Pakistan using pooled ordinary least squares. The data is obtained from the financial statements of non-financial firms listed on the Karachi Stock Exchange, Pakistan during period between 2007 and 2010. The study utilizes three measures of performance namely return on asset (ROA), return on equity (ROE) and gross profit margin. The empirical results indicate that the average collection period has significant positive effect on gross profit margin and a negative effect on return on assets but the effect is not significant. However, average payment period has significant positive effect on return on equity. Nonetheless, the study failed to appreciate the interaction effect of short-term financial decisions on financial performance.

Gachira, Chiwanzwa, Nkomo and Chikore (2014) examines the impact of working capital management on the profitability of 39 non-financial firms listed on the Zimbabwe Stock Exchange (ZSE) for the period between 2009 and 2013. The regression results show that debtors' days has positive but not significant effect on profitability as measured by return on assets. The study also shows that creditors' days has significant negative effect on

profitability while cash conversion cycle has positive but insignificant effect on profitability. The results further reveal that natural logarithm of sales and inventory turnover days have significant positive effect on profitability. The study, however, covers a short time horizon, which is too short, and macro-economic conditions in Zimbabwe could be different from those prevailing in Kenya given the fact that the Zimbabwean economy has been operating under the multicurrency system.

Mwangi, Makau, and Kosimbei (2014) investigate the effect of working capital management on the performance of 42 non-financial companies listed in the Nairobi Securities Exchange (NSE), Kenya for the period 2006-2012. Feasible Generalized Least Square (FGLS) regression results reveal that an aggressive financing policy has a significant positive effect on Return on performance as measured by Assets and Return on Equity while a conservative investing policy a significant positive effect on performance. However, the study considers short-term financing decisions in terms of aggressive/conservatism working capital management policies. The current study considers all the three components of short-term financing decisions namely inventory turnover, accounts receivable turnover and accounts payable turnover decisions. Ban˜os-Caballero, Garcı'a-Teruel, and Martı'nez-Solano (2012) underscore the importance of considering the three components at the same time because they influence each other as well as firms' profitability and value.

Langroudi, Biabani, and Somesaraei (2013) examine the effect of working capital management on performance of firms listed on Tehran Stock Exchange for the period from 2006 to 2011. Using fixed and random effects, and generalized methods of moments, this study finds that profitability as measured by GOP and Tobin-Q is affected positively by cash conversion cycle. However, the effect on Tobin-Q is not significant.

The results also reveal a significant positive relation between gross operating income and the number of day's inventory. Finally, size of the firm and financial leverage have significant positive effect on firm performance as measured by GOP and Tobin-Q. However, the study has not considered the mediating effect of cash holdings in their model as well as the moderating effect of firm characteristics.

Nzioki, Kimeli, Abudho, and Nthiwa (2013) analyze the effect of working capital management on the profitability of six manufacturing firms listed on the NSE for a period of 5 years from 2006 to 2010. The multiple regression and correlation results from the analysis reveal that average collection period and average payment period have significant positive effect on gross operating profit (GOP). Nevertheless, cash conversion cycle has significant negative effect on GOP. The effect of inventory turnover in days on GOP is insignificant. The study, however, has focused on the manufacturing sector alone. The present thesis therefore, covers all non-financial firms listed at the NSE to determine the effect of short-term financing decisions on financial performance.

Napompech (2012) examine the effects of working capital management on profitability. The regression analysis is based on a panel sample of 255 companies listed on the Stock Exchange of Thailand from 2007 to 2009. The study suggests that managers could improve the profitability of their businesses by reducing the cash conversion cycle, inventory conversion period, and receivables collection period. However, they cannot amplify profitability as measured by Gross Operating Profits (GOP) by increasing the payables deferral period. The findings also demonstrates that industry characteristics have an impact on gross operating profits. However, the period covered is too short to establish meaningful patterns among the data. The current study covers a period of fourteen years from 2001 to 2014.

Vahid, Elham, Mohsen and Mohammadreza (2012) studies the effect of working capital management over the performance of 50 firms Listed in Tehran Stock Exchange (TSE) during the time period between 2006 and 2009 by using OLS multiregression model. The results shows that there is a negative and significant relationship between the variables of Average Collection Period, Inventory Turnover in day, Average Payment Period, Net Trading Cycle and the performance. There are no evidences to prove the existence of a significant relationship between Cash Conversion Cycle and the companys' performance as measured by NOP. The study by Vahid *et al.* (2012), however, has been carried out in Iran, which has different economic, social, and political structures from those prevailing in Kenya. It is, therefore, necessary to test these conclusions in the Kenyan context.

Nyabwanga, Ojera, Lumumba, Odondo, and Otieno (2012) investigate the effect of working capital management practices on the financial performance of 113 small-scale enterprises (SSEs) in Kisii South District, Kenya. The study has adopts a cross-sectional survey research design and questionnaires to collect primary data. The study reveals that efficiency management of cash, receivables, and inventories have significant positive effect on financial performance. However, the study relies on biased primary qualitative data to study the effect of working capital management practices on financial performance. The present study measures the relationship between Short-term financing decisions and financial in terms of WCM components using secondary quantitative data. The findings of the study by Nyabwanga *et al.* (2012) also require validation and among non-financial firms listed at the NSE, Kenya.

Mihajlov (2012) investigates the effect of accounts receivables on financial performance of 108 firms listed at the regulated market in the Republic of Serbia during the recession period between 2008 and 2011. The study shows that the relationship between accounts

receivables financial performance as measured by Return on Assets (ROA) and operating profit margin is positive but not significant. This suggests that effect of account receivables on financial performance of a firm varies in times of a crisis. However, these findings may not apply to a non-crisis period.

Sharma and Kumar (2011) examine the effect of working capital on profitability of Indian firms. The data is obtained from 263 non-financial firms listed at the Bombay Stock (BSE) from 2000 to 2008 and analyze the data using Ordinary Least Squares (OLS) regression model. The study shows that numbers of day's accounts payable and inventory of number of days have significant negative effect on firm profitability, while number of days accounts receivables and cash conversion period have significant positive effect on corporate profitability as measured by return on assets (ROA). This study however, contradicts other studies (Mathuva, 2009; Langroudi *et al.*, 2013; Gachira *et al.*, 2014; Nyamweno & Olweny, 2014). These contradictions in the findings on the same subject have motivated the present study, which examines the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE, Kenya.

Mathuva (2010) examines the influence of working capital management components on corporate profitability of 30 firms listed on NSE for the periods 1993-2008. The results of the pooled ordinary least squares and the fixed effects regression models show a highly significant negative relationship between the time it takes firms to collect cash from their customers and profitability. The study further reveals that there exist a highly significant positive relationship between the inventory conversion period and profitability. Finally, the study established that there exists a highly significant positive relationship between the average payment period and profitability. The relationship between firm size and financial performance is found positive and significant while leverage is negatively

related to financial performance. However, the study has used Gross Operating Profit as the only measure of financial performance. For robustness of the analysis, this study uses three measures of financial performance namely Return on Assets (ROA), Return on Equity (ROE), and Tobin-Q (TQ). In addition, the study considers the moderating effect of firm characteristics on relationship.

Falope and Ajilore (2009) investigate the relationship between WCM components and profitability of 50 quoted companies in Nigeria for the period between 1996 and 2005. The study shows that the inventories holding period, accounts receivable period, and cash conversion cycle have significant negative effect on profitability measured by Return on Assets. They have translated the negative coefficient of the inventory-holding period to denote blocking the inventory in working capital cycle affects profitability adversely. On the negative effect of accounts receivable period, they contend that a more restrictive credit policy potentially improves profitability. They also conclude that the negative coefficient of cash conversion cycle shows that firms that are more profitable minimize their cash conversion cycle. Finally, their results indicate that accounts payable period has a significant positive effect on profitability. However, the study has not considered the effect of the interaction terms in their model as well as the moderating effect of firm characteristics.

2.3.2 Mediating Effect of Cash Holdings

Rashvand and Tariverdi (2015) investigate the effect of working capital management on operating cash flow of 184 companies listed on Tehran Stock Exchange during the period 2009–2013. Using the fixed effect regression model to test the hypothesis, the results show that the current ratio has a significant effect on the operating cash flows of the companies. They explain that by increasing liquidity level, the company is able to fulfill

its obligations before third parties, and to expedite the value chain of the company that includes purchasing raw material, transferring raw materials for production, producing, and finally selling productions and receiving cash. This result is in agreement with the results reported by Nobanee (2010). The current study extends the study by Rashvand and Tariverdi (2015) by considering the mediating effect of cash holdings on the relationship between various short-term financing components and financial performance.

Abushammala and Sulaiman (2014) examines the effect of cash holdings level on firms' profitability using a panel data of 65 non-financial firms listed in Amman Stock Exchange (ASE) during the period from 2000 to 2011. The regressions results show a positive significant relationship between cash holdings and profitability as by Return on Assets (ROA), Return on Equity (ROE) and Earning per Share (EPS). This means that a good financial performance of the firm is an outcome of vast corporate cash holdings. Palazzo (2011) also finds evidence of a positive relation between expected return on equity and cash holdings, however, the study by Wang (2002) which examines the relationship between liquidity and firm profitability of Japanese and Taiwanese listed firms and establishes the existence of a negative and significant relationship between liquidity and profitability.

Anabestani and Shourvarzi (2014) assess the relationship between cash holdings, firm value, and corporate governance of 99 listed companies on Tehran Stock Exchange over a 6-year period from 2006 to 2011. The regression results indicate that there is no significant relationship between cash holdings and firm value. This finding contradicts the study by Raheman and Nasr (2007) using a sample of 94 Pakistani listed firms, which finds a significant negative relationship between liquid assets and profitability during the

period from 1999 to 2004. These inconsistencies in the previous studies motivate the current study.

Autukaite and Molay (2013) assess the significance of short-term financial decisions to a company's worth by testing whether an extra euro invested in cash or in net working capital is valued at less than one euro. By running panel data regressions, the presented evidence proves that shareholders underrate cash holdings and net working capital. The findings of this study create awareness among managers not to undervalue the value of cash holdings and working capital management. However, this study considers the relationship between cash holding and working capital and firm value separately. The present study considers the relationship between cash holding and working capital and financial performance jointly by considering the mediating effect of cash holdings on the relationship between working capital management components and financial performance.

Yeboah and Agyei (2012) ascertain the relationship between working capital management and bank cash holding in Ghana using panel data covering ten-year period from 1999 to 2008. The random effects results show that while debtors' collection period, cash conversion cycle, capital structure, bank size have significantly negative relationship with the cash position of banks while creditors payment period and profitability have significantly positive relationship with the cash position of banks in Ghana. However, the researcher cannot generalize these findings to non-financial companies as Central Bank of Kenya and banking regulations monitor their financing and liquidity. These rules do not concern non-financial firms (Mwangi, *et al.*, 2014). Thus, the current study investigates the mediating effect of cash holdings on the relationship between short-term financial decisions and financial performance of non-financial firms.

Prahalathan (2010) investigates the relationship between working capital management and cash holding of 30 manufacturing companies listed in the Colombo Stock Exchange Market, Sri Lanka for the period of 2003 to 2007. Cash holding of the firm measured by the liquid fund to total assets is the dependent variable. The results show that relative day of sales inventory has significant negative effect on cash holding while sales outstanding and days' payable outstanding have significant positive effect on cash holding. The current study extended the study by Prahalathan (2010) by investigating the intervening effect of cash holdings on the relationship between various aspects working capital management and financial performance.

Abel (2008) examines 13,287 manufacturing SMEs in Sweden and establishes that management efficiency speeds up the conversion of current assets into cash resulting in high cash holdings. On the other hand, Capkun and Weiss (2007) scrutinizes the operating assets and cash holdings of manufacturing firms in US for the period 1980–2005 and determines a reduction in operating assets and enhancement in cash holdings. They explicate the enhancement of corporate cash holdings because of reduction in inventory and the boosting in accounts payable raises exposure to trade credit risk. The current study extends the study by Abel (2008), Capkun, and Weiss (2007) by incorporating cash holdings as a moderating variable on the relationship between short-term financing decisions and financial performance. The studies also focused on only one sector. The present study covers all non-financial firms listed at the NSE.

2.3.3 Moderating Effect of Firm Characteristics

Zariyawati, Annuar, and Pui-San (2016) provide evidence regarding the determinants of working capital management among small and large firms listed on the Bursa Malaysia Stock Exchange for 2009 to 2013 period. Results of random effects model demonstrate

that firm leverage, firm performance, capital expenditure, operating cash flow, executive compensation and economic conditions are the most significant determinants working capital management. The current study extends the study by Zariyawati *et al.* (2016) by considering the moderating effect of firm size, financial leverage and growth opportunities on the relationship between short-term financial decisions and financial performance.

Azeem and Marsap (2015) investigates the factors determining the working capital requirements in Pakistani non-financial companies listed at Karachi Stock Exchange over a period of six years (2004–2009). A Pooled Ordinary Least Square (OLS) regression results indicate that return on assets, leverage and firm size is negatively and significantly related to working capital requirements of a firm whereas sales growth is positively and significantly related to working capital requirements. The current study extended the study by Azeem and Marsap (2015) by considering the moderating effect of firm characteristics namely firm size, financial leverage and growth opportunities on the relationship between short-term financial decisions and financial performance.

Wasiuzzaman and Arumugam (2013) examine the determinants of the level of investment in net operating working capital of 192 firms in Malaysia spanning a period of 8 years (2000–2007). The OLS regression results reveal that during period of economic growth, smaller and younger businesses with fewer tangible assets, soaring sales growth, modest leverage, less explosive revenues, elevated operating cash flows and low levels of asymmetric information are likely to have the highest investments in working capital. The current study extends the study by Wasiuzzaman and Arumugam (2013) by considering the moderating effect of firm size, financial leverage and growth opportunities on the relationship between short-term financial decisions and financial performance.

Iftikhar (2013) determines the determinants of working capital management efficiency of four automotive and five engineering firms listed in Karachi Stock Exchange of Pakistan for 5 years period from 2006 to 2010. The results of the fixed effect model show that explanatory variables have positive and significant on firm's working capital management as measured by CCC. The debt equity ratio and sales growth have positive and negative but insignificant effect on DSI while the Sales Growth has significant negative influence on DSI. The results further show that Debt equity Ratio, Firm Size and Sales Growth have significant effect on DSO. Finally, the Debt equity Ratio and Firm Size show significant positive and negative relationship with DPO respectively while Sales Growth has negative but insignificant effect on DPO. The study however, focused on two sectors only.

Mansoori and Muhammad (2012) investigates the determinants of working capital management of 94 firms listed at Singapore Exchange for 8 years period from 2003 to 2010. The result of random effects show that the size of the firm has significant negative effect on Cash Conversion Cycle (CCC). The results also show that Leverage and growth in sales have significant positive effect on CCC. However, the effect of Leverage on CCC is not significant. The current study extended the study by Mansoori and Muhammad (2012) by incorporating firm characteristics namely firm size, financial leverage and growth opportunities as a moderating variables on the relationship between short-term financial decisions and financial performance.

Zariyawati, Annuar and Sazali (2010) investigates the determinants of working capital management of listed firms in Malaysia for the period 2000-2006. Based on the fixed/random effects model, the results reveal that firm size, debt ratio, growth of the company, and inflation are significantly and negatively related with working capital

management. Economic growth is significantly and positively related with working capital management. The result of the study, however contradicts other studies (Iftikhar, 2013; Wasiuzzaman & Arumugam, 2013). The divergent result gives room for examining the moderating effect of firm characteristics namely firm size, financial leverage and growth opportunities on the relationship between short-term financial decisions and financial performance.

2.4 Summary of Empirical Literature and the Research Gaps

Firstly, the existing studies relating to short-term financing decisions and firm performance have not considered the interactive effect of different short-term financing decisions namely inventory turnover decisions, accounts receivable turnover decisions and accounts payable turnover decisions on firm performance. The studies have failed to consider if the effect of one short-financing decision depends on the value of another short-term financing decision. Friedrich (1982) argues that an interactive model can provide an accurate and more detailed description of relationships in a set of data, increased explanatory power, and an improvement on the prospects for statistically significant results. The present study, therefore, contributes to the knowledge gap by adding a new dimension in the determination of the relationship between short-term financing decisions and firm performance. In addition, this thesis considers the moderating effect of firm characteristics on the relationship between short-term financing decisions on financial performance of non-financial companies listed at the NSE.

Secondly, previous studies only looked at the direct relationship between short-term financing decisions and financial performance but failed to appreciate the mechanism through which the short-financing decisions are able to influence financial performance. The current study, thus, endeavored to bridge this knowledge gap in the literature by

analyzing the mediating effect of cash holdings on the relationship between short-term financing decisions and performance of non-financial firms listed at the NSE, Kenya. According to Peyrot (1996), a mediator variable represents an intervening variable or, stated differently, a mechanism through which an independent variable is able to influence a dependent variable.

Thirdly, studies on the relationship between various short-term financing decisions and performance have produced mixed results. In spite of numerous studies, the exact nature of the relationship between inventory management and firm performance is not clear. Some studies have produced a positive relationship between inventory management and firm performance while others have established a negative relationship. On the relationship between accounts receivable management and performance, some studies indicated a positive relationship while others established a negative relationship. Studies relating account payables turnover and performance have not provided conclusive results either. These inconsistencies in the findings on the same subject have motivated the present study, which examines the effect of short-term financing decisions on performance of non-financial firms listed at the NSE, Kenya.

Fourthly, the review of previous studies has established that the majority of the existing studies on the effect of short-term financing decisions on firm performance have taken place in advanced countries where capital-markets are well established. The capital market in Kenya is comparatively underdeveloped (Ngugi *et al.*, 2009) and therefore, the circumstances in these developed countries could be different from those in Kenya due to different economic, social, and political settings. Also in the past literature on corporate finance has paid more attention to the study of long-term financial decisions (Sharma & Kumar, 2011; Autukaite & Molay, 2013). However, a number of surveys have pointed

out that managers expend substantial time on day-to-day issues that entail working capital decisions (Rao, 1989; Dandapani *et al.*, 1995). Furthermore, the previous studies have failed to establish the trends of short-term financing decisions, firm characteristics, and financial performance of non-financial firms listed at the NSE. This study therefore contributes to the existing literature the evidence on the trends, which shows the movement of the variables under study.

Lastly, few studies have looked at effect of short-term financing on financial performance from investors' point of view and its relevance for investment purposes. While the firm's profitability or accounting profit is an important factor in a management's performance, a direct concern for shareholders is wealth maximization and firm value, which stock performance shows (Bana, 2012). Prior studies on financial performance have recommended the use of multiple measures to improve validity (Sullivan, 1994). Omondi and Muturi (2013) assert that a single characteristic cannot disclose each aspect of performance of a firm. The utilization of a number of indicators, thus, allow a better appraisal of the financial side view of a company. Besides different stakeholders, delineate performance from dissimilar perspectives. Following prior research, financial performance is measured by combining three widely used measures namely Tobin Q as a proxy for market value, while return on asset and return on invested capital are used as the proxies for profitability.

2.5 Conceptual Framework

The conceptual framework represents the conceptualisation of the researcher concerning the interactions between the variables of the study. Previous studies led support to the significant relationship between short-term financing decisions and financial performance. However, this relationship may also be moderated by firm characteristics

and mediated by cash holdings and finally firm characteristics are also included as control variables. This study also hypothesizes that firms listed at the NSE may enhance their financial performance by interacting short-term financing decisions effectively. The framework integrates short-term financing, interaction terms, cash holdings and firm characteristics into a single model as shown in Figure 2.1.

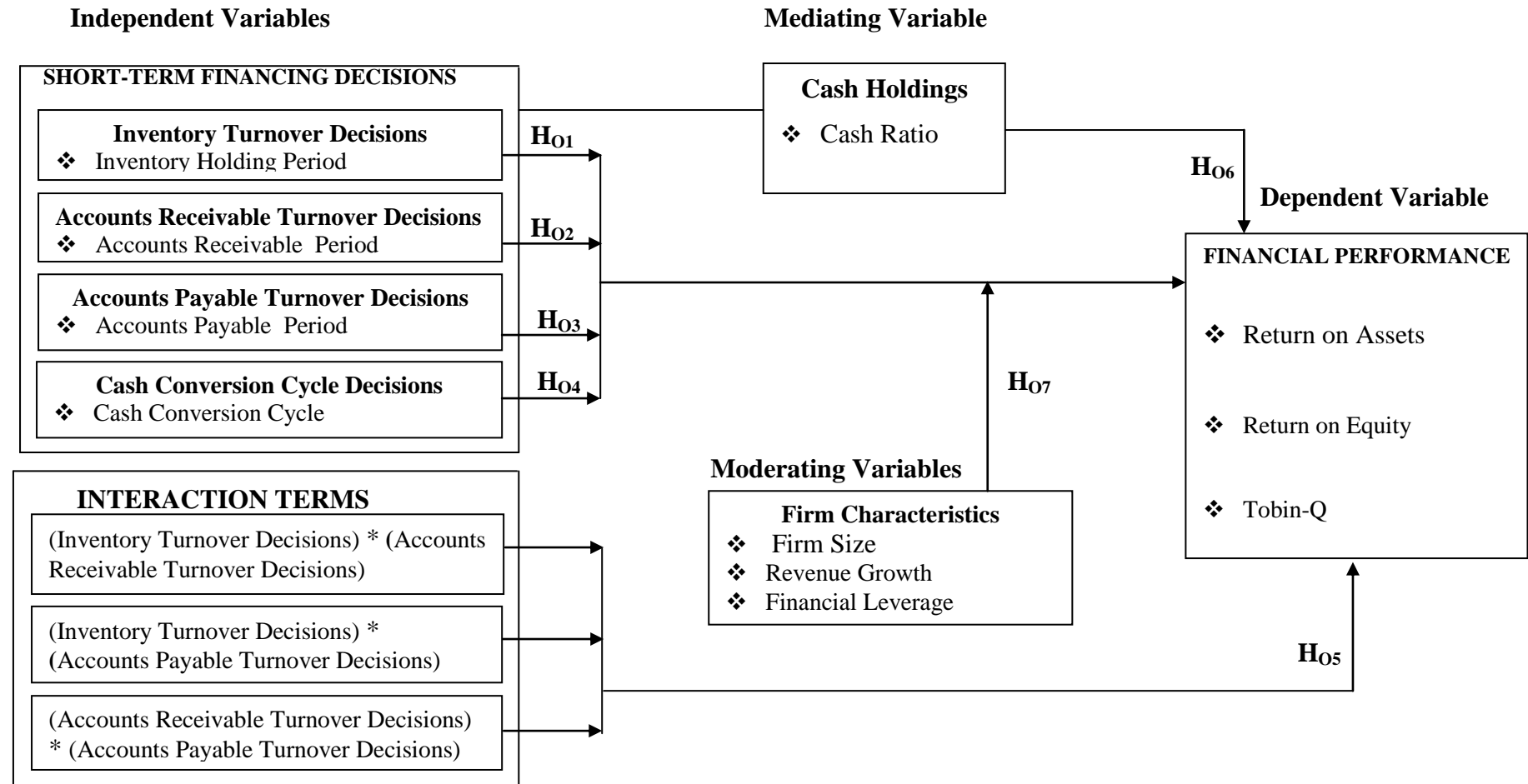


Figure 2.1: Conceptual Framework

Source: Researcher (2016)

From the conceptual framework illustrated in Figure 2.1, financial performance is independently affected by short-term financing decisions which includes inventory turnover decisions, accounts receivable turnover decisions, accounts payable turnover decisions and cash conversion cycle decisions. On the other hand, cash holdings mediates the relationship between short-term financing decisions and financial performance. The study also conceptualized that the variation in financial performance is explained by the interaction between the various short-term financing decisions (interaction terms). Finally, firm characteristics moderates the relationship between short-term financing decisions and firm performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology used to achieve the study objectives. The chapter particularly discusses the research philosophy, research design, empirical model, and operationalization and measurement of variables. It also covers the target population, the sampling design and sample size, and the data collection instruments and procedure. The chapter ends with a description of data analysis techniques and ethical considerations.

3.2 Research Philosophy

The research philosophy entails the development of knowledge and the nature of that knowledge includes imperative suppositions and predisposition about the way in which people view the world (Saunders, Lewis & Thornhill, 2007). The collection, analysis and application of data about an occurrence is informed by the research philosophy adopted. In social sciences, there are two main research philosophies namely phenomenology and positivism (Coopers & Schindler, 2004). Phenomenology is qualitative in nature which is concerned with the acceptable knowledge and how people are able to know reality and use symbols to accurately describe and explain reality. It is based on the belief that knowledge is subjective, which focuses on personal experience and knowledge, and individual interpretations (Saunders *et al.*, 2007). Hatch and Cunliffe (2006) assert that individuals make sense of circumstances based on their individual experiences, expectations and memories.

Positivist philosophy involves the perception of knowledge. It includes theories of what is seen to be identified as knowledge and how new knowledge is reached while ontology addresses the question of perception of the reality and its existence and how people

perceive and influence the social reality (Bryman & Bell, 2011). Positivistic approach towards knowledge views the reality as something external and independent to social actors. Just like natural sciences, knowledge is acceptable when confirmed by the senses. The positivistic stance towards the research is advantageous because it excludes the researchers' personal opinions. The researcher accepts observable objects as knowledge and has a focus upon the causality (Saunders *et al.*, 2009).

The study has considered positivism paradigm as the most appropriate since the study examines the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE by using historical data consisting mainly of numbers. By looking at the nature of numbers, there is little room for subjective interpretations of the results (Bryman & Bell, 2011). The intention is to collect and analyze the companies' figures objectively by using already existing formulae and statistics. The researcher accepts observable objects as knowledge and has a focus upon the causality (Saunders *et al.*, 2009). Moreover, the current study uses existing theories from which the researcher has increased his knowledge and understanding of the study subject and from which the hypotheses have been developed and tested by statistical methods. According to Remenyi (1996), the emphasis within positivism paradigm lies upon quantifiable observations based on statistical analysis.

3.3 Research Design

The study employs explanatory research design, which is non-experimental in nature to analyze the effect of short-term financing decisions on financial performance of firms listed at the NSE, Kenya. The design seeks to explain the causal relationship between variables (Saunders *et al.*, 2009). An explanatory study design is fitting where the investigator is endeavoring to shed light on how the observable fact operates by

2014; X'_{it} denotes a vector of independent variables, β are coefficients to be estimated, α is a constant term, and ε_{it} is a composite error term.

3.4.1 Direct Effect Model

The study has expanded equation 3.1 to obtain equations 3.2, 3.3, and 3.4 for estimating the study variables.

$$ROA_{it} = \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \dots \dots \dots (3.2)$$

$$ROE_{it} = \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \dots \dots \dots (3.3)$$

$$TQ_{it} = \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \dots \dots \dots (3.4)$$

Where:

ROA_{it} = Return on assets of firm i at time t;

ROE_{it} = Return on equity of firm i at time t;

TQ_{it} = Value of firm i at time t;

IHP_{it} = Inventory Holding Period of firm i at time t;

ARP_{it} = Accounts Receivable Period of firm i at time t;

APP_{it} = Accounts Payable Period of firm i at time t;

CCC_{it} = Cash Conversion Cycle of firm i at time t;

$SIZE_{it}$ = Size of firm i at time t;

$GROWTH_{it}$ = Growth of firm i at time t;

LEV_{it} = Leverage of firm i at time t;

α = Constant term;

β_s = Coefficients of explanatory variables;

Subscript i = Firms (cross – section dimensions)ranging from 1 to 26;

Subscript t = Years (time – series dimensions)ranging from 2001 to 2014;

ε_{it} = Composite error term of the model;

3.4.2 Interactive Effect Model

The study testes for the existence of any interaction effect of short-term financing decisions on the financial performance of listed firms at the NSE. To this end, the study has employed the product term interaction-modeling approach recommended by Friedrich (1982) and used by Mwangi *et al.* (2014). The study has achieved this by creating several interactive terms between various variables as depicted in Figure 2.1. Thereafter, ROA, ROE, and Tobin-Q are regressed on the interactions between inventory management and accounts receivable turnover decisions; inventory turnover decisions and accounts payable turnover decisions; and accounts receivable turnover decisions and accounts payable turnover decisions. To determine whether the coefficient of the interaction term is statistically significant, the t -test and the p-values are applied. Hence, to determine the interactive effect of short-term financing decisions of non-financial firms listed at the NSE, the study has formulated three regression equations namely 3.5, 3.6, and 3.7 as follows:

$$\begin{aligned}
 ROA_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
 & + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 [(IHP_{it}) * (ARP_{it})] + \beta_9 [(IHP_{it}) \\
 & * (APP_{it})] + \beta_{10} [(ARP_{it}) * (APP_{it})] + \varepsilon_{it} \dots \dots \dots (3.5)
 \end{aligned}$$

$$\begin{aligned}
 ROE_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
 & + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 [(IHP_{it}) * (ARP_{it})] + \beta_9 [(IHP_{it}) \\
 & * (APP_{it})] + \beta_{10} [(ARP_{it}) * (APP_{it})] + \varepsilon_{it} \dots \dots \dots (3.6)
 \end{aligned}$$

$$\begin{aligned}
TQ_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
& + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 [(IHP_{it}) * (ARP_{it})] \\
& + \beta_9 [(IHP_{it}) * (APP_{it})] + \beta_{10} [(ARP_{it}) * (APP_{it})] + \varepsilon_{it} \dots \dots \dots (3.7)
\end{aligned}$$

3.4.3 Mediation Effect Model

To establish whether corporate cash holding mediate the relationship between short-term financing decisions and financial performance, the study has employed a four-step approach as suggested by Baron and Kenny (1986) and used by Mwangi *et al.* (2014). In the first step, the study estimated model 3.2, 3.3, and 3.4 as the base models to determine the relationship between the dependent variable (financial performance) and the independent variables (short-term financing decisions). In step two, model 3.8 estimates the effect of the independent variables (short-term financing decisions) on mediator variable (cash holding).

$$\begin{aligned}
M = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
& + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \dots \dots \dots (3.8)
\end{aligned}$$

Where: M = Mediating Variable = Cash Holdings

In step three, model 3.9, 3.10, and 3.11 estimates the effect of the independent variables (short-term financing decisions) including the mediating variable (cash holdings) as one of the explanatory variables on the dependent variable (financial performance).

$$\begin{aligned}
ROA_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
& + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 M + \varepsilon_{it} \dots \dots \dots (3.9)
\end{aligned}$$

$$\begin{aligned}
ROE_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} \\
& + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 M + \varepsilon_{it} \dots \dots \dots (3.10)
\end{aligned}$$

$$TQ_{it} = \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SIZE_{it} + \beta_6 GROWTH_{it} + \beta_7 LEV_{it} + \beta_8 M + \varepsilon_{it} \dots \dots \dots (3.11)$$

In step fourth, a decision is made on whether cash holdings has a complete, partial or no mediation effect on the relationship between short-term financing decisions and financial performance. Table 3.1 depicts the decision criteria used to address the hypothesis.

Table 3.1 Mediation Decision Making Criteria

	Result	Decision
1.	$\beta_1 - \beta_4$ are significant in model 3.2, 3.3 and 3.4	Complete mediation
	$\beta_1 - \beta_4$ are significant in model 3.8	
	$\beta_1 - \beta_4$ are not significant and β_8 is significant in model 3.9, 3.10 and 3.11	
2.	$\beta_1 - \beta_4$ are significant in model 3.2, 3.3 and 3.4	Partial mediation
	$\beta_1 - \beta_4$ are significant in model 3.8	
	$\beta_1 - \beta_4$ in 3.2, 3.3 and 3.4 are significant but more than $\beta_1 - \beta_4$ in model 3.9, 3.10 and 3.11 are significant or not significant and β_8 is significant in model 3.9, 3.10 and 3.11	
3.	$\beta_1 - \beta_4$ are not significant in model 3.2, 3.3 and 3.4	No Mediation
	$\beta_1 - \beta_4$ are not significant in model 3.8	
	$\beta_1 - \beta_4$ in 3.2, 3.3 and 3.4 are significant and equal to $\beta_1 - \beta_4$ in 3.9, 3.10 and 3.11 and β_8 is not significant in model 3.9, 3.10 and 3.11	

Source: Baron and Kenny (1986)

3.4.4 Moderating Effect Model

To test the moderating effect of firm characteristics on the relationship between short-term financing decisions and financial performance, Keppel and Zedeck (1989) two-step procedure is used. In the first step, model 3.2, 3.3 and 3.4, which includes firm characteristics namely Firm Size, Growth Opportunities and Financial Leverage as

explanatory variables are estimated as the base models to determine the effect of the explanatory variables on the response variables. The explanatory variables do not have to be statistically significant predictors of the dependent variable in order to test for an interaction term (Baron & Kenny, 1986). In the second step, model 3.12, 3.13 and 3.14, which captures the interaction terms (the product of the independent variables and moderators) are computed. Hence, moderating effect of Firm Size, Growth Opportunities and Financial Leverage on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE is estimated as:

$$\begin{aligned}
 ROA_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} \\
 & + \beta_5 [(IHP_{it}) * (SIZE_{it})] + \beta_6 [(ARP_{it}) * (SIZE_{it})] \\
 & + \beta_7 [(APP_{it}) * (SIZE_{it})] + \beta_8 [(IHP_{it}) * (GROWTH_{it})] \\
 & + \beta_9 [(ARP_{it}) * (GROWTH_{it})] + \beta_{10} [(APP_{it}) * (GROWTH_{it})] \\
 & + \beta_{11} [(IHP_{it}) * (LEV_{it})] + \beta_{12} [(ARP_{it}) * (LEV_{it})] + \beta_{13} [(APP_{it}) \\
 & * (LEV_{it})] + \varepsilon_{it} \dots \dots \dots (3.12)
 \end{aligned}$$

$$\begin{aligned}
 ROE_{it} = & \alpha + \beta_1 IHP_{it} + \beta_2 ARP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} \\
 & + \beta_5 [(IHP_{it}) * (SIZE_{it})] + \beta_6 [(ARP_{it}) * (SIZE_{it})] \\
 & + \beta_7 [(APP_{it}) * (SIZE_{it})] + \beta_8 [(IHP_{it}) * (GROWTH_{it})] \\
 & + \beta_9 [(ARP_{it}) * (GROWTH_{it})] + \beta_{10} [(APP_{it}) * (GROWTH_{it})] \\
 & + \beta_{11} [(IHP_{it}) * (LEV_{it})] + \beta_{12} [(ARP_{it}) * (LEV_{it})] + 3[(APP_{it}) \\
 & * (LEV_{it})] + \varepsilon_{it} \dots \dots \dots (3.13)
 \end{aligned}$$

However, a few studies have used Tobin Q as a proxy of market value. Mohamad and Saad (2010) and Javid (2014) have used it.

Short-term financing decisions constitute the independent variables in this study. They include Cash Conversion Cycle, inventory turnover, accounts receivable turnover, and accounts payable turnover decisions. The Cash Conversion Cycle is a proxy for working capital management (Padachi, 2006). Accounts receivable turnover in days (accounts receivable period) measures accounts receivable turnover decisions (White, 2008). The study has used accounts payable turnover in days (accounts payable period) as proxy for accounts payable turnover decisions while Inventory turnover in days (inventory holding) measures inventory turnover decisions (Chowdhury & Amin, 2007).

The study has considered other variables theoretically postulated to affect financial performance. The study has adopted them as moderating and control variables in the study. These include size of the firm, growth opportunities and firm leverage. Control variables are aspects that are not part of researcher's interest; however, their effect on the dependent variable cannot be overlooked (Mwangi *et al.*, 2014). Firm leverage is employed in the studies of Samiloglu and Demirgunes (2008) and Karaduman *et al.* (2011). Lazaridis and Tryfonidis (2006) and Sharma, and Kumar (2011) have used size of the firm in their studies. The study has made use of growth opportunities variable as an indicator of existing investment prospects (D'Mello, Krishnaswami & Larkin, 2008). The study has utilized this control variable in studies like Samiloglu and Demirgunes (2008) and Zariyawati *et al.* (2009). Finally, the study has used cash holding as a mediating variable in this study. The study has used the cash ratio as an indicator of cash holdings (Ozkan & Ozkan 2004, Capkun & Weiss 2007, Teruel & Solano, 2008). Table 3.2

presents a catalog of study variables, their operational definition, and the measurements formulae exercised to estimate these variables.

Table 3.2: Operationalization and Measurement of Study Variables

Type	Variable	Operationalization	Measurement	Hypothesized direction
Dependent Variable	Financial Performance	❖ Return on Assets (ROA)	❖ $ROA = \text{Earnings Before and Interest Tax} / \text{Total Assets}$	Positive/Negative
		❖ Return on Equity (ROE)	❖ $ROE = \text{Earnings Before and Interest Tax} / \text{Total Equity}$	Positive/Negative
		❖ Tobin-Q (TQ)	❖ $TQ = \text{Market Value of Equity} + \text{Book Value of Liabilities} / \text{Book Value Assets}$	Positive/Negative
Independent Variables	Inventory Turnover Decisions	❖ Inventory Holding Period (IHP)	❖ $IHP = 365 / \text{Inventory Turnover (IT)}$ ❖ $IT = \text{Cost of Goods Sold} / \text{Average Inventory}$ ❖ $\text{Average Inventory} = (\text{Beginning Inventory} + \text{Ending Inventory}) / 2$	Positive/Negative
	Accounts Receivable Turnover Decisions	❖ Accounts Receivable Period (ARP)	❖ $ARP = 365 / \text{Accounts Receivable Turnover (ART)}$ ❖ $ART = \text{Sales} / \text{Average Accounts Receivable}$ ❖ $\text{Average Accounts} = (\text{Beginning Accounts Receivable} + \text{Ending Accounts Receivable}) / 2$	Positive/Negative
	Accounts Payable Turnover Decisions	❖ Accounts Payable Period (APP)	❖ $APP = 365 / \text{Accounts Payable Turnover (APT)}$ ❖ $APT = \text{Cost of Goods Sold} / \text{Average Accounts Payable}$ ❖ $\text{Average Accounts Payable} = (\text{Beginning Accounts Payable} + \text{Ending Accounts Payable}) / 2$	Positive/Negative
	Cash Conversion Cycle Decisions	❖ Cash Conversion Cycle (CCC)	❖ $CCC = IHP + ARP - APP$	Positive/Negative
Mediating Variable	Cash Holdings	❖ Cash Ratio (CR)	❖ $CR = \text{Cash and Cash Equivalents} / \text{Book Value of Assets-Cash and Cash Equivalents}$	Positive/Negative
Moderating Variable	Firm Characteristics	❖ Firm Size, Growth Opportunities and Financial Leverage	❖ Logarithm of total assets of each firm; Natural Log (Revenue for year t / Revenue year $t-1$); Total Liabilities / Total Assets	Positive/Negative
Control Variables	Firm Size (SIZE)	❖ Total Assets	❖ $SIZE = \text{Logarithm of total assets of each firm}$	Positive/Negative
	Growth Opportunities	❖ Revenue Growth Rate (GROWTH)	❖ Natural Log (Revenue for year t / Revenue year $t-1$)	Positive/Negative
	Leverage (LEV)	❖ Debt to Total Assets Ratio	❖ $LEV = \text{Total Liabilities} / \text{Total Assets}$	Positive/Negative

Source: Author (2016)

3.6 Target Population

The target population of the study comprises all non-financial firms listed at the NSE for a period of fourteen years from 2001 to 2014. The NSE had 39 non-financial firms listed at the NSE as at 31st December 2015. The companies are classified into various segments namely, agricultural, automobiles and accessories, commercial and services, construction and allied, energy and petroleum, and manufacturing and allied (Table 3.3 and Appendix I). The reason as to why listed firms at the NSE is chosen is mainly because of the availability and the dependability of the financial statements in that they are subjected to the mandatory audit by internationally recognized audit firms. Moreover, these firms are motivated to post good financial performance to make their shares more striking (Lazaridis & Tryfonidis, 2006).

Table 3.3: Target Population Distribution

Sector/Segment	Number of Listed Firms	Percentage
1. Agricultural	7	17.95
2. Automobiles and Accessories	3	7.69
3. Commercial and Services	10	25.64
4. Construction and Allied	5	12.82
5. Energy and Petroleum	5	12.82
6. Manufacturing and Allied	9	23.08
Total	39	100

Source: <https://www.nse.co.ke/> (2015)

Table 3.3 depicts the target population constituting of non-financial listed firms classified into six segments whereby 17.95 percent comprised of firms in the agricultural segment while 7.69 percent of the firms are in the automobile and accessories segment. Firms in the commercial and services sector make up 24.64 percent of the target population while

12.82 percent are in the construction and allied segment. Firms in the energy and petroleum sector constitutes 12.82 percent of non-financial firms while 23.08 percent of the firms are in the manufacturing and allied segment. This distribution shows that most of the listed non-financial firms come from commercial and services sector while the least number of firms come from automobile and accessories segment. Automobile and accessories segment had only three firms listed at the NSE. The distribution nevertheless indicates that all the non-financial segments are represented.

Consistent with Deloof (2003) and Mathuva (2010, 2013), firms in the banking, insurance and investment, telecommunications and technology segments, and some commercial and services segment were excluded from the study due to the nature of their operations. This is because the meaning of working capital is different for these firms. This is attributable to unique characteristics of financial service sectors (Lazaridas & Tryfonindis, 2006). The working capital of financial institutions consists of deposits and loans, which form part of their core business over and above the financial regulatory requirements as compared to other firms (Lazaridas & Tryfonindis, 2006). Therefore, working capital may affect their performance differently from non-financial firms. In addition, Mathuva (2013) asserts that the inventories held by non-financial firms are primarily for trading in the ordinary course of the business. Furthermore, the companies in the financial sector are highly regulated by the Central Bank of Kenya on matters of liquidity, asset and capital holding, and provision for bad debts among other factors (Santos, 2001). In addition, cash is the operating asset of banks and so financial firms have considerably high levels of cash holdings than for firms in other sectors (Mwangi, *et al.*, 2014).

3.7 Sampling Design and Sample Size

The study has taken up a census approach since the number of non-financial firms listed at the NSE is small. According to Saunders, *et al.* (2009) a census approach improves the legitimacy of the collected data by embracing certain cases with rich information. The total number of non-financial listed firms at the NSE used in the study are 39. The study has further screened these firms against various criteria that included lack of complete data and unqualified audit reports. As a result, the study has dropped 13 firms that do not meet the threshold and therefore the total number of firms used in this study is 26 (Appendix II). This forms a balanced panel data comprising of 26 firms and 14 years period ranging from 2001 to 2014. These firms represent the drivers of industrial force in Kenya and therefore, capture the aggregate working capital behavior in the country. Table 3.4 provides the details of the firms selected.

Table 3.4: Selection of Firms

Sector/Segment	Number of Listed Firms	Firms Meeting the Criteria
1. Agricultural	7	5
2. Automobiles and Accessories	3	3
3. Commercial and Services	10	4
4. Construction and Allied	5	5
5. Energy and Petroleum	5	3
6. Manufacturing and Allied	9	6
Total	39	26

Source: Computed from NSE Database (2015)

3.8 Data Collection Instrument

The researcher uses a document review guide (Appendix IV & V) to extract and compile the required financial data for analysis from the annual reports. The data is mined from

the specific financial statements namely the income statement, statement of financial position and the notes to the accounts. Consequently, the sample data began in 2001 and ended in 2014. The extraction of data for all the variables in the study is based on the annual published financial reports of non-financial firms listed at the NSE covering the years 2001-2014. Consistent with Barako *et al.* (2006) and Mathuva (2010), the NSE handbooks and the Capital Markets Authority provides the required data.

3.9 Data Collection Procedure

A study permit (Appendix III) from National Commission for Science, Technology and Innovation (NACOSTI) has been acquired to let use of data from published financial statements of firms listed at the NSE, Kenya. This yields balanced panel data, which consist time series and cross-sections. The cross sectional data consists of 26 companies whereas the time series are years between 2001 and 2014. A mixture of time series with cross-sections increases the superiority and amount of data to heights that are unattainable with only one of the two aspects (Gujarati, 2003).

A number of reasons have informed the choice of panel data. Firstly, panel data permits control of individual heterogeneity, making it probable to eliminate partiality originating from the existence of individual effects (Hsiao, 2003). Secondly, panel data yields more informative data, more changeability and less collinearity amongst variables than is typical of cross-section or time-series data, more degree of freedom, and more efficiency (Baltagi, 2005). Thirdly, panel data attains consistent estimators in the presence of omitted variables (Wooldridge, 2002). Panel data sets are also capable to distinguish and approximate the effects that pure cross-sections or pure time-series data cannot detect (Baltagi, 2005). Employing cross-section data only would have given a small sample but including the time series of 14 years has extended to 364 firm-year observations since the

study focuses on 26 non-financial firms listed at the NSE, The resultant big sample has made it feasible for the study to satisfy asymptotic requirements (Gujarati, 2003).

3.10 Data Analysis Techniques

The study has computed relevant ratios based on the secondary data extracted from the financial statements as defined in Table 3.1. The secondary data encompasses panel data, which consisted of time series and cross-sections. The study has derived descriptive statistics and inferential statistics from the panel data obtained. Descriptive statistics used includes the mean, median, and standard deviation. Inferential statistics used includes correlation and panel regression. STATA 14.0 software has supported the analysis of the panel data. Excel worksheets have been used to compute the relevant ratios for each firm for the period under consideration based on the data extracted from the financial statements. Before importing data from STATA software from excel worksheets, it has arranged in STATA format. The justification for use of STATA is that it has the capacity to work with panel data. The study has summarized and profiled the status of inventory turnover decisions, accounts receivable turnover decisions, accounts payable turnover decisions, and financial performance among non-financial listed firms at the NSE using descriptive statistics. The study has further estimated the Feasible Generalized Least Square (FGLS) after accounting for various violations of classical linear assumptions.

3.10.1 Diagnostic Tests

It is essential to make certain non-violations of the suppositions of the Classical Linear Regression Model (CLRM) ahead of trying to approximate equations 3.2, 3.3, and 3.4. The study runs the possibility of getting subjective, ineffective, and contradictory parameter estimates for approximating the regression equations without correcting the contraventions if any (Brooks, 2008). Consequently, the study has carried out tests of

normality, multicollinearity, autocorrelation, heteroscedasticity, and panel unit root to guarantee appropriate measurement of equations 3.2 to 3.14.

3.10.1.1 Normality Tests

The assumption of normality is necessary to conduct single or joint hypothesis tests about the model parameters (Brooks, 2008). To this end, the study has used two different methods to check if the data is normally distributed. Firstly, the study has used the graphical method to establish whether the data is normally distributed. Normal distribution is symmetric about its mean, while a skewed distribution is not, but has one tail longer than the other (Brooks, 2008). Secondly, in some cases, it is hard to establish the normality of data distribution by just looking at the scatter plot and the study has performed Bera and Jarque (1981) tests of normality. The null hypothesis states that the disturbances are not normally distributed. The study rejects the null hypothesis if the P-value is less than 5 percent level of significance. If the data is not normally distributed a non-parametric test is most appropriate.

3.10.1.2 Multicollinearity

The study has tested for multicollinearity using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity. According to William *et al.* (2013), multicollinearity refers to the presence of correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley, Kuh & Welsch, 1980). Large standard errors affect the correctness of rejection or failure to reject the null

hypothesis. The dilemma is not the presence of multicollinearity but its severity (Gujarati, 2003).

3.10.1.3 Autocorrelation

In view of the fact that the data entails cross-section and time-series, it increases the doubt of the existence of serial correlation. The existence of serial correlation shows that the variables in the model go against the assumptions of CLRM (Anderson *et al.*, 2007). To attain the exact model specification, the study should deal with serial correlation since it is a widespread dilemma faced in panel data analysis. Accordingly, the study employed the Wooldridge test to determine whether autocorrelation exists in the panel data. According to Wooldridge (2002), the study risks obtaining prejudiced standard errors and ineffective parameter approximates for failing to recognize and tackle serial correlation in the idiosyncratic error term in a panel model. The null hypothesis of this test is that the data has no serial correlation. The study has adopted Feasible Generalized Least Squares (FGLS) since panel data contains serial correlation (Appendix VI, Table A.4).

3.10.1.4 Heteroscedasticity

Since the data for this research is a cross-section of firms, this raises concerns about the existence of heteroscedasticity. The CLRM presumes that the error term is homoskedastic, that is, it has constant variance. If the error variance is not constant, then there is heteroscedasticity in the data. Estimating a regression model devoid of accounting for heteroscedasticity would result in impartial parameter estimates (Brooks, 2008). In consequence, the study has tested for heteroscedasticity using the Modified Wald test suggested by Ohtani and Honda (2008). The null hypothesis is that the error variance is homoskedastic. Based on the results, the study has rejected the null hypothesis thereby concluding that heteroscedasticity is present in the panel data (Appendix VI, Table A.3).

Therefore, the study has dealt with the existence of heteroscedasticity by estimating the FGLS regression model.

3.10.1.5 Panel Unit Root Test

In view of the fact that panel data have cross-sections and time series dimensions, test for stationarity is required. The times series evaluation is based on the conjecture that the variables are stationary. Approximation of the models without taking into consideration the non-stationary character of the data would result in sham results (Gujarati, 2003). Otherwise, if stationarity of the series is present and not checked, the presence of trend in the data series would mean that the regression results are spurious (Tsay, 2001). In this study, two main methods for testing for stationarity or the presence of unit roots are the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests. The ADF procedure attempts to retain the validity of the tests based on white- noise errors in the regression model by ensuring that the errors are indeed white- noise. On the other hand, the Phillips-Perron (PP) procedure correctes for serial correlation through a non-parametric correction to the standard statistic (Stock, 1994). Therefore, PP test is desirable because it does not require estimation of additional parameters that would require additional data and also does not exhaust degrees of freedom. The results shows that all the study variables except firm size do not have unit root and therefore equations 3.2 to 3.14 are used in levels. Firm size is included in the equations after its first difference (Appendix VI, Table A.1).

3.10.2 Test for Fixed or Random Effects

When performing panel data analysis, one has to determine whether to run a fixed effects model or a random effects model. Whereas the fixed effect model presupposes firm specific intercepts and captures effects of those variables, which are particular to each firm and constant over time, the random effect model supposes that there is a single common intercept and it differs from firm to firm in a random manner (Baltagi, 2005).

Thus, for approximating the regression equations, it is indispensable to establish whether there exists a correlation between the explanatory variables. If the relationship exists then a fixed effect model would provide reliable results or else random effect model would be an efficient estimator (Garcia-Teruel & Martinez-Solano, 2007).

The study has used Hausman's specification test (1978) to decide whether fixed or random effect is suitable. The Hausman specification test tries to find whether there is significant relationship between the unnoticed firm-specific random effects and the regressors. If such relationship is not present then the random effects could be more appropriate. In the presence of such relationship, nonetheless, then the random effects model would be contradictorily approximated and the fixed effects model would be apposite (Greene, 2008). The null hypothesis states that variance across the entities is zero implying that there are no panel effects. If the Hausman test rejects the null hypothesis, then random effects would be a proficient estimator or else in case of rejection the null hypothesis, the fixed effects model would bequeath superior approximation of coefficients.

3.10.3 Ethical Considerations

While compiling the study report, the investigator has taken due care to ensure that the thesis presents correct information on what has been discovered after appropriate examination of the entire data extracted from the annual reports of non-financial firms listed at the NSE, Kenya. In addition, journals and text books belonging to other authors that have been used in any part of this study have been fully acknowledged using APA Referencing Style.

Table 3.5 presents the summary of the data analysis techniques employed to test the hypotheses of this thesis.

Table 3.5: Summary of Data Analysis Techniques

	Objective	Methodology
i.	To determine the effect of Inventory Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.	Panel regression (FGLS Regression)
ii.	To establish the effect of Accounts Receivable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.	Panel regression (FGLS Regression)
iii.	To establish the effect of Accounts Payable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.	Panel regression (FGLS Regression)
iv.	To establish the effect of Cash Conversion Cycle Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.	Panel regression (FGLS Regression)
v.	To determine the mediating effect of Cash Holdings on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya.	Step-wise regression
vi.	To determine the interaction effect of Inventory Turnover Decisions, Accounts Receivable Turnover Decisions, and Accounts Payable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya.	Panel regression (FGLS Regression)
vii.	To establish the moderating effect of Firm Characteristics on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya.	Hierarchical multiple regression

Source: Researcher (2016)

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the data analysis as per the objectives and hypotheses. The chapter is structured as follows: descriptive statistics, trend analysis, diagnostic tests, inferential statistics and discussion of results. The results are presented in form of tables.

4.2 Descriptive Statistics

4.2.1 Short-Term Financing Decisions and Financial Performance (Sector-Wise)

Table 4.1 presents the average of short-term financing decisions and financial performance measures for six sectors 4.1.

Table 4.1: Short-Term Financing and Financial Performance (Sector-Wise)

Sectors	ROA	ROE	TQ	IHP	ARP	APP	CCC
1. Agricultural	0.081	0.122	0.725	73.0	64.5	72.8	64.7
2. Automobiles and Accessories	0.031	-0.001	1.08	168.8	77.2	128.7	117.2
3. Commercial and services	0.116	0.215	1.89	67.9	72.7	202.0	-61.4
4. Construction and Allied	0.108	0.218	1.74	103.3	59.2	82.7	79.8
5. Energy and Petroleum	1.048	-0.084	1.02	38.5	57.1	67.1	28.6
6. Manufacturing and Allied	0.164	0.296	1.94	98.8	56.6	130.6	24.7
Overall	0.101	0.1571	1.457	91.07	63.53	113.71	40.89

Source: Study Data (2016)

As can be seen from Table 4.1, non-financial firms have an average Cash Conversion Cycle of 41 days during the study period 2001 to 2014. The Cash Conversion Cycle

components consisting of the accounts receivable period, inventory holding period and accounts payable period for non-financial firms indicates that the average time for the non-financial firms during which receivables remain outstanding is 64 days while it takes relatively more time to settle their financial obligation in the terms of payables which is 114 days on average. The inventory for non-financial firms on average takes 91 days to be converted into sales. The average return on assets (ROA) and return on equity (ROE) for non-financial firms is 10.10% and 15.71% respectively. The average Tobin Q for non-financial firms is 145.7%. The performance of various measures of working capital of the sectors show that the Cash Conversion Cycle, a comprehensive measure of efficiency in working capital management, is lowest for commercial and services sector. It is negative on average for the Commercial and Services sector which indicates that the Accounts Receivable Period surpasses the operating cycle. According to Gitman (1991), while the likelihood of negative CCC are uncommon but non-manufacturing firms are probable to have negative CCC than manufacturing firms because firms in these sector carry fast selling inventories and normally sell for cash.

Commercial and Services, Energy and Petroleum, and Manufacturing and Allied sectors come on the top in the ranking in form of Cash Conversion Cycle. These sectors have CCC of -61.4, 28.6 and 24.7 days respectively. The outputs reflect that the laggard sectors in form of CCC together with Automobiles and Accessories, Construction and Allied and Agricultural sectors require focusing on their management policy regarding short-term financing. One more fascinating finding is that the sectors with higher CCC are experiencing this predicament largely because of their sluggish inventory turnover in days. These sectors are taking longer to sell their inventory, which elongates their Cash Conversion Cycle. Another imperative feature of investigation is that the sectors with shorter Cash Conversion Cycle are additionally doing better in form of financial

performance as measured by return ROA, ROE, and TQ. For example, Commercial and services sector with an average CCC of minus 61 days, and Manufacturing and Allied sector with 25 days, are in addition superior in terms of average efficiency in cash conversion in relation to other sectors and are the greatest performers in terms of financial performance. This indicates that efficiency in short-term financing decisions is associated with healthier financial performance in terms of profitability and market value.

4.2.2 Descriptive Statistics of All Variables (Overall)

Table 4.2 shows the mean, minimum, and maximum values with standard deviation of various variables used in the model during the period 2001–2014.

Table 4.2: Descriptive Statistics of All Variables

Variable	Observation	Minimum	Maximum	Mean	Std. Dev.
ROA	364	-0.30609	0.37953	0.10112	0.10842
ROE	364	-4.1226	1.75003	0.15713	0.41739
TQ	364	0.26875	7.563	1.45721	1.10881
IHP	364	3.72683	284.513	91.0702	55.3861
ARP	364	13.4303	202.865	63.534	32.3132
APP	364	14.6931	499.215	113.709	84.1947
CCC	364	-270.9470	244.6110	40.8949	79.3277
CR	364	-0.3132	0.75167	0.06993	0.1672
SIZE	364	12.7017	19.2133	15.4932	1.3296
GROWTH	364	-0.8678	1.00298	0.09263	0.198
LEV	364	0.10461	7.43108	0.47168	0.40905

Source: Study Data (2016)

Table 4.2 shows the summary statistics of the variables included in the regression models. All the variables share the same sample size of 364 firm-year observations. Overall, the mean score of return on assets (ROA) is 10.112% with a standard deviation of 10.842% indicating small variability in ROA over time. The mean value of return on equity (ROE) is 15.713% with a standard deviation of 41.7389% indicating small variability in ROE over time. Further, the results show that the mean value of Tobin-q (TQ) is 145.721% with a standard deviation of 110.8811% indicating small variability in TQ over time. The positive values of ROA, ROE, and TQ indicate that, on average non-financial firms listed at the NSE are profitable even though some firms are operating at a loss as indicated in the negative minimum observed scores of ROA and ROE.

The results in Table 4.2, also shows that, on average, non-financial firms listed at NSE take up to 91 days (approximately 3 months) to turn their inventories into sales with standard deviation of 55 days. Maximum time taken by firms to sell inventory is 284 days (approximately 9 months) while the minimum time is 4 days. The results further indicates that, the average accounts receivable period is 64 days (approximately 2 months) with standard deviation of 32 days. The lowest time taken by non-financial firms listed at NSE to collect cash from customers is 13 days while the highest time for this objective is 203 days (approximately 7 months). Moreover, the average time of paying suppliers is 114 days (approximately 4 months) and the standard deviation is 84 days. Maximum time taken by a firm to pay its suppliers is 499 days (approximately 1 year and 5 months) while the least time taken for this object is 15 days. Additionally, the average of cash conversion cycle (CCC) used as a proxy to verify the effectiveness of short-term financing decisions is 41 days (approximately one month and 2 weeks) with a standard deviation of 79 days. This implies that the average time lag between tangible cash

expenditures on purchase of direct materials and tangible cash receipts from the sale of goods or services by non-financial firms listed at the NSE is 41 days.

Table 4.2 further indicates that the mean value of cash holdings as measured by the cash ratio (CR) is 0.069929 with a standard deviation of 0.167196. The minimum and maximum values of CR are 0.31321 and 0.75167 respectively. The negative observation implies that some companies operated with negative cash holdings which indicate that they were operating on overdraft. Table 4.2 shows that on average each firm has a size of 15.49318 with a standard deviation of 1.329604. The minimum and maximum values of log of total asset of time support this finding, that is, 12.70173 and 19.21334 respectively. The total mean of revenue growth for the period is 0.092628 with a standard deviation of 0.198. The minimum and maximum values of revenue growth over the same period were -0.86778 and 1.002976 respectively. The negative scores show that there is a company, which has a negative growth. Finally, the average of leverage is 47.168% with standard deviation of 40.9053%. The minimum and maximum scores of leverage are 10.4614% and 743.1084% respectively. The minimum leverage shows that there is a corporation that makes little use of long-term debt in its operations.

4.3 Trend Analysis

This section presents the analysis of the trends of the variables. The study has conducted a trend analysis to establish the movement of the variables overtime. This helps in carrying out unit root tests as the trend analysis graphically indicates the blueprint of movement in the variables.

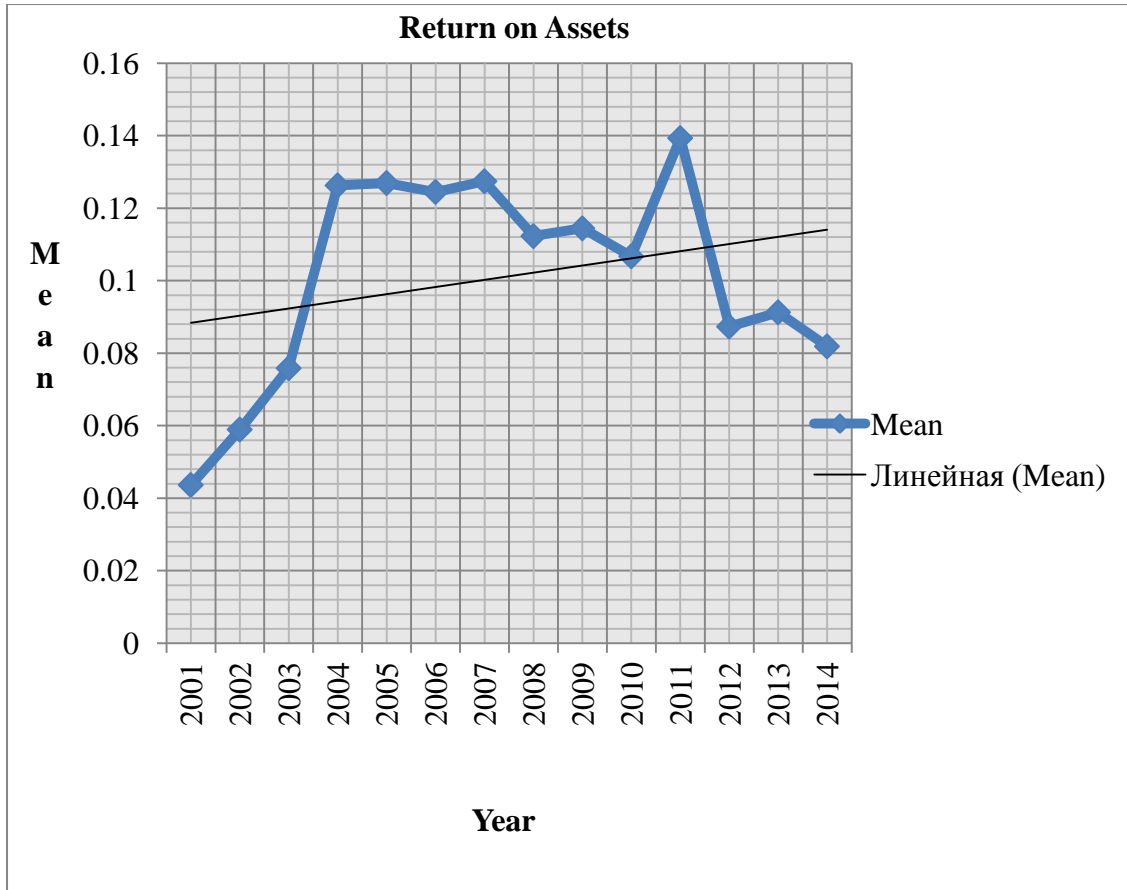


Figure 4.1: Trend of Return on Asset for the Year 2001-2014

Source: Study Data (2016)

Figure 4.1 shows the return on assets (ROA) trend for the 26 firms from the year 2001 to 2014. The trend line indicates that ROA trend of the non-financial firms listed at NSE has been fluctuating though with an increasing trend. It is observed that there is a sharp increase in the ROA from 2003 to 2004. Then it stagnates between the year 2004 and 2007 and starts decreasing from the year 2008 to 2010. In the year 2011 it increases significantly and then falls down sharply in the year 2012. It rises slightly in the year 2013 and then decreases in the year 2014.

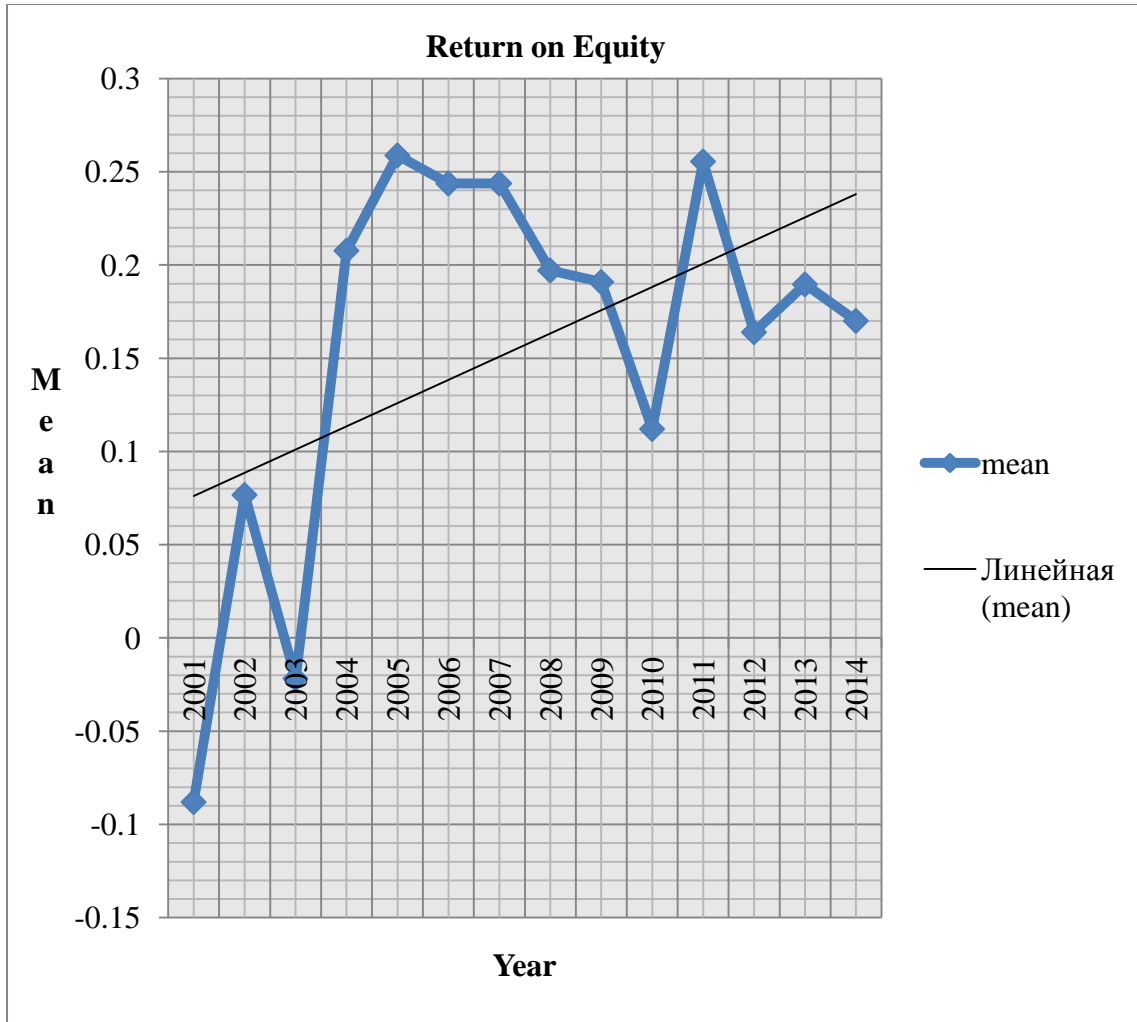


Figure 4.2: Trend of Return on Equity for the Year 2001-2014

Source: Study Data (2016)

Figure 4.2 shows the return on equity (ROE) trend for the 26 firms from the year 2002 to 2014. The trend indicates that on average the ROE trend has been on the increase. There has been an increasing trend between 2001 and 2002 after which it decreased significantly in the following year 2002-2003. Then it rises slightly in the year 2004-2005 and shows decreasing trend from the year 2006-2010. It rises in the year 2010-2011 and then a slight decrease in the year 2012-2013 and falls down in the year 2014.

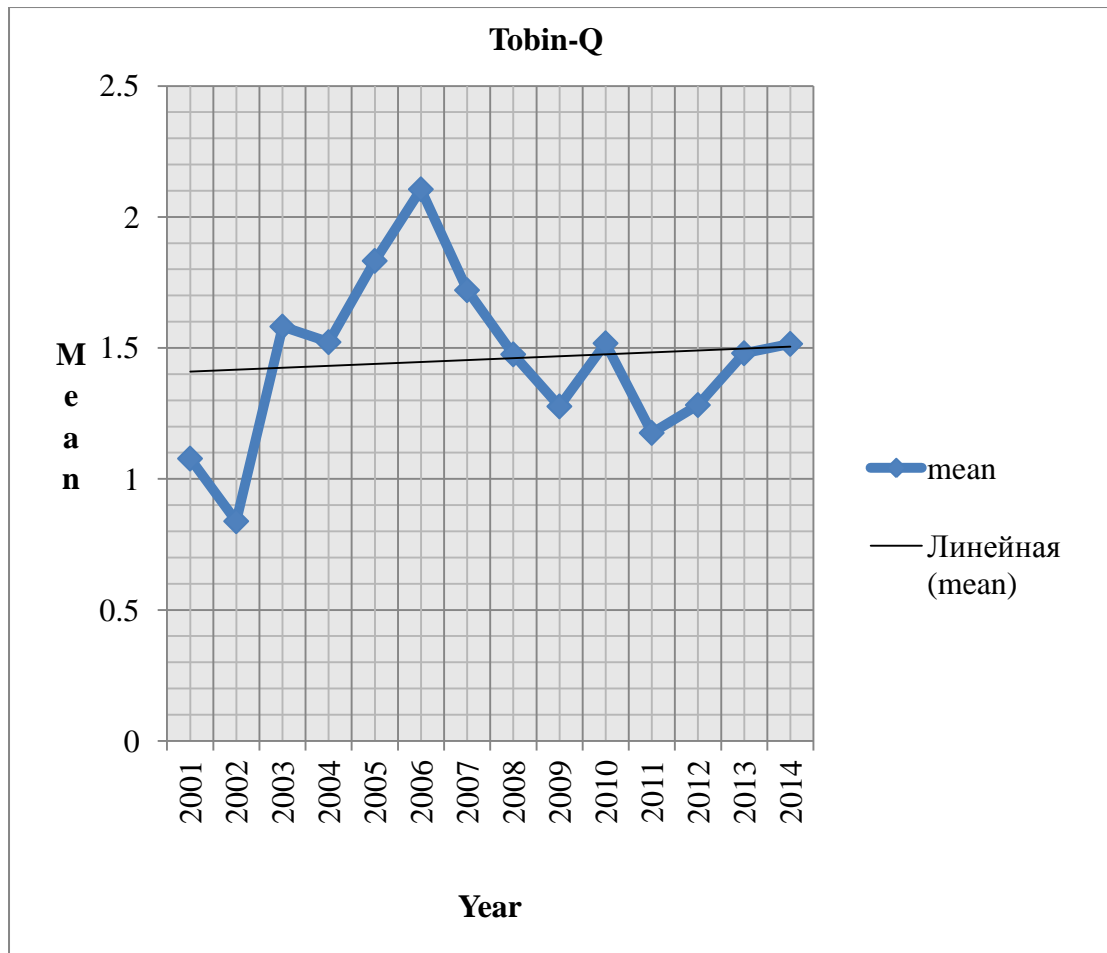


Figure 4.3: Trend of Tobin-Q for the Year 2001-2014

Source: Study Data (2016)

Figure 4.3 shows the Tobin-q (TQ) trend for the 26 companies from the year 2001 to 2014. The trend indicates that on average TQ has been fluctuating from the year 2001 to 2014. It is observed that there is a decrease in the TQ between the year 2001 and 2002 and then starts rising till year 2007 when starts falling down till the year 2009. In the year 2009-2010 it slightly increases and decreases in the year 2010-2011. Then in the 2011-2014 it exhibits an increasing trend. So the TQ of the non-financial firms listed at the NSE can be said to be unsatisfactory.

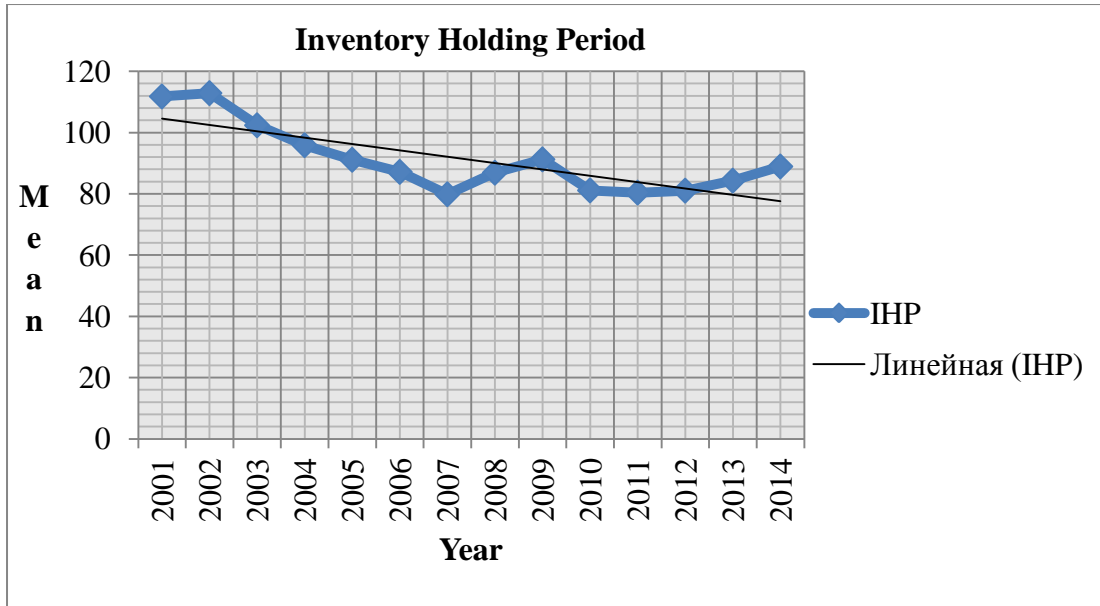


Figure 4.4: Trend of Inventory Holding Period for the Year 2001-2014

Source: Study Data (2016)

Figure 4.4 shows the trend of inventory holding period (IHP) for the 26 non-financial firms listed at the NSE from the year 2002 to 2014. The analysis reveals an uneven but decreasing trend in IHP. The trend line indicates that IHP decreased from the year 2001–2007 after which it increased slightly in the year 2007–2009. Then it declined in the year 2009–2010, stagnated from the year 2010 to 2012 and increased slightly in the year 2012–2014. A higher inventory level means that inventory is held for longer period whilst a lower inventory indicates that inventory is sold more quickly (Gill *et al.*, 2010). One of the arguments in favor of a positive effect of high-level inventory on financial performance is the increase in sales (Deloof, 2003). On the other hand, the high level of inventory represents amount of capital locked up which could have been invested in more profitable projects (Chowdhury & Amin, 2007). Generally the decreasing trend is considered good since it indicates higher efficiency in managing inventory (Deloof, 2003).

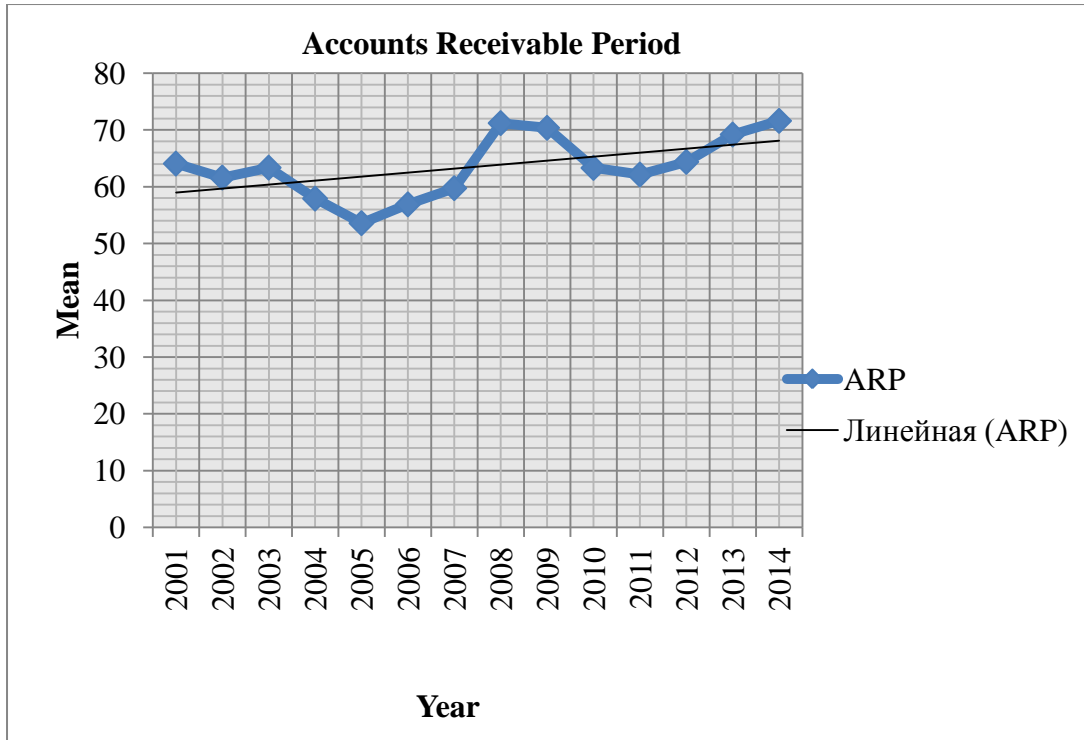


Figure 4.5: Trend of Accounts Receivable Turnover for the Year 2001-2014

Source: Study Data (2016)

Figure 4.5 shows the accounts receivable period (ARP) trend for the 26 non-financial listed firms at NSE from the year 2001 to 2014. The analysis reveals an uneven but increasing trend in ARP. There has been a decreasing trend till the year 2005-0 after which it increased significantly in the following year 2005-2008. Then it starts decreasing and increased from the year 2011-14. The increasing trend in accounts receivable period shows firms are using liberal credit policy and it may have resulted in tying up substantial funds of the firms in the form of trade debtors. Therefore, the accounts receivable period of the non-financial firms listed at the NSE is slightly longer in most years which implies slow payment by debtors. Ching, Novazzi, and Gerab (2011) argue that a reduction in the level of accounts receivable period may result more in financial performance maximization than the increase in accounts receivable period.

A higher accounts receivable show that the company takes longer time to collect amounts owed by customers whilst a shorter accounts receivable means that the company is able to collect amount owed by customers at a faster time period (Garcia-Teruel & Martinez-Solano, 2010). An increase in the level of accounts receivable can aid stir up the sales of a business by supporting the lasting rapport with customers (Wilner, 2000). However, Cheng and Pike (2003) maintain that accounts receivable means that the company is financing the buyers' inventory and bearing the credit risk.

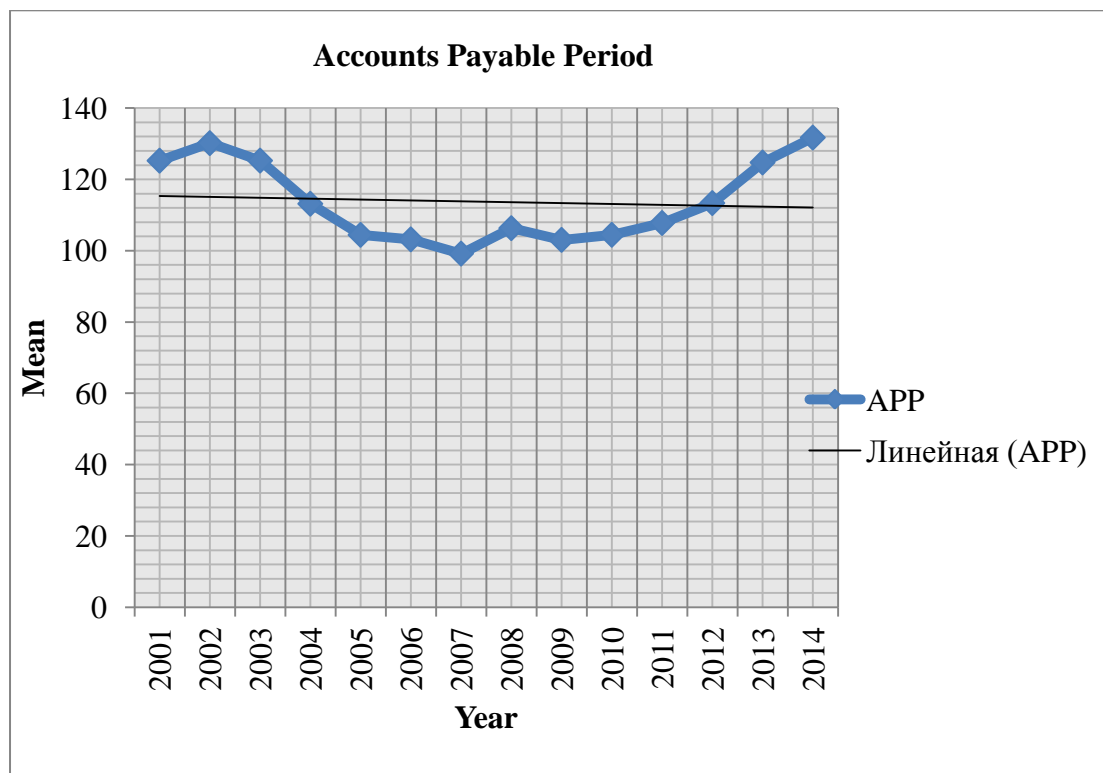


Figure 4.6: Trend of Accounts Payable Turnover for the Year 2001-2014

Source: Study Data (2016)

Figure 4.6 shows the accounts payable (APP) trend for the 26 non-financial firms listed at NSE from the year 2001 to 2014. A higher value of APP indicates that the companies wait longer before settling suppliers and a lower value of the accounts payable period denote the short time frame that it takes a corporation to settle its debts to suppliers (Ng *et*

al., 1999). The trend line indicates that APP has been increasing overtime since 2001 to 2014. This is in line the liquidity theory by Emery (1984) which explains that firms that are more profitable wait longer to settle their debts. This means that longer accounts payable period enables businesses to prevail over financial restriction (Pike & Cheng, 2001). Garcia-Teruel and Martinez-Solano (2010) maintain that accounts payable embodies a source of short-term financing employed by firms to fund a considerable part of the current assets of a firm. However, Ng *et al.* (1999) points out that loss of discount for early payment affects the profitability of the companies.

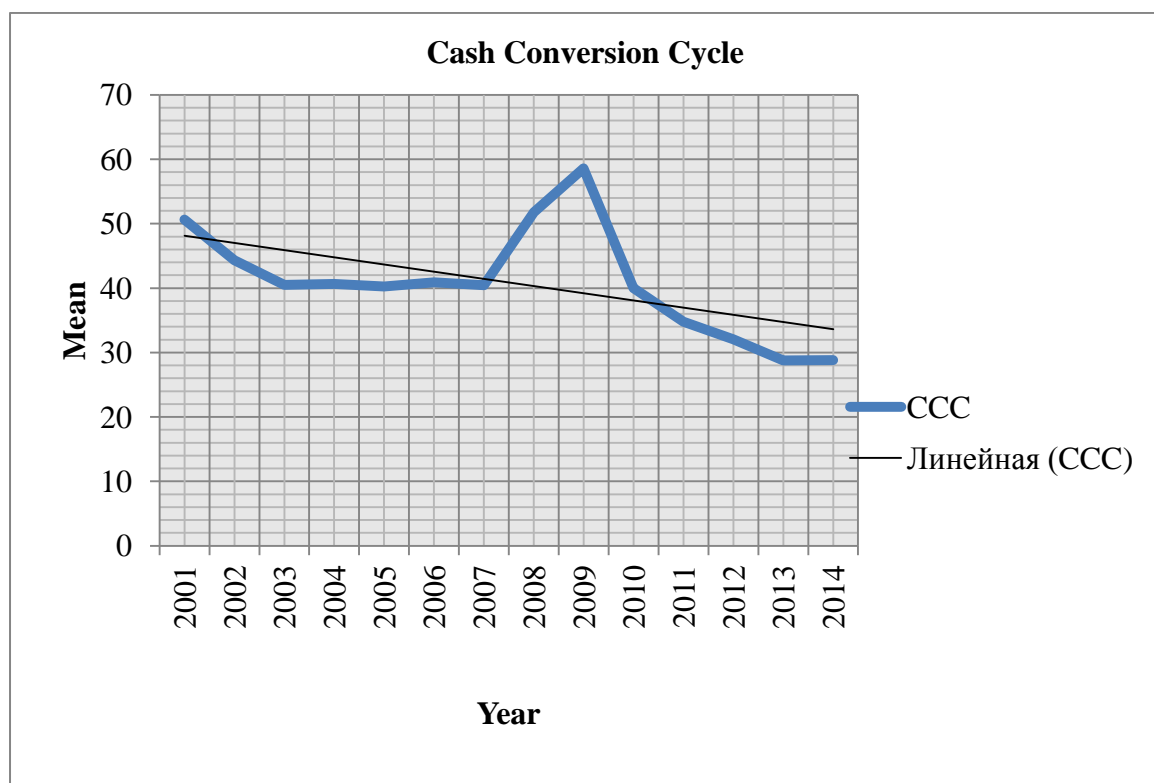


Figure 4.7: Trend of Cash Ratio for the Year 2001-2014

Source: Study Data (2016)

Figure 4.7 shows the trend of cash conversion cycle (CCC) for the 26 non-financial firms listed at the NSE from the year 2002 to 2014. The analysis reveals a decreasing trend in CCC between the year 2001 and 2003 followed by a constant trend between 2004 and 2007. Then it increased sharply in the year 2007–2009, and decreased from the year 2009

to 2014. Generally the decreasing trend of CCC is considered good since it indicates higher efficiency in managing working capital as a source of short-term financing (Deloof, 2003). The cash conversion cycle is extended if resources locked up at various points of the supply chain. While this may increase profitability (as a result of improved sales), it might negatively affect the profitability if the costs blocked in working capital go beyond the advantages of holding more inventory and/or giving way more trade credit to customers (Padachi, 2006). Thus, the longer the CCC, the more the funds tied up in working capital.

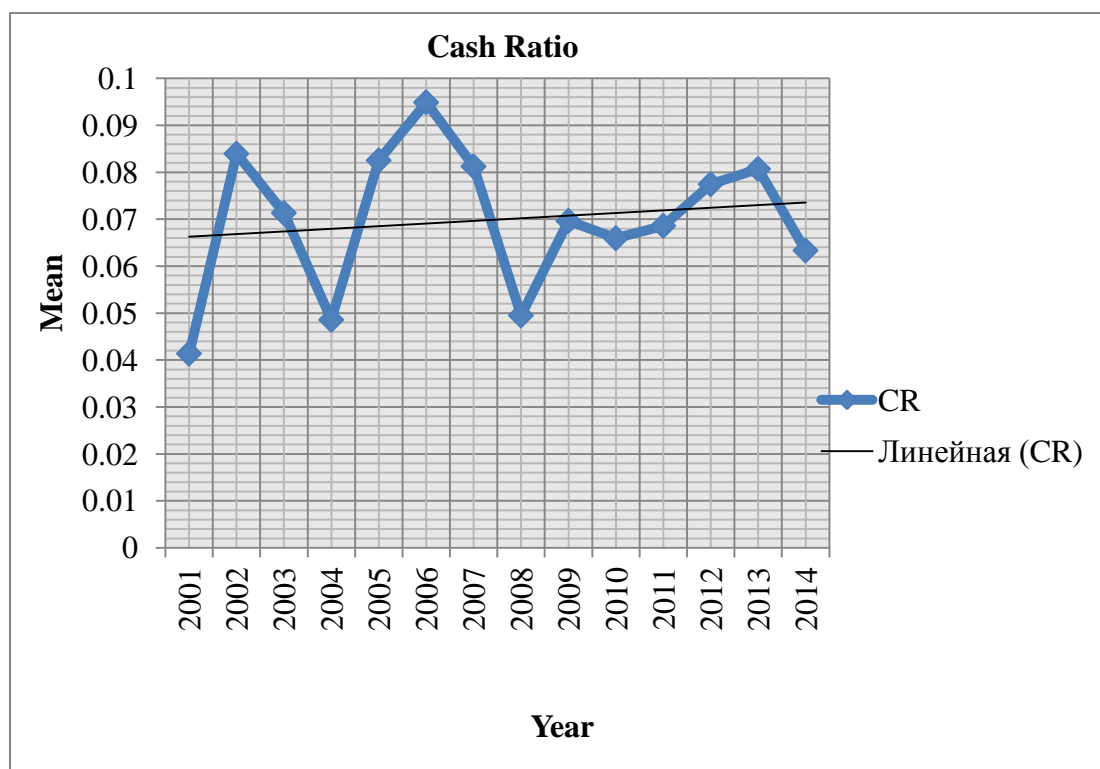


Figure 4.8: Trend of Cash Ratio for the Year 2001-2014

Source: Study Data (2016)

Figure 4.8 indicates the cash ratio (CR) trend for the 26 firms from the year 2001 to 2014. The trend line shows that CR has been changing though with a rising trend. There is a sharp increase in the year 2001-2002 followed by a sharp decline in the year 2002-2004 and then a significant rise in the year 2004-2006 after which it decreased significantly in

the year 2006-2008. Then it starts increasing and it decreased in recent year 2013-2014. According to the pecking order theory by Myers and Majluf (1984) firms do not have optimal cash levels but cash is in fact applied as a shield between retained earnings and investment requirements.

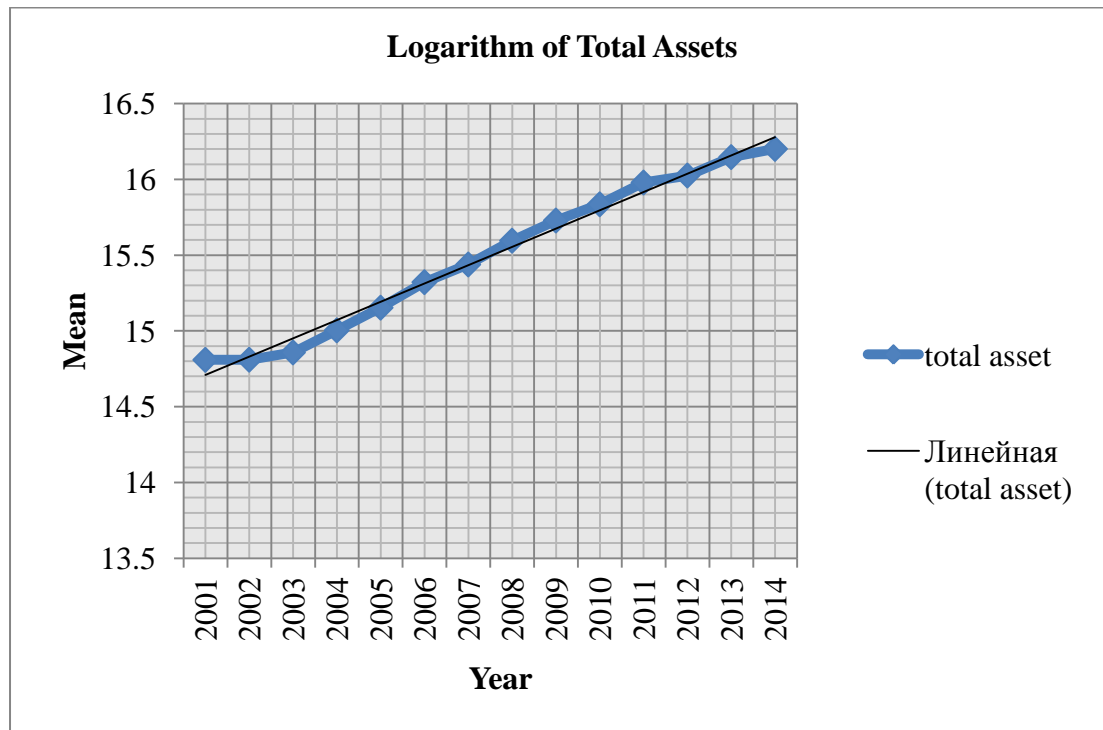


Figure 4.9: Trend of Total Asset for the Year 2001-2014

Source: Study Data (2016)

Figure 4.9 shows the total asset trend for the 26 firms from the year 2001 to 2014. The trend line shows that the total assets measured by logarithm of total assets have been increasing overtime since 2001 to 2014. It means that the resources controlled by the non-financial firms listed at the NSE for which economic benefits are expected to flow to the firms are sufficient.

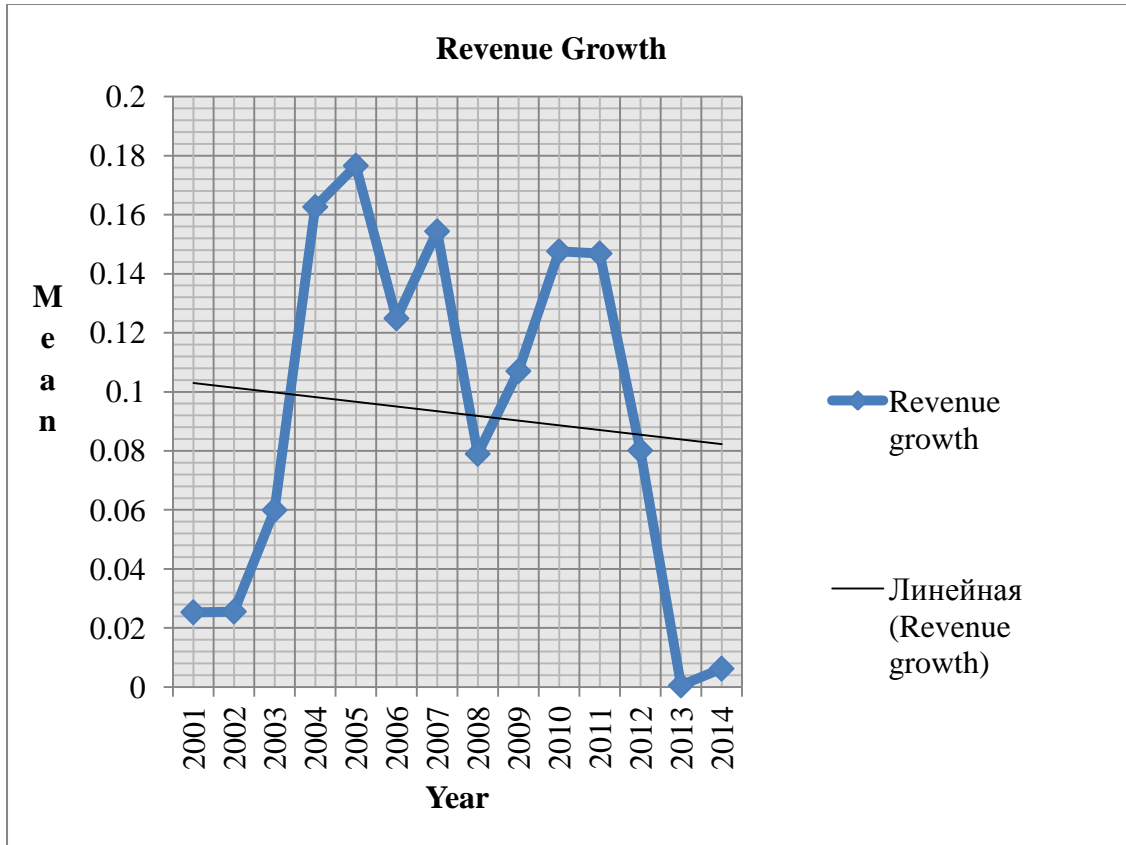


Figure 4.10: Trend of Revenue Growth for the Year 2001-2014

Source: Study Data (2016)

Figure 4.10 shows the revenue growth trend for the 26 companies from the year 2001 to 2014. The trend indicates that revenue growth has generally been fluctuating over the years with a major rise and drop in the year 2002-2005 and in the year 2011-2014 respectively. It implies that the revenue of the 26 companies is in decreasing trend. According to the pecking order theory by Myers and Majluf (1984) a company which expects plenty growth opportunities requires more capital in the future and so needs greater internal financing. In readiness for this, it then raises its cash holdings and short-term investments.

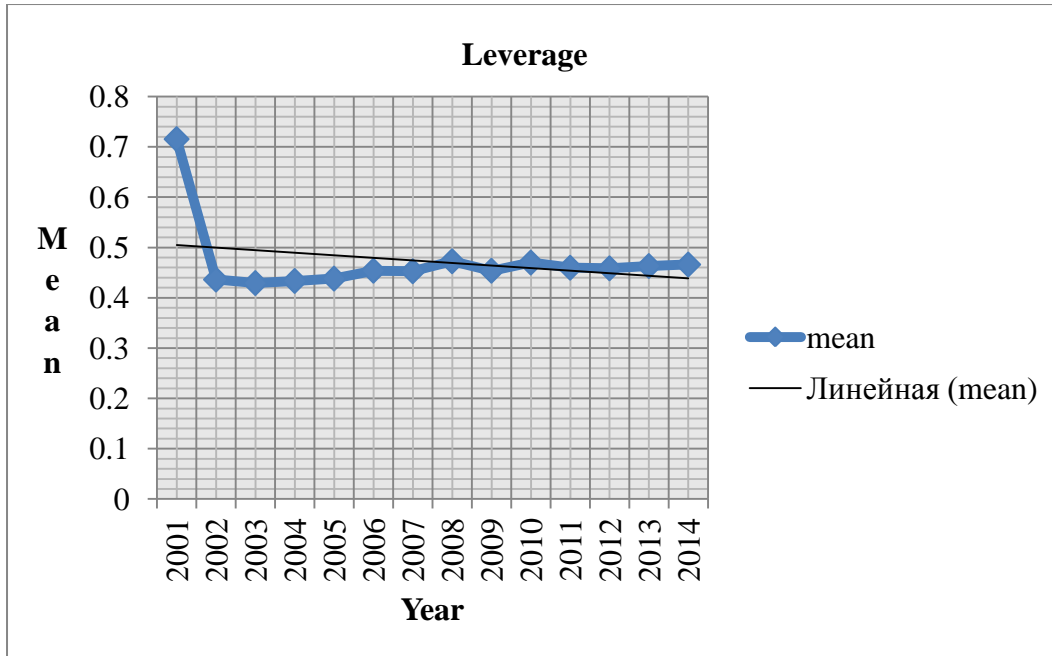


Figure 4.11: Trend of Leverage for the Year 2001-2014

Source: Study Data (2016)

Figure 4.11 reveals the leverage trend for the 26 companies from the year 2001 to 2014. The trend line shows that leverage trend has been constant overtime. This implies that the non-financial firms listed at the NSE are financing their long-term investments with internal and external financing in almost equal proportions. This is encourage considering the fact that according to Nazir and Afza (2009) external financing is expensive compared to internal financing.

4.4 Diagnostic Tests

As explained in chapter three, the researcher has carried out different diagnostic tests to make sure that the postulations of Classical Linear Regression Model (CLRM) are not contravened and to select the appropriate models for investigation in the event that the CLRM postulations are violated. Thus, prior to running a regression model pre-estimation and post estimation tests have been conducted. The pre-estimation tests conducted in this case are the multicollinearity test and unit root tests while the post estimation tests are

normality test, test for heteroscedasticity, test for autocorrelation, and Hausman specification test. The study has performed these tests to avoid spurious regression results.

4.4.1 Test for Multicollinearity

Table 4.3 present results for multicollinearity test using the variance inflation factors (VIF).

Table 4.3: Multicollinearity Results

Variable	Proxy	VIF	$1/\sqrt{\text{VIF}}$
Inventory Turnover decisions	IHP	1.41	0.707910
Accounts Receivable Turnover Decisions	ARP	1.28	0.783411
Accounts Payable Turnover Decisions	APP	1.67	0.597560
Cash Conversion Cycle Decisions	CCC	1.11	0.897975
Cash Holdings	CR	1.76	0.568436
Firm Size	SIZE	1.22	0.822165
Growth Opportunities	GROWTH	1.27	0.787372
Leverage	LEV	1.45	0.689331
Mean VIF = 1.40			

Source: Study Data (2016)

As presented in Table 4.3, the study used variance inflation factors (VIF) to test for multicollinearity. The explanatory variables used in this study are inventory turnover decisions (indicated by IHP), accounts receivable turnover decisions (indicated by ARP), accounts payable turnover decisions (indicated by APP), cash conversion cycle (indicated by CCC), firm size (SIZE) (measured by logarithm of total assets), growth opportunities (GROWTH) (measured by revenue growth rate) and leverage (LEV) (measured by debt

to total assets ratio). The results indicate that the overall VIF is 1.40 which is less than 10 implying that the study data did not exhibit multicollinearity problem as recommended by Field (2009). Thus, all the variables based on the VIF indicators have no severe multicollinearity problem.

4.4.2 Panel Unit Root Tests

Panel unit root test is applied for all variables used in the analysis in order to avoid spurious regression results. The Augmented Dickey Fuller (ADF) and Phillip Perron (PP) test results are presented in Table A.1 in Appendix VI. The Fisher-type tests including inverse chi-squared, inverse normal, inverse logit and modified inverse chi-squared reported p-values that are less than 0.05 except for model of firm size. These results leads to rejection of the null hypothesis that all panels have unit root for return on assets, return on equity, Tobin-q, inventory turnover holding period, accounts receivable period, accounts payable period, cash conversion cycle, cash ratio, growth opportunities and leverage as recommended by Choi (2001). The study therefore concludes that all the variables under consideration do not have unit root and are therefore used in levels except for firm size which was included after its first difference. This means that the results obtained are not spurious (Gujarati, 2003).

4.4.3 Test for Normality

To test for normality the study employs two approaches namely the graphical method and the Jarque-Bera test. Figure 4.12 presents the results from the graphical method.

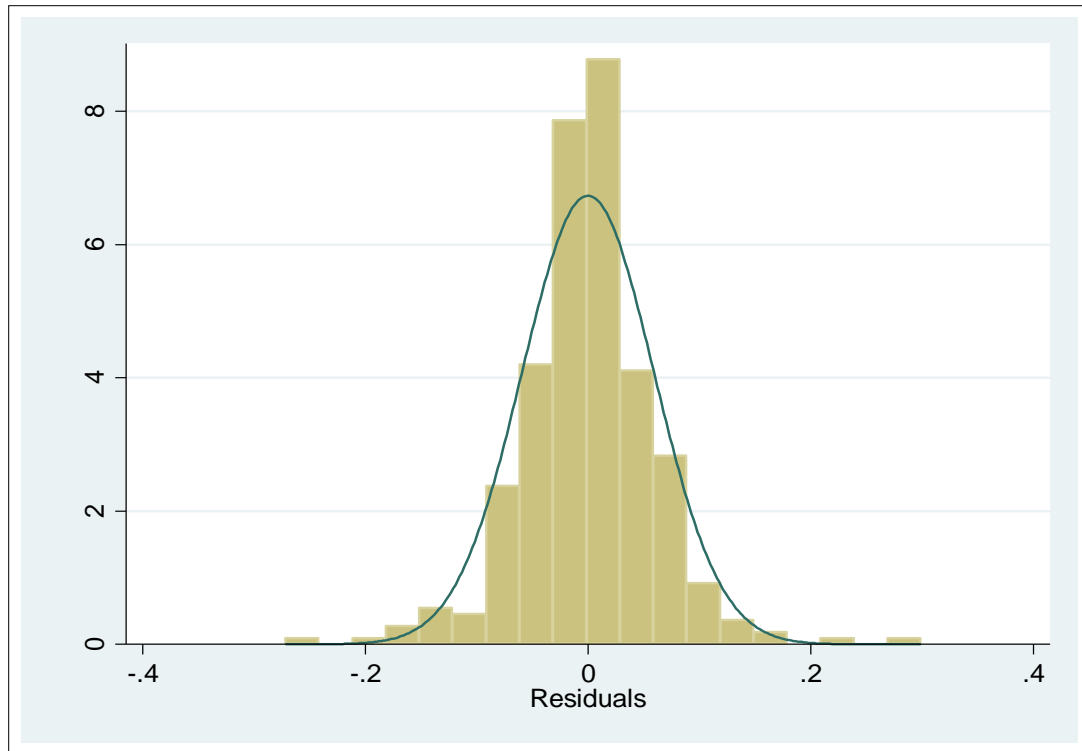


Figure 4.12: Histogram of Residuals

Source: Study Data (2016)

The results in Figure 4.12, indicates that the residuals are normally distributed. According to Brooks (2008), a normal distribution is symmetric about its mean, while a skewed distribution will not be, but will have one tail longer than the other tail. If the residuals are normally distributed, the histogram should be bell-shaped. Thus, the results in figure 4.11 show that data is normally distributed since the histogram should be bell-shaped and the tails have the same length. To verify the above results, study has conducted Jarque-Bera test. The results are as presented in Table A.2 in Appendix 5. The null hypothesis under this test is that the disturbances are not normally distributed and since the p-value (0.0000) is less than 5 percent level, the study rejects the null hypothesis of normality and concludes that the residuals are normally distributed.

4.4.4 Heteroskedasticity Test

The study tests for panel level heteroskedasticity using the Modified Wald test as shown in Table A.3 in appendix 5. The null hypothesis of this test is that the error terms has a constant variance (homoskedastic). The test has produced a chi-square score of 1267.61 with a p-value of 0.0000. The chi-square score is statistically significant at 5 percent level and thus the null hypothesis of constant variance is rejected to indicate the existence of heteroskedasticity in the study data as suggested by Poi and Wiggins (2001). The study has consequently used the FGLS prediction model to address this problem.

4.4.5 Test for Autocorrelation

The study has employed the Wooldridge test for autocorrelation to detect the existence of autocorrelation in the data, that is, whether or not the residual are serially correlated over time and the results are shown in Table A.4 in Appendix VI. The null hypothesis of this test is that there is no first order serial/autocorrelation existed in the data. The test statistic reported is F-test with one and twenty five degrees of freedom and a value of 0.629. The P-value of the F-test is 0.1918 indicating that the F-test is not statistically significant at 5 percent level. Hence, the null hypothesis of no autocorrelation is supported and the study concludes that residuals are not auto correlated.

4.4.6 Hausman Test

When performing panel data analysis, one has to determine whether to run a random effects model or a fixed effects model (Baltagi, 2005). In order to make a decision on the most suitable model to use, coefficients are estimated by both random and fixed effects. Appendix VII provides the results of the tests. The study has used the Hausman's specification test (1978) to choose between fixed and random effect models. Table 4.3, 4.4, and 4.5 shows the results of Hausman test.

Table 4.4: Hausman Test for ROA

	Coefficients		(b-B)	Sqrt (diag (v_b_B))
	(b)	(B)		
	Fixed	Random	Difference	S.E.
IHP	-7.08e-06	0.0000688	-0.0000759	0.0000628
ARP	-0.0003929	-0.0005234	0.0001305	0.0000943
APP	-0.0000688	0.000039	-0.0001078	0.000054
CCC	0.0001396	0.0001592	-0.0000196	0.0000447
CR	0.1328695	0.1450628	-0.0121933	0.0148383
DSIZE	0.1436003	0.1432033	0.000397	0.0004272
GROWTH	0.0493544	0.0516467	-0.0022924	0.0036183
LEV	-0.1235444	-0.1205873	-0.0029572	0.019563

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

$$\text{Chi2 (7)} = (\mathbf{b}-\mathbf{B})' [(\mathbf{V}_b-\mathbf{V}_B)^{-1}] (\mathbf{b}-\mathbf{B}) = 18.52$$

$$\text{Prob}>\text{chi2} = 0.0176$$

Source: Study Data (2016)

In order to choose between fixed and random effect models, where the return on assets (ROA) is the dependent variable, the Hausman test is utilized and the results are provided in Table 4.4. The null hypothesis of the Hausman test is that the random effects model is preferred to the fixed effects model. For ROA model, Hausman test reveals a chi-square of 18.52 with a p-value of 0.0176 indicating that at 5 percent level, the chi-square value obtained is statistically significant. Thus, the researcher rejects the null hypothesis that random effects model is preferred to fixed effect model for ROA as suggested by Greene (2008). Therefore, the fixed effects model for ROA is therefore adopted.

Table 4.5: Hausman Test for ROE

	Coefficients		(b-B)	Sqrt (diag (v_b_B))
	(b)	(B)		
	Fixed	Random	Difference	S.E.
IHP	-0.0005783	-0.0000921	-0.0004863	0.0004677
ARP	-0.0020743	-0.0028731	0.0007988	0.0007138
APP	0.0006982	0.0006937	4.47e-06	0.0003811
CCC	0.0014138	0.0009515	0.0004623	0.0003257
CR	-0.1945929	-0.98468	-0.0961249	0.119868
DSIZE	0.4128961	0.4324082	-0.0195121	0.0198331
GROWTH	0.1834171	0.2052557	-0.0218386	0.0321019
LEV	-0.3935668	-0.3536862	-0.0398806	0.1457061

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

$$\text{Chi2 (7)} = (\mathbf{b}-\mathbf{B})' [(\mathbf{V}_b-\mathbf{V}_B)^{-1}] (\mathbf{b}-\mathbf{B}) = 5.52$$

$$\text{Prob}>\text{chi2} = 0.7009$$

Source: Study Data (2016)

In order to select between the fixed and random effect models, where return on equity (ROE) is the dependent variable, the Hausman test is applied and the results are shown in Table 4.5. The null hypothesis of the Hausman test is that the random effects model is preferred to the fixed effects model. Hausman test results indicates a chi-square value of 5.52 with a P-value of 0.7009 meaning that the chi-square value is statistically insignificant at 5 percent level of significance. Hence, the study fails to reject the null hypothesis as suggested by Greene (2008). Thus, the study has adopted the models using random effects.

Table 4.6: Hausman Test for TQ

	Coefficients		(b-B)	Sqrt (diag (v_b_B))
	(b)	(B)		
	Fixed	Random	Difference	S.E.
IHP	-0.0019739	-0.0012261	-0.0007478	0.0005303
ARP	-0.0068376	-0.0072364	0.0003988	0.0007897
APP	0.0022345	0.0033259	-0.0010914	0.0004678
CCC	0.0011873	0.0014265	-0.0002392	0.000383
CR	-0.0054636	0.237311	-0.2427746	0.1175179
DSIZE	0.3488475	0.3492395	-0.000392	.
GROWTH	0.0594602	0.1062271	-0.0467669	0.006399
LEV	0.9506366	0.9257976	0.0248391	0.165236

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

$$\text{Chi2 (7)} = (b-B)' [(V_b - V_B)^{-1}] (b-B) = 16.87$$

$$\text{Prob} > \text{chi2} = 0.0315$$

Source: Study Data (2016)

In order to select between the fixed and random effect models, where Tobin-q (TQ) is the dependent variable, the Hausman test is applied and the output is given in Table 4.6. The null hypothesis of the Hausman test is that the random effects model is preferred to the fixed effects model. Hausman test output shows a chi-square value of 16.87 with a P-value of 0.00315 indicating that the chi-square value is statistically significant at 5 percent level of significance. Thus, the study has rejected the null hypothesis that random effects model is preferred to fixed effect model as suggested by Greene (2008). Hence, the study has adopted the models using fixed effects.

4.5 Correlation Analysis

Before running regression models as per the objectives, the study has conducted the correlation analysis for the various variables in order to examine the nature of the statistical relationships between each pair of variables. Table 4.7 shows the correlation matrix of all the variables included in the study.

Table 4.7: Correlation Matrix Results

	ROA	ROE	TQ	IHP	ARP	APP	CCC	CR	SIZE	GROWTH	LEV
ROA	1.000										
ROE	0.6454*	1.000									
TQ	0.5998*	0.3541*	1.000								
IHP	0.1373*	0.0838	0.1593*	1.000							
ARP	-0.2367*	-0.2528*	-0.1784*	0.1294*	1.000						
APP	0.2228*	0.0727	0.3705*	0.3894*	0.3196*	1.000					
CCC	0.1901*	0.2063*	0.1428*	0.2464*	0.0982	0.2221*	1.000				
CR	0.4724*	0.1855*	0.2864*	-0.998	-0.1034*	0.3008*	0.1021	1.000			
DSIZE	0.2512*	0.2326*	0.0980	-0.0706	0.0044	-0.0451	-0.0408	0.0081	1.000		
GROWTH	0.2507*	0.2075*	0.1029*	-0.1740*	-0.2173*	-0.1412*	-0.0408	0.0615	0.3811*	1.000	
LEV	-0.1453*	-0.0576	0.2529*	-0.0597	-0.0550	-0.0574	-0.1314*	-0.1942*	0.1337*	0.0158	1.000

(*) denote 5% level of significance

Source: Study Data (2016)

The results in Table 4.7 show that IHP, APP, CCC, CR, SIZE, and GROWTH have a significant positive relationship with ROA while ARP and LEV have a significant negative relationship with ROA. The results also show that CCC, CR, SIZE, and GROWTH have significant positive relationship with ROE, while ARP has significant negative relationship with ROE. Lastly, correlation results indicate that IHP, APP, CCC, CR, GROWTH, and LEV have significant positive relationship with TQ while ARP has significant negative relationship with TQ. The negative and significant relationship between ARP and financial performance as measured by ROA, ROE and TQ is consistent with the view articulated by Mathuva (2010) that the fewer the time taken by customers to settle their debts, the more cash is accessible to replenish the inventory accordingly resulting in more sales which lead to improved financial performance. The positive relationship between IHP and financial performance as measured by both ROA and TQ implies that firms, which keep high inventory levels, decrease the cost of probable disruptions in the production process. This aids in averting loss of business because of shortage of products and decreasing the cost of making available the goods (Blinder & Maccinni, 1991).

The positive relationship between APP and financial performance as measured by ROA and TQ implies that delaying payments to suppliers guarantee that the firm has sufficient funds to acquire more inventories for sale hence growing its sales levels thus advancing its financial performance (Deloof, 2003). The positive relationship between all financial performance measures and CCC, however, is inconsistent with the view that a longer CCC decreases profitability and vice versa (Nobanee, 2010). The positive relationship therefore suggests that the resources are locked up at different phases of the supply chain prolongs the cash conversion cycle. This may enhance profits due to improved sales,

particularly where the costs of blocked capital is fewer than the gains of holding more inventories and allowing more trade credit to customers (Padachi, 2006). Finally, the positive relationship between firm size and TQ means that larger firms achieve higher firm value compared to smaller counterparts due to the capability of larger firms to take advantage of their economies of scale (Mathuva, 2010).

4.6 Regression Analysis

This study is based on the premise that there is a relationship between short-term financing decisions and financial performance of firms but this relationship is mediated by cash holdings and moderated by firm characteristics. In addition, the growth opportunities, leverage and size of the firm directly influence the financial performance firms. Further, it was hypothesised that interaction between various components of short-term financing decisions influence the financial performance firms. To establish the statistical significance of the respective hypotheses, regression analysis is conducted at 95% confidence level.

The results of the regression models used to test hypotheses and the discussions are presented in the subsequent sections. The discussion provides the interpretation of the empirical results by comparing them to the theoretical background; and findings of previous studies on short-term financing decisions and financial performance of listed non-financial firms presented in the literature review. It focuses on the major findings of the study and is structured according to the specific objectives of the study.

4.6.1 Test for Direct Effect

The first four objectives of the study are to determine the direct effect of Inventory Turnover Decisions, Accounts Receivable Turnover Decisions, Accounts Payable Turnover Decisions, and Cash Conversion Cycle Decisions on Financial Performance of

non-financial firms listed at the NSE, Kenya. Inventory Holding Period (IHP) measures inventory Turnover Decisions, Accounts Receivable Period (ARP) indicates Account Receivables Turnover Decisions, Account Payables Period (APP) measures Accounts Payable Turnover Decisions while the Cash Conversion Cycle (CCC) is a proxy for Cash Conversion Cycle Decisions. Return on Assets (ROA), Return on Equity (ROE) and Tobin-Q are used as Financial Performance measures. Consequently, ROA, ROE and TQ are regressed on IHP, ARP, APP and CCC including the control variables namely firm size (SIZE), growth opportunities (GROWTH) and financial leverage (LEV). The results are presented in Table 4.8, 4.9 and 4.10, and the discussions are provided subsequently.

4.6.1.1 Effect of Short-Term Financing Decisions on Return on Assets

Table 4.8 presents the results of FGLS regression Model 3.2 on the direct effect of Short-Term Financing Decisions on Return on Assets.

Table 4.8: Regression Results with ROA

Variable	Coefficient	Standard Error	Z	P> z
IHP	0.0001125	0.0000938	1.20	0.230
ARP	-0.0011288*	0.0001514	-7.46	0.000
APP	0.0003515*	0.0000611	5.75	0.000
CCC	0.0001696*	0.0000599	2.83	0.005
DSIZE	0.1705*	0.0287589	5.93	0.000
GROWTH	0.0669415*	0.02577	2.60	0.009
LEV	-0.2109442*	0.0262705	-8.03	0.000
Constant	0.1915064*	0.0183334	10.45	0.000
Wald Chi Square (7) = 227.31		Prob > chi2 = 0.0000		
(*) denote 5% level of significance				

Source: Study Data (2016)

The results presented in Table 4.8 show that inventory holding period (IHP) has a positive but not statistically significant effect on return on assets (ROA) ($P=0.230>0.05$). The results in Table 4.8 also indicate that accounts receivable period (ARP), and financial leverage has statistically significant negative effects on return on assets (ROA) of non-financial firms listed at the NSE ($P<0.05$). The results shown in Table 4.8 further show that accounts payable period (APP), cash conversion cycle (CCC), size of the firms as measured by logarithm of total assets of each firm (SIZE), and growth opportunities as measured by revenue growth rate (GROWTH), have statistically significant positive effect on ROA of non-financial firms listed at the NSE ($P<0.05$). The Wald Chi square is highly significant at 5 percent significance level ($P=0.0000<0.05$).

4.6.1.2 Effect of Short-Term Financing Decisions on Return on Equity

Table 4.9 presents the results of FGLS regression Model 3.3 on the direct effect of Short-Term Financing Decisions on Return on Equity.

Table 4.9: Regression Results with ROE

Variable	Coefficient	Standard Error	Z	P> z
IHP	0.0002766	0.0003648	0.76	0.448
ARP	-0.003198*	0.0005887	-5.43	0.000
APP	0.0006403*	0.0002378	2.69	0.007
CCC	0.00074188*	0.000233	3.18	0.001
DSIZE	0.4666131*	0.1118498	4.17	0.000
GROWTH	0.2504875*	0.1002254	2.50	0.012
LEV	-0.3270136	0.1021719	-3.20	0.001
Constant	0.3259225	0.0713026	4.57	0.000
Wald Chi Square (7) = 97.18 Prob > chi2 = 0.0000				
(*) denote 5% level of significance				

Source: Study Data (2016)

The results in Table 4.9 reveal that inventory holding period (IHP) has positive but not statistically significant effect on return on assets (ROE) ($P=0.448>0.05$). The results in Table 4.9 also show that accounts receivable period (ARP), and financial leverage (LEV) have statistically significant negative effect on return on equity (ROE) of non-financial companies listed at the NSE at 5 percent level ($P<0.05$). The results presented in Table 4.8 further indicate that the coefficients of accounts payable period (APP), cash conversion cycle decisions as measured by cash conversion cycle (CCC), size of the firms (SIZE), and growth opportunities (GROWTH), have statistically significant positive effect on ROE of non-financial firms listed at the NSE at 5 percent level ($P<0.05$). The results additionally indicate that Wald Chi square highly significant ($P=0.000<0.05$), suggesting that jointly all the independent variables determine return on equity.

4.6.1.3 Effect of Short-Term Financing Decisions on Tobin-Q

Table 4.10 presents the results of FGLS regression Model 3.4 on the direct effect of Short-Term Financing Decisions on Tobin-Q.

Table 4.10: Regression Results with TQ

Variable	Coefficient	Standard Error	Z	P> z
IHP	0.008635	0.0010195	0.85	0.397
ARP	-0.0111736*	0.0016453	-6.79	0.000
APP	0.0061682*	0.0006646	9.28	0.000
CCC	0.0015428*	0.0006513	2.37	0.018
DSIZE	0.6459203*	0.3126074	2.07	0.039
GROWTH	0.3287514	0.2801185	1.17	0.241
LEV	0.1394947	0.2855586	0.49	0.625
Constant	1.196227*	0.1992825	6.00	0.000
Wald Chi Square (7) = 147.16		Prob > chi2 = 0.0000		
(*) denote 5% level of significance				

Source: Study Data (2016)

The results presented in Table 4.10 show that inventory holding period (IHP) and financial leverage (LEV) has positive but not statistically significant effect on Tobin-q (TQ) at 5 percent level ($P=0.397>0.05$). The results in Table 4.10 also indicate that the coefficient of accounts receivable period (ARP) has statistically significant negative effect on Tobin-q (TQ) of non-financial firms listed at the NSE at 5 percent level ($P<0.05$). The results depicted in Table 4.9 further reveal that the coefficient of accounts payable period (APP), cash conversion cycle decisions as measured by cash conversion cycle (CCC), and size of the firms as measured by logarithm of total assets of each firm (SIZE) have statistically significant and positive effect on TQ of non-financial firms listed at the NSE at 5 percent level ($P<0.05$). The results additionally indicated that Wald Chi square highly significant 5 percent level, implying that jointly all the independent variables determine TQ ($P=0.0000<0.05$).

4.6.2 Test for Interaction Effect

The sixth objective is to determine the interaction effect of short-term financing decisions on financial performance of firms listed at the NSE, Kenya. The interaction terms are included as shown in equations 3.5, 3.6 and 3.7. The study has interacted inventory turnover decisions with accounts receivable turnover decisions; inventory turnover decisions with accounts payable turnover decisions; and accounts receivable turnover decisions with accounts payable turnover decisions. In order to estimate the interaction effect of the interactive terms, the study used the marginal effects since the interaction results into non-linear model. The results of these interactions using return on assets (ROA), return on equity (ROE) and Tobin-q (TQ) as the dependent variables are presented in Table 4.11, 4.12 and 4.13.

4.6.2.1 Interaction Effect of Short-Term Financing Decisions on ROA

The study seeks to determine the interaction effect of the short-term financing decisions on return on assets of non-financial firms listed at the NSE. The regression results on the interaction effect of short-term financing decisions on ROA are presented in Table 4.11.

Table 4.11: Interaction Effect of Short-Term Financing Decisions on ROA

Variable	Coefficient	Standard Error	Z	P> Z
IHP	0.000649*	0.0002437	2.66	0.008
ARP	-0.0003441	0.0003125	-1.10	0.271
APP	0.0009171*	0.0001994	4.60	0.000
CCC	0.0001932*	0.0000592	3.26	0.001
DSIZE	0.1578678*	0.0280836	5.62	0.000
GROWTH	0.0584203*	0.0250823	2.33	0.020
LEV	-0.1946851*	0.0257259	-7.57	0.000
IHP*ARP	-4.76e-06	2.95e-06	-1.62	0.106
IHP*APP	-2.50e-06*	1.18e-06	-2.12	0.034
ARP*APP	-3.54e-06*	2.29e-06	-1.55	0.121

(*) denote 5% level of significance

Source: Study Data (2016)

The regression results presented in Table 4.11 indicates that the effect of the interaction term between inventory holding period (IHP) and accounts receivable period (ARP) on return on assets (ROA) was statistically insignificant at 5 percent level ($P > 0.05$). The results also shows that the coefficient of the interaction term between inventory holding period (IHP) and accounts payable period (APP) has a negative and statistically significant effect on return on assets (ROA) at 5 percent level ($P < 0.05$). The results further indicates that the coefficient of the interaction term between accounts receivable period (ARP) and accounts payable period (APP) has no statistically significant effect on ROA of non-financial firms listed at the NSE at 5 percent level of significance ($P > 0.05$).

The negative coefficient of the interaction term between inventory holding period (IHP) and accounts receivable period (ARP) implies that an increase in IHP by 1 day results to a decrease in ROA by $2.50e-06$ percent subject to ARP and, an increase in ARP by 1 day leads to a decrease in ROA subject to IHP by $2.50e-06$ percent.

4.6.2.2 Interaction Effect of Short-Term Financing Decisions on ROE

The study seeks to establish the interaction effect of the short-term financing decisions on return on equity of non-financial firms listed at the NSE. Table 4.12 presents the regression results for the interaction effect of short-term financing decisions on ROE.

Table 4.12: Interaction Effect of Short-Term Financing Decisions on ROE

Variable	Coefficient	Standard Error	Z	P> Z
IHP	0.0009291	0.0009714	0.96	0.339
ARP	-0.0041922*	0.0012455	-3.37	0.001
APP	0.0022338*	0.0007948	2.81	0.005
CCC	0.0008092*	0.0002361	3.43	0.001
DSIZE	0.458148*	0.1119453	4.09	0.000
GROWTH	0.2270563*	0.0999816	2.27	0.023
LEV	-0.3318649*	0.1025473	-3.24	0.001
IHP*ARP	$8.93e-06$	0.0000117	0.76	0.447
IHP*APP	-0.000016*	$4.69e-06$	-2.48	0.013
ARP*APP	$-1.98e-06$	$9.11e-06$	-0.22	0.828

(*) denote 5% level of significance

Source: Study Data (2016)

The results presented in Table 4.12 reveal that the effect of interaction term between inventory holding period (IHP) and accounts receivable period (ARP) on return on equity (ROE) is statistically insignificant at 5 percent level ($P>0.05$). The results also indicate that the interaction term between inventory holding period (IHP) and accounts payable

period (APP) has negative and statistically significant effect on ROE at 5 percent significance level ($P < 0.05$). The results further indicates that the effect of interaction term between accounts receivable period (ARP) and accounts payable period (APP) on return on equity (ROE) is statistically significant at 5 percent significance level. The negative coefficient of the interaction term between inventory holding period (IHP) and accounts payable period (APP) implies that for every 1 day increase in IHP, the slope of ROE on APP decreases by 0.000016 percent and, for every 1 day increase in APP, the slope of ROE on IHP decreases by 0.000016 percent.

4.6.2.3 Interaction Effect of Short-Term Financing Decisions on TQ

The study sets out to determine the interaction effect of the short-term financing decisions on Tobin-q (TQ) of non-financial firms listed at the NSE. Table 4.13 presents the regression results for the interaction effect of short-term financing decisions on TQ.

Table 4.13: Interaction Effect of Short-Term Financing Decisions on TQ

Variable	Coefficient	Standard Error	Z	P> Z
IHP	0.0021688	0.0026143	0.83	0.407
ARP	-0.0039852	0.0033521	-1.19	0.234
APP	0.0173962*	0.0021391	7.84	0.000
CCC	0.0167605*	0.0006354	2.54	0.011
DSIZE	0.4360507	0.301286	1.45	0.148
GROWTH	0.2615275	0.2690873	0.97	0.331
LEV	0.2830062*	0.2759925	1.03	0.305
IHP*ARP	0.0000245*	0.0000316	0.77	0.438
IHP*APP	-0.0000329*	0.0000126	-2.60	0.009
ARP*APP	-0.000886*	0.0000245	-3.61	0.000

(*) denote 5% level of significance

Source: Study Data (2016)

The results presented in Table 4.13 reveal that the effect of the interaction term between inventory holding period (IHP) and accounts receivable period (ARP) on Tobin-q (TQ) is statistically insignificant at 5 percent level ($P > 0.05$). The results also shows that the interaction term between inventory holding period (IHP) and accounts payable period (APP) has negative and statistically significant effect on TQ non-financial firms listed at the NSE at 5 percent level ($P < 0.05$). The negative coefficient of the interaction term between IHP and APP implies that an increase in IHP by 1 day results to a decrease in TQ by 0.0000329 percent subject to APP and, an increase in APP by 1 day leads to a decrease in TQ subject to IHP by 0.0000329 percent. The results further indicate that the coefficient of the interaction term between accounts receivable period (ARP) and accounts payable period (APP) has negative and statistically significant effect on TQ at 5 percent level. The negative coefficient of the interaction term implies that for every 1 day increase in ARP, the slope TQ on APP decreases by 0.000886 percent and, for every 1 day increase in APP, the slope TQ on ARP decreases by 0.000886 percent.

4.6.3 Test For Mediating Effect

The fifth objective of the study is to establish the mediating effect of cash holdings on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE, Kenya. In order to achieve this objective, the Baron and Kenny (1986) approach in testing for mediation has been employed. The mediating variable is included in the model as shown in equations 3.8 to 3.11.

4.6.3.1 Mediating effect of Cash Holdings on the relationship between Short-Term Financing Decisions and ROA

The study sets out to assess the mediating effect of the cash holdings on the relationship between short-term financing decisions and return on assets of non-financial firms listed at the NSE. The regression results are presented in Appendix VIII. In the first step,

model 3.2 is estimated as the base model to determine whether inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), and cash conversion cycle (CCC) have statistically significant effect on ROA. The regression results presented in Table A.11 reveal that the effect of IHP on ROA is not statistically significant at 5 percent level. The results also indicates that the effect of accounts receivable period (ARP) on ROA is negative and statistically significant at 5 percent level. The results further show that effect of accounts payable period (APP), and cash conversion cycle (CCC), is positive and statistically significant at 5 percent level. Therefore, the effect of ARP, APP, and CCC on ROA meets the first mediation condition that the effect of the independent variable on the dependent variable in the absence of the mediating variable should be statistically significant.

In step two, model 3.8 is estimated to establish whether the independent variables namely inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), cash conversion cycle (CCC) and the control variables of size of the company (SIZE), growth opportunities (GROWTH), and financial leverage (LEV) have statistically significant effect on the mediator variable namely cash holdings (CR). The results presented in Table A.12 reveals that the effect of IHP and ARP on CR is negative and statistically significant at 5 percent level. The results also indicate that the effect of accounts payable period (APP) on CR is positive and statistically significant at 5 percent level. However, the effect of CCC on CR is negative but not statistically significant at 5 percent level. Thus, the effect of IHP, ARP, and APP on CR satisfies the second mediation condition that the effect of the independent variable on the mediator variable should be statistically significant.

In step three, the study has estimated model 3.9 to determine the effect of the independent variables (Short-Term Financing Decisions) including the mediating variable (cash holdings) as one of the explanatory variables on the dependent variable (Return on Assets). The regression results presented in Table A.13 show that the effect cash holding on Return on Assets is positive and statistically significant at 5 percent level. The results also reveal that the effect of IHP, APP and CC on ROA are positive and statistically significant at 5 percent level. The results presented in Table A.13 further indicate that the effect of accounts receivable period (ARP) on ROA is negative and statistically significant at 5 percent level. Therefore, the third condition which states that the effect of the mediator variable on the dependent variable should be statistically significant is satisfied. However, the effect of IHP, ARP, APP, and CCC on ROA does not fulfill the fourth mediation condition that the effect of the independent variables on the dependent variable in the presence of the mediating variable should be statistically insignificant.

In step four, a decision is made on whether cash holdings has a complete, partial or no mediation effect on the relationship between short-term financing decisions and financial performance as measured by ROA. The results of the three regression models 3.2, 3.8 and 3.11 are summarised in Table 4.14.

Table 4.14 Regression Results for the Mediating Effect (Dependent Variable: ROA)

Variable	Model 3.2–Base Model (Step 1)		Model 3.8 (Step 2 Mediation)		Model 3.9 (Step 3)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.001125	0.230	-.00091	0.000	.00027	0.006	-.000855	.006<.05
Accounts Receivable Period	-.00113	0.000	-.00128	0.000	-.0009	0.000	-.00023	.000<.05
Accounts Payable Period	.000352	0.000	.000874	0.000	.00021	0.002	-.000142	.002<.05
Cash Conversion Cycle	.000170	0.005	.000075	0.408	.00016	0.007	-.00001	.007<.05
Cash Holdings	–	–	–	–	.16804	0.000	.16804	.000<.05

Source: Study Data (2016)

Table 4.14 shows that the first results under model 3.2, the coefficient of Inventory Holding Period is positive and but not significant ($\beta=0.001125$ and P-value = 0.230 >0.05), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.00113$ and P-value = 0.000 < 0.05), the coefficient of Accounts Payable Period is positive and significant ($\beta=0.000352$ and P-value = 0.000 < 0.05), while the coefficient of Cash Conversion Cycle is found to be positive and significant ($\beta=0.000170$ and P value = 0.005 < 0.05). In the second model 3.8, the coefficient of Inventory Holding Period is negative and significant ($\beta=-0.00091$ and P-value = 0.000 < 0.05), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.000128$ and P value = 0.000 < 0.05), the coefficient of Accounts Payable Period is positive and significant ($\beta=0.000874$ and P-value = 0.000 < 0.05), while the coefficient of Cash Conversion Cycle is found to be positive and but not significant ($\beta=0.000075$ and P-value = 0.408 > 0.05).

In the third model 3.9, the regression output shows that the mediating variable coefficient is positive and significant at 0.16804 and P-value = 0.000 < 0.05. According to Baron and Kenny (1986) the results of the three regression models are interpreted using the coefficient of the independent variables before and after the mediation and the significance level of the mediator variable after mediation. The results in Table 4.14 show that Inventory Holding Period coefficient in model 3.2 is 0.001125 > 0.00027 in model 3.9, where in model 3.2 it is not significant with a P-Value of 0.230 but significant in model 3.9 with a P-Value of 0.006. Accounts Receivable Period coefficient in model 3.2 is -0.00113 > -0.0009 in model 3.9 and significant with a P-Value of 0.000 in both models, while Accounts Payable Period coefficient in model 3.2 is 0.000352 > 0.00021 in model 3.9 and significant in both models (P-value < 0.05). Finally, the coefficient of the Cash Conversion Cycle in model 3.2 is 0.000170 > 0.00016) and significant with a P-Value of in both models (P-value < 0.05), while the coefficient of the mediating variable is positive and significant at 0.16804 and P-value = 0.000.

By combining the results in Appendix 8 and Table 4.14, and applying, the decision criteria depicted in Table 3.1, the models satisfies three conditions of partial mediation. In model 3.2 the coefficients are significant (except inventory holding period coefficient), and in model 3.8 the coefficients are also significant(except Cash Conversion Cycle coefficient). Finally, in model 3.8, the coefficients are expected to be greater than coefficients in model 3.2 and whether significant or not but the mediating coefficient must be significant. Based on these results, the study therefore, concludes that cash holdings partially mediates the relationship between accounts receivable period and return on assets of non-financial firms listed at the NSE. The study further deduces that cash holdings partially mediates the relationship between accounts payable period and return on assets of non-financial firms listed at the NSE. However, it is established that cash

holdings has no mediating effect on the relationship inventory holding period and cash conversion cycle on one hand and return on assets as recommended by Baron and Kenny (1986).

4.6.3.2 Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and ROE

The study sets out to establish the mediating effect of the cash holdings on the relationship between short-term financing decisions and return on equity of non-financial firms listed at the NSE. The regression results are presented in Appendix IX. In the first step, model 3.3 is estimated as the base model to determine whether inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), and cash conversion cycle (CCC) have statistically significant effect on ROE. The regression presented in Table A.14 results show that the effect of IHP on ROE is not statistically significant at 5 percent level. The results further revealed that the effect of accounts receivable period (ARP) on ROE is negative and statistically significant at 5 percent level. The results further show that effect of accounts payable period (APP), and cash conversion cycle (CCC), is positive and statistically significant at 5 percent level. Thus, the effect of ARP, APP, and CCC on ROE fulfils the first mediation condition that the effect of the independent variable on the dependent variable in the absence of the mediating variable should be statistically significant.

In step two, model 3.8 estimates whether the independent variables namely inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), cash conversion cycle (CCC) and the control variables of size of the company (SIZE), growth opportunities (GROWTH), and financial leverage (LEV) have statistically significant effect on the mediator variable namely cash holdings (CR). The results

presented in Table A.15 reveals that the effect of IHP and ARP on CR is negative and statistically significant at 5 percent level. The results also indicate that the effect of accounts payable period (APP) on CR is positive and statistically significant at 5 percent level. However, the effect of CCC on CR is negative but not statistically significant at 5 percent level. Thus, the effect of IHP, ARP, and APP on CR satisfies the second mediation condition that the effect of the independent variable on the mediator variable should be statistically significant.

In step three, model 3.10 estimates the effect of the independent variables (Short-Term Financing Decisions) including the mediating variable (cash holdings) as one of the explanatory variables on the dependent variable (Return on Equity). The regression results presented in Table A.16 show that the effect Cash Holding on Return on Equity is negative but statistically insignificant at 5 percent level. The results also reveal that the effect of IHP on ROE is positive but statistically insignificant at 5 percent level. The results present in Table A.16 further indicates that the effect of accounts receivable period (ARP) on ROE is negative and statistically significant at 5 percent level. Finally, the output shows that APP and CCC have positive and statistically significant effect on ROE. Thus, the third condition which states that the effect of the mediator variable on the dependent variable should be statistically significant is not fulfilled. Furthermore, only the effect of IHP on ROE satisfies the fourth mediation condition that condition that the effect of the independent variable on the dependent variable in the presence of the mediating variable should be statistically insignificant. The results reveal that the effect of accounts receivable period (ARP) on ROE is negative and statistically significant at 5 percent level. Additionally, effect of APP and CC on ROE is positive and statistically significant. Hence, the effect of ARP, APP, and CCC on ROE does not fulfill the fourth mediation condition.

In step four, a decision is made on whether cash holdings has a complete, partial or no mediation effect on the relationship between short-term financing decisions and financial performance as measured by ROE. The results of the three regression models 3.3, 3.8 and 3.10 are summarised in Table 4.15.

Table 4.15 Regression Results for the Mediating Effect (Dependent Variable: ROE)

Variable	Model 3.3– Base Model (Step 1)		Model 3.8 (Step 2 Mediation)		Model 3.10 (Step 3)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.000277	0.448	-.00091	0.000	.00025	0.514	-.000027	.514>.05
Accounts Receivable Period	-.00320	0.000	-.00128	0.000	-.00323	0.000	-.00003	.000<.05
Accounts Payable Period	.000640	0.007	.000874	0.000	.00066	0.013	.00002	.013<.05
Cash Conversion Cycle	.000742	0.001	.000075	0.408	.00074	0.001	-.00002	.001<.05
Cash Holdings	–	–	–	–	-.02705	0.848	-.02705	.848>.05

Source: Study Data (2016)

Table 4.15 shows that the first results under model 3.3, the coefficient of Inventory Holding Period is positive and but not significant ($\beta=0.000277$ and P-value = $0.448 > 0.05$), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.00320$ and P-value = $0.000 < 0.05$), the coefficient of Accounts Payable Period is positive and significant ($\beta=0.000640$ and P-value = $0.007 < 0.05$), while the coefficient of Cash Conversion Cycle is found to be positive and significant ($\beta=0.000742$ and P-value = $0.001 < 0.05$). In the second model 3.8, , the coefficient of Inventory Holding Period is negative and significant ($\beta=-0.00091$ and P-value = $0.000 < 0.05$), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.000128$ and P-value = $0.000 < 0.05$), the coefficient of Accounts Payable Period is positive and

significant ($\beta=0.000874$ and $P\text{-value} = 0.000 < 0.05$), while the coefficient of Cash Conversion Cycle is found to be positive and but not significant ($\beta=0.000075$ and $P\text{-value} = 0.408 < 0.05$).

In the third model 3.10, the regression output shows that the mediating variable (cash holding) coefficient is negative but not significant at -0.02705 and $P\text{-value} = 0.848 > 0.05$. According to Baron and Kenny (1986) the results of the three regression models are interpreted using the coefficient of the independent variables before and after the mediation and the significant level of the mediator variable after mediation. The results in Table 4.15 further show that Inventory Holding Period coefficient in model 3.3 is $0.000277 > 0.00025$ in model 3.10 but not significant with P-values greater than 5 percent level in both models. Accounts Receivable Period coefficient in model 3.3 is $-0.00320 > -0.00323$ in model 3.6 and significant with a P-value of 0.000 in both models, while Accounts Payable Period coefficient in model 3.3 is $0.000640 > 0.00066$ in model 3.10 and significant in both models ($P\text{-value} < 0.05$). Finally, the coefficient of the Cash Conversion Cycle in model 3.3 is $0.000742 > 0.00074$ and significant with a P-value of 0.001 in both models, while the coefficient of the mediating variable is negative but not significant at -0.02705 and $P\text{-value} = 0.848$.

By combining the results in Appendix 9 and Table 4.15, and applying, the decision criteria depicted in Table 3.1, the models do not satisfy the four conditions of partial mediation. In model 3.3 the coefficients are significant (except inventory holding period coefficient), and in model 3.8 the coefficients are also significant (except Cash Conversion Cycle coefficient). Finally, in model 3.10, the coefficients are expected to be greater than coefficients in model 3.3 whether significant or not but the mediating coefficient must be significant. Based on these results, the study therefore, concludes that cash holdings do

not mediate the relationship between short-term financing decisions and return on equity of non-financial firms listed at the NSE as recommended by Baron and Kenny (1986).

4.6.3.3 Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and TQ

The study seeks to determine the mediating effect of the cash holdings on the relationship between short-term financing decisions and Tobin-q (TQ) of non-financial firms listed at the NSE. The regression results are presented in Appendix X. In the first step, model 3.4 is estimated as the base model to determine whether inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), and cash conversion cycle (CCC) have statistically significant effect on TQ. The regression output presented in Table A.17 results show that the effect of IHP on TQ is not statistically significant at 5 percent level. The results further indicates that the effect of accounts receivable period (ARP) on TQ is negative and statistically significant at 5 percent level. The results further show that effect of accounts payable period (APP), and cash conversion cycle (CCC), is positive and statistically significant at 5 percent level. Therefore, the effect of ARP, APP, and CCC on TQ satisfies the first mediation condition that the effect of the independent variable on the dependent variable in the absence of the mediating variable should be statistically significant.

In step two, model 3.8 is estimated to determine whether the independent variables namely inventory holding period (IHP), accounts receivable period (ARP), accounts payable period (APP), cash conversion cycle (CCC) and the control variables of size of the company (SIZE), growth opportunities (GROWTH), and financial leverage (LEV) have statistically significant effect on the mediator variable namely cash holdings (CR). The regression results presented in Table A. 18 indicate that the effect of IHP and ARP

on CR is negative and statistically significant at 5 percent level. The results further reveal that the effect of accounts payable period (APP) on CR is positive and statistically significant at 5 percent level. However, the effect of CCC on CR is not statistically significant at 5 percent level. Thus, the effect of IHP, ARP, and APP on CR fulfills the second mediation condition that the effect of the independent variable on the mediator variable should be statistically significant.

In step three, model 3.11 estimates the effect of the independent variables (Short-Term Financing Decisions) including the mediating variable (cash holdings) as one of the explanatory variables on the dependent variable (Tobin-q). The regression results presented in Table A.19 show that the effect Cash Holding on Tobin-q as measured by the cash ratio (CR) has positive and statistically significant effect on Tobin-Q (TQ). The results presented in Table A.19 also reveal that the effect of IHP on TQ is statistically insignificant at 5 percent level. The results further indicate that the effect of accounts receivable period (ARP) on TQ is negative and statistically significant at 5 percent level. Finally, the results show that APP and CCC have positive and statistically significant effect on TQ. Therefore, the third condition which states that the effect of the mediator variable on the dependent variable should be statistically significant is satisfied. Furthermore, only the effect of IHP on TQ satisfies the fourth mediation condition that the effect of the independent variable on the dependent variable in the presence of the mediating variable should be statistically insignificant.

In step four, a decision is made on whether cash holdings has a complete, partial or no mediation effect on the relationship between short-term financing decisions and financial performance as measured by TQ. The results of the three regression models 3.4, 3.8 and 3.11 are summarised in Table 4.16.

Table 4.16 Regression Results for the Mediating Effect (Dependent Variable: TQ)

Variable	Model 3.4 –Base Model (Step 1)		Model 3.8 (Step 2)		Model 3.11 (Step 3)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.000864	0.397	-.00091	0.000	.00198	0.062	.001116	.062>.05
Accounts Receivable Period	-.01117	0.000	-.00128	0.000	-.00959	0.000	-.00158	.000<.05
Accounts Payable Period	.006168	0.000	.000874	0.000	.00509	0.000	-.001078	000<.05
Cash Conversion Cycle	.00154	0.018	.000075	0.408	.00145	0.024	-.00009	.024<.05
Cash Holdings	–	–	–	–	1.2132	0.001	1.2132	001<.05

Source: Study Data (2016)

Table 4.16 shows that the first results under model 3.4, the coefficient of Inventory Holding Period is positive and but not significant ($\beta=0.000864$ and P-value = $0.397 > 0.05$), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.01117$ and P-value = $0.000 < 0.05$), the coefficient of Accounts Payable Period is positive and significant ($\beta=0.006168$ and P-value = $0.000 < 0.05$), while the coefficient of Cash Conversion Cycle is found to be positive and significant ($\beta=0.000154$ and P-value = $0.018 < 0.05$). In the second model 3.5, the coefficient of Inventory Holding Period is negative and significant ($\beta=-0.00091$ and P-value = $0.000 < 0.05$), the coefficient of Accounts Receivable Period is negative and significant ($\beta=-0.000128$ and P value = $0.000 < 0.05$), the coefficient of Accounts Payable Period is positive and significant ($\beta=0.000874$ and P value = $0.000 < 0.05$), while the coefficient of Cash Conversion Cycle is found to be positive and but not significant ($\beta=0.000075$ and P value = $0.408 < 0.05$).

In the third step (model 3.11), the regression output shows that the mediating variable (cash holding) coefficient is positive and significant at 1.2132 and P-value = $0.001 < 0.05$.

According to Baron and Kenny (1986) the results of the three regression models are interpreted using the coefficient of the independent variables before and after the mediation and the significant level of the mediator variable after mediation. The regression output in Table 4.16 further reveal that Inventory Holding Period coefficient in model 3.4 is $0.000864 < 0.00198$ in model 3.8 but not significant in both models with P-values greater than 5 percent level. Accounts Receivable Period coefficient in model 3.4 is $-0.01117 > -0.00959$ in model 3.11 and significant with a P-values of 0.000 in both models, while Accounts Payable Period coefficient in model 3.4 is $0.006168 > 0.00509$ in model 3.8 and significant in both models (P-value=0.00<0.05). Finally, the coefficient of the Cash Conversion Cycle in model 3.4 is $0.000154 > 0.00145$) and significant with a P-value of 0.001 in both models, while the coefficient of the mediating variable is positive and significant at 1.2132 and P-value = 0.001.

By combining the results in Appendix 10 and Table 4.16, and applying, the decision criteria depicted in Table 3.1, the models satisfies three conditions of partial mediation. In model 3.4 the coefficients are significant (except inventory holding period coefficient), and in model 3.5 the coefficients are also significant(except Cash Conversion Cycle coefficient). Finally, in model 3.11, the coefficients are expected to be greater than coefficients in model 3.4 whether significant or not but the mediating coefficient must be significant. Based on these results, the study therefore, deduces that cash holdings partially mediate the relationship between accounts receivable period and TQ of non-financial firms listed at the NSE. The study further deduces that cash holdings partially mediates the relationship between accounts payable period and TQ of non-financial firms listed at the NSE. However, it is established that cash holdings has no mediating effect on the relationship inventory holding period and cash conversion cycle on one hand and TQ as recommended by Baron and Kenny (1986).

4.6.4 Test for Moderating Effect

The seventh objective of this study seeks to determine the moderating effect of firm characteristics on the relationship between short-term financing and financial performance of non-financial firms listed at the NSE. The corresponding hypothesis (H_{07}) states that firm characteristics have no significant moderating effect on the relationship between short-term financing and financial performance of non-financial firms listed at the NSE. The purpose is to verify how firm-specific factors may influence the effect of short-term financing decisions on financial performance. The study hypothesizes that firm characteristics modifies the sign and intensity of the effect of short-term financing decisions on financial performance. To test the moderating effect of firm characteristics on the relationship between short-term financing decisions and financial performance, Keppel and Zedeck (1989) two-step procedure is used. The regression results are presented in Table 4.17, 4.18 and 4.19.

4.6.4.1 Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and ROA

The study seeks to determine the the moderating effect of firm characteristics on the relationship between short-term financing and ROA of non-financial firms listed at the NSE. In the first step, model 3.2, which includes firm characteristics namely Firm Size, Growth Opportunities and Financial Leverage as explanatory variables is estimated as the base model to determine the relationship between the independent variables (short-term financing decisions) and the dependent variables (return on assets). The regression results based on model 3.2 are presented in Table 4.8 and reveal that short-term financing decisions and firm characteristics are jointly significant in explaining financial performance as measured by ROA. This satisfies the first explanatory condition where firm characteristics should be significant (Mackinnon *et al.*, 2007). In the second step,

model 3.12 is estimated where the products of short-term financing decisions (inventory holding period, accounts receivable period and accounts payable period) and firm characteristics are used to estimate the moderating effect. The study has omitted the cash conversion cycle due to the existence of collinearity. Table 4.17 presents the regression results.

Table 4.17: Moderation Effect Regression Results with ROA

ROA	Coefficient	Standard Error	Z	P> Z
IHP	0.0002878	0.0002619	1.10	0.252
ARP	-0.0017123*	0.0004628	-3.70	0.000
APP	0.0003178	0.0001749	1.82	0.069
DSIZE	-0.0822905	0.0792236	-1.04	0.299
GROWTH	0.1308696*	0.0594856	2.20	0.028
LEV	-0.2599198*	0.0704869	-3.69	0.000
IHP*DSIZE	0.0015664*	0.0007613	2.06	0.040
IHP*GROWTH	-0.000249	0.000592	-0.42	0.674
IHP*LEV	-0.0006249	0.0005478	-1.14	0.254
ARP*DSIZE	0.0024241*	0.0011912	2.04	0.042
ARP*GROWTH	-0.0002679	0.0009412	-0.28	0.776
ARP*LEV	-0.0009307	0.0007286	0.83	0.405
APP*DSIZE	-0.0004341	0.0004885	-0.89	0.374
APP*GROWTH	-0.0000977	0.0004801	-0.20	0.839
APP*LEV	0.0003009	0.0004272	0.70	0.481
Constant	0.2323773	0.036564	6.36	0.000

(*) denote 5% level of significance

Source: Study Data (2016)

The regression results in Table 4.17 show that Inventory Holding Period coefficient is positive but not statistically significant ($\beta=0.0002878$ and $P\text{-value} = 0.252 > 0.05$) while the coefficient of Accounts Receivable Period is negative and highly significant

($\beta = -0.0017123$ and $P\text{-value} = 0.000 < 0.05$). The results also reveal that Accounts Payable Period coefficient is positive but not statistically significant ($\beta = 0.0003178$ and $P\text{-value} = 0.069 > 0.05$) while Firm Size coefficient is negative but not statistically significant ($\beta = 0.0822905$ and $P\text{-value} = 0.299 > 0.05$). The results further reveal that the coefficient of Growth Opportunities is negative and statistically significant ($\beta = -0.01308696$ and $P\text{-value} = 0.028 < 0.05$) while Financial Leverage coefficient is negative and highly significant ($\beta = -0.2599198$ and $P\text{-value} = 0.000 < 0.05$).

The regression results presented in Table 4.17 indicate that the coefficient of the interaction between inventory holding period (IHP) and revenue growth (GROWTH), and the interaction between inventory holding period (IHP) and financial leverage (LEV) are not statistically significant at 5 percent ($P > 0.05$). Therefore, the results show that the presence of revenue growth and financial leverage in the companies does not change the effect of inventory holding period on return on assets of non-financial firms listed at the NSE. However, the coefficient of the interaction between IHP and size of the firm (SIZE) is positive and statistically significant ($\beta = 0.0015664, P = 0.040$). The result suggests that the size of the firm intensifies the effect of IHP on ROA.

The regression results in Table 4.17 also show that the coefficient of the interaction between accounts receivable period (ARP) and size of the firm (SIZE), is positive and statistically significant ($\beta = 0.0024241, P = 0.0402$). The result implies that the direction of the relationship between accounts receivable period (ARP) on return on assets (ROA) changes from negative to positive depending on the size of the firm. However, the coefficients of the interaction between ARP and growth opportunities (GROWTH), and the interaction between ARP and proportion of debt in total assets are not statistically significant at 5 percent ($P > 0.05$). The results suggest that the presence

of growth opportunities and proportion of debt in total assets do not change the effect of ARP on ROA of non-financial firms listed at the NSE.

The regression results in Table 4.17 further indicate that the coefficient of the interaction between accounts payable period (APP) and size of the firm (SIZE), the interaction between accounts payable period (APP) and growth opportunities (GROWTH), and the interaction between accounts payable period (APP) and financial leverage (LEV) are not statistically significant at 5 percent ($P > 0.05$). The results implies that the effect of APP on ROA of non-financial firms listed at the NSE is weakened by the size of the company, their growth opportunities and the proportional of debt in their total assets.

Mackinnon *et al.* (2007) asserts that when the coefficients in model 3.12 are not significant and the firm characteristics coefficients in model 3.2 are significant, there is no moderating effect. Table 4.18 presents the summary in the change of the coefficient significance when firm characteristics is introduced in the model as a product of short-term financing decisions.

Table 4.18 Summary Results for Moderating Effect (Dependent Variable: ROA)

Variable	Model 3.2 (Before Moderation)		Model 3.12 (After Moderation)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.0001125	0.230	.0002878	0.272	.0001753	.272>.05
Accounts Receivable Period	-.0011288	0.000	-.0017123	0.000	-.0005835	.000<.05
Accounts Payable Period	.0003515	0.000	.0003178	0.069	-.000337	.069>.05
Firm Size	.1705	0.000	-.0822905	0.299	-.0882095	.299>.05
Growth Opportunities	.0669415	0.009	.1308696	0.028	0.0639281	.028<.05
Financial Leverage	-.2109442	0.000	-.2599198	0.000	0.0489756	.000<.05

Source: Study Data (2016)

The regression results in Table 4.18 show that Inventory Period coefficient is not significant before moderation ($\beta=0.0001125$, $P=0.230>0.05$) and not significant after moderation either ($\beta=0.0002878$, $P=0.272>0.05$), Accounts Receivable Period coefficient is highly significant before moderation ($\beta=-0.0011288$, $P=0.000<0.05$) and also highly significant after moderation at ($\beta=-0.0005835$, $P=0.000<0.05$) while that of Accounts Payable Period is highly significant before moderation ($\beta=0.0003515$, $P=0.000<0.05$) and not significant after moderation ($\beta=-0.000337$, $P=0.069>0.05$). The results also indicate that the coefficient of Firm size is highly significant before moderation ($\beta=0.1705$, $P=0.000<0.05$) but insignificant after moderation ($\beta=-0.0822905$, $P=0.299>0.05$), Growth Opportunities coefficient is significant ($\beta=0.0669415$, $P=0.009<0.05$) and also significant after moderation ($\beta=0.1308696$, $P=0.028<0.05$). The results further reveal that Financial Leverage coefficient is highly significant ($\beta=-0.2109442$, $P=0.000<0.05$) and also highly significant after moderation ($\beta=-0.2599198$, $P=0.000<0.05$). Based on the moderation rule by Mackinnon *et al.* (2007), Firm Size is just an explanatory variable while Growth Opportunities and Financial Leverage are moderating variables.

4.6.4.2 Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and ROE

The study set out to establish the moderating effect of firm characteristics on the relationship between short-term financing and ROE of non-financial firms listed at the NSE. In step one, model 3.3, which includes firm characteristics as explanatory variables is estimated as the base model to determine the relationship between the independent variables (short-term financing decisions) and the dependent variables (return on equity). The regression results based on model 3.3 are presented in Table 4.8 and reveal that short-term financing decisions and firm characteristics namely firm size, growth opportunities and financial leverage are jointly significant in explaining financial

performance as measured by ROE. This satisfies the first explanatory condition where firm characteristics should be significant (Mackinnon *et al.*, 2007). In the second step, model 3.13 is estimated where the products of short-term financing decisions and firm characteristics are used to estimate the moderating effect. The relevant regression results in this regard are portrayed in Table 4.19.

Table 4.19: Moderation Effect Regression Results with ROE

ROE	Coefficient	Standard Error	Z	P> Z
IHP	0.0001388	0.0009212	0.15	0.880
ARP	0.0061854*	0.0016277	3.80	0.000
APP	-0.0014436*	0.000615	-2.35	0.019
DSIZE	-0.5553583*	0.2786263	-1.99	0.046
GROWTH	0.4099329*	0.2092085	1.96	0.050
LEV	0.4403092	0.2478995	1.78	0.076
IHP*DSIZE	0.0051777	0.0026774	1.93	0.053
IHP*GROWTH	-0.0056517*	0.0020821	-2.71	0.007
IHP*LEV	0.0008735	0.0019267	0.45	0.650
ARP*DSIZE	0.0188858*	0.0041894	4.51	0.000
ARP*GROWTH	0.0024909	0.0033102	0.75	0.452
ARP*LEV	-0.0252957*	0.0032956	-7.68	0.000
APP*DSIZE	-0.0054423*	0.0017181	-3.17	0.002
APP*GROWTH	0.0015928	0.0016885	0.94	0.346
APP*LEV	0.0069886*	0.0015026	4.65	0.000
Constant	-0.0031102	0.1285942	-0.02	0.981

(*) denote 5% level of significance

Source: Study Data (2016)

The regression results in Table 4.19 indicate that Inventory Holding Period coefficient is positive but not significant ($\beta=0.0001388$ and P-value = $0.880 > 0.05$) while the coefficient of Accounts Receivable Period is positive and highly significant ($\beta=0.0061854$ and P-

value = 0.000<0.05). The results also reveal that Accounts Payable Period (APP) coefficient is negative and significant ($\beta=-0.0014436$ and P-value =0.019<0.05) while Firm Size coefficient is negative and statistically significant ($\beta=-0.5553583$ and P-value=0.046<0.05). The results further reveal that the coefficient of Growth Opportunities is positive and statistically significant ($\beta=-0.4099329$ and P-value = 0.05≤0.05) while Financial Leverage coefficient is positive but not statistically significant ($\beta=-0.4403092$ and P-value = 0.076<0.05).

The regression results in Table 4.19 show that the coefficient of the interaction between Inventory Holding Period and Firm Size, and the interaction between Inventory Holding Period and Financial Leverage are not statistically significant at 5 percent ($P > 0.05$). Therefore, the effect of inventory holding period on financial performance as measured by return on equity does not change with firm size and financial leverage. The results also reveal that the coefficient of the interaction between Inventory Holding Period and Growth Opportunities is negative and statistically significant at 5 percent ($\beta = -0.0056517$ and $P = 0.007 < 0.05$). This implies that inventory holding period in firms with growth opportunities leads to reduction of financial performance as measured by return on equity of non-financial firms listed at the NSE.

The regression results in Table 4.19 show that the coefficient of the interaction between accounts receivable period (ARP) and size of the firm (SIZE), is positive and highly significant ($\beta = 0.0188858$, $P = 0.000$) which implies that the effect of ARP on ROE increases with increase in firm size. The results also indicate that the coefficient of the interaction between ARP and the proportion of total assets financed by debt is negative and highly significant ($\beta = -0.0252957$, $P = 0.000$). The result suggests that the effect of ARP on ROA decreases with increasing debt. However, the coefficient of the

interaction between ARP and growth opportunities (GROWTH) is not statistically significant at 5 percent ($P > 0.05$). The results thus suggest that growth opportunities do not change the effect of ARP on ROE of non-financial firms listed at the NSE.

The regression results in Table 4.19 indicate that the size of the firm (SIZE) and financial leverage (LEV) seems to strongly influence the relationship between accounts payable period (APP) and return on equity (ROE). The coefficient of the interaction between APP and SIZE is negative and statistically significant at 5 percent ($\beta = -0.0054423, P = 0.002 < 0.05$) while the interaction between APP and LEV is positive and statistically significant at 5 percent ($\beta = 0.0069886, P = 0.000 < 0.05$). However, the interaction between APP and growth opportunities is not statistically significant at 5 percent ($P > 0.05$). The result implies that the effect of APP on ROE of non-financial firms listed at the NSE does not change in the presence of growth opportunities.

Mackinnon *et al.* (2007) points out that when the coefficients in model 3.13 are not significant and the firm characteristics coefficients in model 3.3 are significant, there is no moderating effect. Table 4.20 presents the summary in the change of the coefficient significance when firm characteristics is introduced in the model as a product of short-term financing decisions.

Table 4.20 Summary Results for Moderating Effect (Dependent Variable: ROE)

Variable	Model 3.2 (Before Moderation)		Model 3.12 (After Moderation)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.0002766	0.448	.0001388	0.880	-.0001013	.880>.05
Accounts Receivable Period	-.003198	0.000	.0061854	0.000	.0029874	.000<.05
Accounts Payable Period	.0006403	0.007	-.0014436	0.019	-.0008033	.019<.05
Firm Size	.4666131	0.000	-.5553583	0.046	-.0887452	.046<.05
Growth Opportunities	.2504875	0.012	.4099329	0.050	0.1594454	.050≤.05
Financial Leverage	-.3270136	0.001	.4403092	0.076	0.1132956	.076>.05

Source: Study Data (2016)

The regression results in Table 4.20 show that Inventory Period coefficient is not significant before moderation ($\beta=0.0002766$, $P=0.448>0.05$) and not significant after moderation either ($\beta=0.0001388$, $P=0.880>0.05$), Accounts Receivable Period coefficient is highly significant before moderation ($\beta=-0.003198$, $P=0.000<0.05$) and also highly significant after moderation ($\beta=-0.0061854$, $P=0.000<0.05$) while that of Accounts Payable Period is significant before moderation ($\beta=0.0006403$, $P=0.007<0.05$) and also significant after moderation ($\beta=-0.0014436$, $P=0.019>0.05$). The results also indicate that the coefficient of Firm size is highly significant before moderation ($\beta=0.4666131$, $P=0.000<0.05$) and significant after moderation as well ($\beta=-0.5553583$, $P=0.046<0.05$), Growth Opportunities coefficient is significant before moderation ($\beta=0.2504875$, $P=0.012<0.05$) and also significant after moderation ($\beta=0.4099329$, $P=0.050\leq 0.05$). The results further reveal that Financial Leverage coefficient is significant ($\beta=-0.3270136$, $P=0.001<0.05$) but insignificant after moderation ($\beta=0.4403092$, $P=0.076>0.05$). On the

basis of the moderation rule by Mackinnon *et al.* (2007), Financial Leverage is just an explanatory variable while Firm Size and Growth Opportunities are moderating variables.

4.6.4.3 Moderating Effect of Firm Characteristics on the Relationship between Short Term Financing Decisions and TQ

The study seeks to determine the moderating effect of firm characteristics on the relationship between short-term financing and TQ of non-financial firms listed at the NSE. In step one, model 3.4, which includes firm characteristics as explanatory variables is estimated as the base model to determine the relationship between the independent variables (short-term financing decisions) and the dependent variables (Tobin-Q). The regression results based on model 3.4 are presented in Table 4.9 and show that short-term financing decisions and firm characteristics namely growth opportunities and financial leverage are jointly not significant in explaining financial performance as measured by TQ. They fail in satisfying the first explanatory condition where firm characteristics should be significant (Mackinnon *et al.*, 2007). However, firm size satisfies the first explanatory condition (Ibid, 2007). In the second step, model 3.14 is estimated where the products of short-term financing decisions and firm characteristics are used to estimate the moderating effect. The regression results in this respect are depicted in Table 4.21.

Table 4.21: Moderation Effect Regression Results with TQ

TQ	Coefficient	Standard Error	Z	P> Z
IHP	0.002082	0.0028318	0.74	0.462
ARP	-0.0210519*	0.0050037	-4.21	0.000
APP	0.0051376*	0.0018907	2.72	0.007
DSIZE	-0.5868829	0.8565281	-0.69	0.493
GROWTH	-0.0918129	0.6431299	-0.14	0.886
LEV	-1.145743	0.7620703	-1.50	0.133
IHP*DSIZE	0.0090027	0.0082307	1.09	0.274
IHP*GROWTH	-0.000887	0.0064007	-0.14	0.890
IHP*LEV	-0.0038767	0.0059228	-0.65	0.513
ARP*DSIZE	0.0260576*	0.00128787	2.02	0.043
ARP*GROWTH	-0.0019859	0.010176	-0.20	0.845
ARP*LEV	0.0150019	0.0101311	1.48	0.139
APP*DSIZE	-0.0123401*	0.0052815	-2.34	0.019
APP*GROWTH	0.0081485	0.0051908	1.57	0.116
APP*LEV	0.005213	0.0046192	1.133	0.259
Constant	1.945234	0.3953129	4.92	0.000

(*) denote 5% level of significance

Source: Study Data (2016)

The regression results in Table 4.21 indicate that Inventory Holding Period (IHP) coefficient is positive but not significant ($\beta=0.002082$ and $P\text{-value} = 0.462 > 0.05$) while the coefficient of Accounts Receivable Period (ARP) is negative and highly significant ($\beta=-0.0210519$ and $P\text{-value} = 0.000 < 0.05$). The results also reveal that Accounts Payable Period (APP) coefficient is positive and statistically significant ($\beta=0.0051376$ and $P\text{-value} = 0.007 < 0.05$) while Firm Size (SIZE) coefficient is negative but not statistically significant ($\beta=0.5868829$ and $P\text{-value}=0.493 > 0.05$). The results further reveal that the coefficient of Growth Opportunities (GROWTH) is negative but not statistically

significant ($\beta = -0.0918129$ and $P\text{-value} = 0.886 > 0.05$) while Financial Leverage (LEV) coefficient is negative but not statistically significant ($\beta = -1.145743$ and $P\text{-value} = 0.133 > 0.05$).

The regression results in Table 4.21 indicate that the coefficient of the interaction between inventory holding period and size of the company, the interaction between inventory holding period and Growth Opportunities, and the interaction between inventory holding period and financial leverage are not statistically significant at 5 percent ($P > 0.05$). The results imply that growth opportunities, financial leverage, and the size of the firm does not affect the relationship between inventory holding period and Tobin-q (TQ) of non-financial companies listed at the NSE.

The regression results in Table 4.21 also shows that the coefficient of the interaction between accounts receivable period and size of the firm is positive and statistically significant ($\beta = 0.0260576$, $P = 0.043$) which implies that firm size positively influences the relationship between ARP and TQ of non-financial companies listed at the NSE. However, the coefficients of the interaction between ARP and growth opportunities, and the interaction between ARP and financial leverage are not statistically significant at 5 percent ($P > 0.05$). The results thus suggests that growth opportunities and financial leverage does not moderate the relationship between ARP and TQ of non-financial firms listed at the NSE.

The regression results in Table 4.21 also indicate that the size of the firm appears to influence the relationship between accounts payable period and TQ. The coefficient of the interaction between Accounts Payable Period and Firm Size is negative and statistically significant ($\beta = -0.0123401$, $P = 0.019$) which implies that the size of the firm changes the direction of the relationship between APP and TQ from positive to negative.

However, the interaction between Accounts Payable Period and Growth Opportunities, and the interaction between Accounts Payable Period and Financial Leverage are not statistically significant ($P > 0.05$). The result implies that the effect of APP on TQ of non-financial firms listed at the NSE is weakened by the financial leverage.

Mackinnon *et al.* (2007) points out that when the coefficients in model 3.13 are not significant and the firm characteristics coefficients in model 3.3 are significant, there is no moderating effect. Table 4.22 presents the summary in the change of the coefficient significance when firm characteristics is introduced in the model as a product of short-term financing decisions.

Table 4.22 Summary Results for Moderating Effect (Dependent Variable: TQ)

Variable	Model 3.2 (Before Moderation)		Model 3.12 (After Moderation)		Significance of Change	
	β	P-Value	β	P-Value	β	P-Value
Inventory Holding Period	.008635	0.397	.002082	0.462	-.006553	.462>.05
Accounts Receivable Period	-.0111736	0.000	-.0210519	0.000	-.0098783	.000<.05
Accounts Payable Period	.0061682	0.000	.0051376	0.007	-.0010306	.007<.05
Firm Size	.6459203	0.039	.5868829	0.493	-.590374	.493>.05
Growth Opportunities	.3287514	0.241	.0918129	0.886	-.2369385	.886>.05
Financial Leverage	.1394947	0.625	1.145753	0.133	1.0062583	.133>.05

Source: Study Data (2016)

The regression results in Table 4.22 show that Inventory Period coefficient is not significant before moderation ($\beta=0.008635$, $P=0.397>0.05$) and not significant after moderation either ($\beta=0.002082$, $P=0.462>0.05$), Accounts Receivable Period coefficient is highly significant before moderation ($\beta=-0.0111736$, $P=0.000<0.05$) and also highly significant after moderation ($\beta=-0.0210519$, $P=0.000<0.05$) while that of Accounts Payable Period is highly significant before moderation ($\beta=0.0061682$, $P=0.000<0.05$) and

significant after moderation ($\beta=0.0051376$, $P=0.007>0.05$). The results also indicate that the coefficient of Firm size is significant before moderation ($\beta=0.6459203$, $P=0.039<0.05$) but insignificant after moderation ($\beta=-0.5868829$, $P=0.493<0.05$), Growth Opportunities coefficient is not significant before moderation ($\beta=0.3287514$, $P=0.241>0.05$) and not significant after moderation either ($\beta=0.0918129$, $P=0.886>0.05$). The results further reveal that Financial Leverage coefficient is not significant ($\beta=0.1394947$, $P=0.625>0.05$) and not significant after moderation as well ($\beta=1.145753$, $P=0.133>0.05$). Based on the moderation rule by Mackinnon *et al.* (2007), Financial Characteristics namely Firm Size, Financial and Growth Opportunities are just explanatory variables.

4.7 Discussion of Findings

The discussion provides the interpretation of the empirical results by comparing them to the theoretical background; and findings of previous studies on short-term financing decisions and financial performance of listed non-financial firms presented in the literature review. It focuses on the major findings of the study and is structured according to the specific objectives of the study. The discussion is presented in the subsequent subsections.

4.7.1 Effect of Short-Term Financing Decisions on Financial Performance

The study seeks to establish the effect of Short-Term Financing Decisions namely Inventory Turnover Decisions, Account Receivables Turnover Decisions and Account Payables Turnover Decisions on Financial Performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Tobin-Q of non-financial firms listed at the NSE. The discussion is based on the regression results presented in Table 4.8, 4.9 and 4.10.

4.7.1.1 Effect of Inventory Turnover Decisions on Financial Performance

The first objective sought to determine the effect of Inventory Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya. The regression results in Table 4.8, 4.9, and 4.10 indicate that the effect of inventory turnover decisions as indicated by inventory holding period (IHP) on all financial performance measures used in this thesis is positive but statistically insignificant. These results support hypothesis 1 (H_{01}) which states that inventory turnover decisions have no significant effect on financial performance of non-financial firms listed at the NSE. The positive sign is consistent with the findings of Mathuva (2010), Nyamweno, and Olweny (2014), Gachira *et al.*, (2014) and Khan *et al.* (2016). However, this result is in disagreement with most existing studies that documented a negative effect of inventory holding period on financial performance (Falope & Ajilore, 2009; Sharma & Kumar, 2011; Vahid *et al.*, 2012; Napompech, 2012; Salempour & Vaez, 2015; Takon & Atseye, 2015; Bagh *et al.*, 2016). The differences in macro-economic environment in Kenya compared to other countries can explain the contradictory result.

This positive effect of inventory turnover decisions on financial performance can be explained by the precautionary motive theory postulated by Modigliani (1957). The theory suggests a higher inventory holding period avoids the prospect of a stock out situation that could boost financial performance. Bhattacharya (2008) argues that a stock out situation would have a disastrous effect on the financial performance of a firm since a firm without stock might lose its reputation. Another justification in favor of a positive effect of high-level inventory is the increase in revenues, which may enhance financial performance. Blinder and Maccini (1991) assert that sustaining high levels of inventory cuts the cost of possible interruptions in the production process and the business loss due to scarcity of products. Maintaining high levels of inventories also assist in plummeting

the cost of supplying the products and protecting the firm against price fluctuations because of adverse macroeconomic factors.

4.7.1.2 Effect of Accounts Receivable Turnover Decisions on Financial Performance

The second objective sets out to establish the effect of Accounts Receivable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya. The empirical results in Table 4.7, 4.8, and 4.9 indicate that accounts receivable turnover decisions as measured by accounts receivable period have negative and statistically significant effect on all financial performance measures namely return on assets (ROA), return on equity (ROE), and Tobin-Q (TQ). Based on these results, hypothesis 2 (H_{02}) which states that accounts receivable turnover decisions have no significant effect on financial performance of non-financial firms listed at the NSE is rejected. In effect, the result means that a reduction in the number of days it takes a company to recover amounts owed by customers leads to increase in ROA, ROE, and TQ of non-financial firms listed at the NSE.

This result is consistent with the findings of Falope and Ajilore (2009), Napompech (2012), Nyamweno and Olweny (2014), Salempour and Vaez (2015) and Takon and Atseye (2015). However, this finding disagrees with the findings of Mihajlov (2012), Hassan, *et al.* (2014), Bagh *et al.* (2016) that indicates a positive effect of accounts receivable period on financial performance. The finding also contradicts the Financing Advantage Theory by Schwartz (1974) which predicts a positive relationship between accounts receivable and financial performance. The result further seems to contradict the conventional postulation that extending of deadlines for customers to make their payments provides stimulation for increased sales hence profitability. Hence, a more restrictive credit policy potentially improves firm's financial performance. This finding

shows that non-financial firms listed at the NSE can enhance their financial performance by reducing the number of days accounts receivable are outstanding.

There are a number of possible explanations as to why the effect of accounts receivable period on financial performance as measured by ROA, ROE, and TQ of non-financial firms listed at the NSE is negative. In the first instance, the lessening of accounts receivable period minimizes or eliminates the prospect of bad debts happening (Martinez-Sola *et al.*, 2012), which in turn improves financial performance. Reduction in accounts receivable period means that a modest amount of cash is locked-up with customers. This could result in reduced probability of default and its negative effect on financial performance. Additionally, the freed up cash could lead to early payment of bills in order to enjoy early payment discounts that improves firms' financial performance. Moreover, the excess free cash flow ensuing from speedy collection of accounts receivable can improve financial performance through investment in profitable ventures and thus improve financial performance. A reduced accounts receivable period also leads to financial performance enhancement because it helps a company to avoid the costly need of borrowing to fund investment in customers.

4.7.1.3 Effect of Accounts Payable Turnover Decisions on Financial Performance

The third objective seeks to determine the effect of Accounts Payable Turnover Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya. The empirical findings in Table 4.8, 4.9, and 4.10 shows that accounts payable turnover decisions as indicated by accounts payable period have positive and statistically significant effect on all financial performance measures used in this study. This finding shows that the decision to delay payment to suppliers of goods and services by a company helps augment ROA, ROE, and TQ. These results leads to rejection of hypothesis 3 (H_{03})

which states that accounts payable turnover decisions have no significant effect on financial performance of non-financial firms listed at the NSE. This result supports the liquidity theory by Emery (1984) which proposes that accounts payable affects financial performance positively. Scores of past studies have also found a positive and significant effect of accounts payable period on financial performance (Falope & Ajilore, 2009; Sharma & Kumar, 2011; Hassan *et al.*, 2014; Khan, *et al.*, 2016). On the contrary, the following studies found significantly negative effect of accounts payable period on financial performance including Sharma and Kumar (2012), Salempour and Vaez (2015) and Bagh *et al.* (2016).

The positive effect of accounts payable period on financial performance can be justified based on a number of grounds. First, this finding holds that profitable firms wait much longer to pay their bills. This means that they withhold their payment to suppliers to take advantage of the cash available to boost their working capital investment and consequently increasing their profitability. In addition, the ability to delay payment means that companies can invest the cash in other profitable ventures (Falope & Ajilore, 2009). Second, this result makes economic sense in that it results in a reduction in transaction cost thereby escalating profitability. This is because devoid of credit period, companies may have to pay for stock as and when they make purchases. This would lead to an increase in the number of times a company has to make payments and consequently mounting the transaction costs. Another advantage of credit period to firms as far as profitability maximization is concerned is the capacity to surmount financial constraints as the credit period serves as a financial facility.

4.7.1.4 Effect of Cash Conversion Cycle Decisions on Financial Performance

The fourth objective sets out to establish the effect of Cash Conversion Cycle Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya. The regression results in Table 4.8, 4.9, and 4.10 interestingly show that cash conversion cycle (CCC) has a positive and statistically significant effect on all financial performance measures used in this study against the expectation. This finding shows that the decision to lengthen the CCC helps improve ROA, ROE, and TQ. These results leads to the rejection of hypothesis 4 (H_{O4}) which stated that cash conversion cycle decisions have no significant effect on financial performance of non-financial firms listed at the NSE. This finding contradicts most previous studies such as Sharma and Kumar (2011), Napompech (2012), Nyamweno and Olweny (2014), Takon and Atseye (2015), Hoang (2015), Bagh *et al.* (2016) and Khan *et al.* (2016). This finding, however, is consistent with previous studies by Gill, Biger and Mathur (2010), Sharma and Kumar (2011), Nzioki *et al.* (2013) Langroudi *et al.* (2013) and Gachira *et al.* (2014) that indicates a positive effect of cash conversion cycle on financial performance.

The positive sign of the cash conversion cycle implies that shortening cash collection period of non-financial firms listed at NSE harms them rather than improve their performance. In a developing economy like Kenya where average per capita income is very low and poverty levels are high, it is reasonable to expect that the firms would rather embark on sales maximization than aggressive cash collection so as not to force away cash strapped customers. The positive sign of the CCC is also consistent with the view that resources blocked at different stages of the supply chain prolong the operating cycle. This probably increases profits attributable to increase in sales, especially where the expenditure of tied up capital is lower than the benefits of holding more stocks and granting more trade credits to clients.

4.7.1.5 Effect of Firm Characteristics on Financial Performance

Other variables theoretically postulated to affect firm's financial performance are also considered as control variables in the model. The control variables are used to enhance robustness of this thesis. They include firm characteristics namely firm size, growth opportunities and leverage. This consistent is with various studies which have utilized the control variables along with the main variables of working capital management in order to have a robust analysis of working capital management on the firm's performance (Falope & Ajilore, 2009; Mathuva, 2010; 2013; Nyamweno & Olweny, 2014; Hassan, Imran, Amjad & Hussain, 2014).

The empirical results presented in Table 4.8, 4.9 and 4.10 shows that size of each firm has a positive and statistically significant effect on all financial performance measures of non-financial firms listed at the NSE. Thus, the results of both the three financial performance measures are robust, because all the regression models show a positive relation at 5 percent level of significance. The positive coefficient on firm size offers empirical support to the findings of Mathuva (2010), Hassan *et al.* (2014), Gachira *et al.* (2014) and Takon and Atseye (2015). However, this finding contradicts that of Falope and Ajilore (2009) and Nyamweno and Olweny (2014) which suggest a negative effect. The positive effect suggests that larger companies benefit from economies of scale than smaller firms regarding operating and innovation costs, which helps decrease the unit cost of production hence financial performance. Furthermore, larger firms may also be able to advance their financial performance more than smaller ones due to their effortless access to finance.

The empirical results presented in Table 4.8, 4.9 and 4.10 as expected indicate that growth opportunities of each firm has a positive and statistically significant effect on

financial performance as measured by return on assets and return on equity. This finding is consistent with the previous studies such as Deloof (2003), Falope and Ajilore (2009), Karaduman *et al.* (2011) and Zariyawati *et al.* (2009) and Takon and Atseye (2015). This means that an increase in sales revenue results in growth in profits. It is sensible that sales growth has a positive effect on financial performance given that growth opportunities are one of the key essentials when it comes to sustainable success.

The regression results presented in Table 4.8, 4.9, and 4.10 reveal that leverage has a negative and statistically significant effect on financial performance as measured by return on assets and return on equity. This means that increase in the financial leverage leads to decrease in financial performance of firms. The negative relationship between leverage and profitability confirms the predictions of pecking order theory which proposes that profitable firms tend to borrow less due to sufficiency in internally generated funds. Several previous studies reported a negative relationship between profitability and leverage include Samiloglu and Demirgunes (2008), Falope and Ajilore (2009) and Mathuva (2010). However, this finding contradicts that of Langroudi *et al.* (2013) which suggest a negative effect. The negative effect implies that debt financing carries with it obligation for future cash flow concerning periodic interest and ultimate payment of the principal sum borrowed. This obligation increases bankruptcy cost of firms, which reduces profitability.

4.7.2 Interaction Effect of Short-Term Financing Decisions on Financial Performance

The sixth objective sets out to establish the interaction effect of Short-Term Financing Decisions on Financial Performance of non-financial firms listed at the NSE, Kenya. The results presented in Table 4.14, 4.15, and 4.16 show that the interaction effect between

inventory holding period (IHP) and accounts receivable period (ARP) on financial performance as measured by return on assets (ROA), return on equity (ROE) and Tobin-Q (TQ) is statistically insignificant. For robustness of the analysis the researcher analysed the interpretation of the coefficients of the individual short-term financing decisions in the model with interaction terms as recommended by Friedrich (1982). The coefficients of IHP and ARP in Table 4.14, 4.15, and 4.16 unlike in the models without the interaction terms do not represent the unique effect of IHP and ARP on financial performance as pointed out by Friedrich (1982) on interpretation of coefficients of interaction terms. Instead, the coefficient implies that the effect of IHP on financial performance as measured by ROE and TQ is different for different values of ARP and vice versa.

The regression results presented in Table 4.14, 4.15, and 4.16 also reveal a negative and statistically significant effect of the interaction between inventory holding period (IHP) and accounts payable period (APP) on all the financial performance measures namely return on assets (ROA), return on equity (ROE) and Tobin-Q. For robustness of the analysis the researcher interpreted the coefficients of the individual short-term financing decisions in the model with interaction terms as recommended by Friedrich (1982). The coefficients of IHP and ARP in 4.14, 4.15, and 4.16 unlike in the models without the interaction terms do not represent the unique effect of IHP and APP on financial performance as pointed out by Friedrich (1982) on interpretation of coefficients of interaction terms. Instead, the coefficient implies that the effect of IHP on financial performance measured is different for different values of APP and vice versa.

The regression results presented in Table 4.14, 4.15, and 4.16 further indicate a statistically insignificant interaction effect between accounts receivable period (ARP) and accounts payable period (APP) on financial performance measures namely return on assets

(ROA) and return on equity (ROE). However, the results show that the interaction effect between accounts receivable period (ARP) and accounts payable period (APP) on financial performance as measured by Tobin-Q is negative and statistically significant. For robustness of the analysis, the coefficients of the short term-financing decisions in the model with interaction terms are interpreted as recommended by Friedrich (1982). The coefficients of ARP and APP in 4.14, 4.15, and 4.16 unlike in the models without the interaction terms do not represent the unique effect of IHP and APP on financial performance as pointed out by Friedrich (1982) on interpretation of coefficients of interaction terms. Instead, the coefficient implies that the effect of ARP on financial performance measured by ROA, ROE and TQ is different for different values of APP and vice versa.

As pointed out in the literature review, there are no previous empirical evidence to compare the findings of this study with on the effect of interactions among various short-term financing decisions on financial performance. However, there is theoretical foundation to explain the effect of the interaction between short-term financing components on financial performance either. Ban˜os-Caballero, Garcı’a-Teruel, and Martı’nez-Solano (2012) recognize the importance of considering the three components of short-term financing namely inventory turnover period, accounts receivable period and accounts payable period at the same time because they influence each other as well as firms’ performance and value. Schiff and Lieber (1974), also recognizes the importance of taking into account the interrelationship between inventory and accounts receivable policies for instance. Friedrich (1982) further argue that an interactive model can provide an accurate and more detailed description of relationships in a set of data, increased explanatory power, and an improvement on the prospects for statistically significant results.

4.7.3 Mediating Effect of Cash Holdings on the Relationship between Short-Term Financing Decisions and Financial Performance

The fifth objective seeks to determine the mediating effect of Cash Holdings on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya. The regression results presented in section 4.6.2.1 and 4.6.2.3 indicates that the mediation test satisfied all the first three conditions to support partial mediation effect. This leads to the rejection of the null hypothesis (H_{05}), hence, the researcher concluded that cash holding partially mediates the relationship between short-term financing decisions (accounts receivable turnover decisions and accounts payable turnover decisions) and financial performance as measured by as measured by return on assets and Tobin-q of non-financial firms listed at the NSE. However, the results provided in section 4.6.2.2 show that cash holding does not mediates the relationship between short-term financing decisions and financial performance as measured by return on equity of non-financial firms listed at the NSE recommended by Baron and Kenny (1986).

In summary, the regression results in Table A.13 and Table A.19 indicate that the effect of cash holdings on financial performance as measured by as measured by return on assets and Tobin-q of non-financial firms listed at the NSE is positive and statistically significant. The finding contradicts the classical view that there is a negative effect of firms' liquidity on profits, and that firms holding more cash are unable to exploit the profitable investment opportunities, and probably ending up paying higher taxes on this particular asset (Wenyao, 2010). The positive effect of cash holdings implies that the more a company manages its internal sources of liquidity, the less the need for external funding, and higher chances of achieving profitability. This finding contradicts the studies by Raheman and Nasr (2007) and Wang (2002) which finds a negative and significant

relationship between liquidity and financial performance. However, this result is in line with the results of Palazzo (2011), Abushammala and Sulaiman (2014) and Anabestani and Shourvarzi (2014) which argues that cash holdings increase the ability on competition in financial markets and support investment without hindering firm performance.

The results presented in Table A.12 reveals that the effect of Inventory Holding Period and Accounts Receivable Period on Cash Holding as measured by the Current Ratio is negative and statistically significant at 5 percent level. These findings are in line with the studies of Capkun and Weiss (2007), Abel (2008) and Yeboah and Agyei (2012). The negative effect of Accounts Receivable Period on Cash Holding, however, contradicts the finding of Prahalathan (2010). The results also indicate that the effect of Accounts Payable Period on Cash Holding is positive and statistically significant at 5 percent level. The finding is consistent with the studies by Capkun and Weiss (2007), Abel (2008), Prahalathan (2010) and Yeboah and Agyei (2012) but contradicts the study of Zhang (2011). However, the effect of Cash Conversion Cycle on Cash Holding is negative but not statistically significant at 5 percent level.

The negative effect of Holding Period and Accounts Receivable Period on Cash Holding is because efficient short-term financing decisions results in a speedy turnover of current assets into cash that again should result in lower holdings of inventory and accounts receivable. The empirical results thus confirm the theoretical supposition that inventory and accounts receivable embody substitute for cash. This implies that firms with less inventory and account receivable maintain more cash balance because of shorter cash substitute, given that the firms cannot transform them into cash quickly if cash is insufficient. Therefore, if firms have less non-cash components of short-term financing, equally it possesses more cash holdings. The positive effect of Accounts Payable period

on Cash Holding supports the theoretical premise that short-term liabilities characterize the opposite of cash substitutes as they correspond to the opposite side of current assets, namely current liabilities. The finding proposes elongating the accounts payable period increases cash levels for financial flexibility and hedging the risks. In conclusion, these results show that non-financial firms listed at the NSE are able to increase their cash holdings when they shorten their inventory holding and accounts receivable periods relative to their creditors' payment period.

4.7.4 Moderating Effect of Firm Characteristics on the Relationship between Short-Term Financing Decisions and Financial Performance

The seventh objective seeks to establish the moderating effect of Firm Characteristics on the relationship between Short-Term Financing Decisions and Financial Performance of non-financial firms listed at the NSE, Kenya. The regression results shown in Table 4.17–4.22 indicates that the relationship between short-term financing decisions and financial performance measures of non-financial firms listed at the NSE is moderated firm characteristics. The results suggest that the presence of financial leverage strengthens the relationship between inventory holding period and financial performance as measured by return on assets. Moreover, the moderation effect of leverage changes the direction of the relationship inventory holding period and return on assets from positive to negative.

The regression results in Table Table 4.17–4.22 also shows that the moderating effect of firm size on the relationship between accounts receivable period (ARP) and all financial performance is positive and statistically significant. The result implies that firm size positively influences the relationship between accounts receivable turnover decisions as measured by accounts receivable period and financial performance of non-financial companies listed at the NSE. The results further indicate that the moderating effect

financial leverage on the relationship between financial performance as measured by return on assets and Tobin-Q is negative and statistically significant. This implies that financial leverage has negative moderating effect on the relationship between accounts receivable turnover decisions as measured by accounts receivable period and financial performance of non-financial companies listed at the NSE.

The regression results in Table Table 4.17–4.22 further reveals that the moderating effect of the size of the company on the relationship between accounts payable period and financial performance as measured by return on equity and Tobin-Q. This results suggests that firm size has negative moderating effect on the relationship between accounts payable period and financial performance of non-financial companies listed at the NSE. Moreover, the results show that the moderating effect of financial leverage on the relationship between accounts payable period and financial performance as measured by return on equity is positive and statistically significant. The results further indicate that growth opportunities has positive and moderating effect on the relationship between accounts payable turnover decisions as measured by accounts payable period and financial performance of non-financial companies listed at the NSE.

The regression results in Table 4.17–4.22 additionally shows that the moderating effect of firm size on the relationship between cash conversion cycle and financial performance as measured by return on equity of non-financial companies listed at the NSE. Moreover, the results indicate that financial leverage has significant and positive moderating effect on the relationship between cash conversion cycle and financial performance as measured by return on assets and Tobin-Q of non-financial companies listed at the NSE. However, the results reveal that financial leverage has significant and negative moderating effect on the relationship between cash conversion cycle and financial performance as measured by

return on equity of non-financial companies listed at the NSE. The results further show that growth opportunities has significant and negative moderating effect on the relationship between cash conversion cycle and financial performance as measured by return on equity and Tobin-Q of non-financial companies listed at the NSE.

Based on the moderation rule by Mackinnon *et al.*, (2007), the results in Table 4.18 show that growth opportunities and financial leverage variables have statistically significant moderating effect on the relationship between short-term financing decisions and firm performance as indicated by return on assets. The results presented in Table 4.20 also indicate that both firm size and growth opportunities variables have statistically significant moderating effect on the relationship between short-term financing decisions and firm performance as indicated by return on equity. The results presented in Table 4.18 and 4.20 further reveal that firm size and financial leverage variables do not have statistically significant moderating effect on the relationship between short-term financing decisions and firm performance as indicated by return on assets and return on equity respectively. Finally, the results in Tabel 4.22 show that firm size, growth opportunities and financial leverage do not have statistically significant moderating effect on the relationship between short-term financing decisions and firm performance as indicated by return on Tobin-Q. By combining the results in Table 4.17–422, the study rejects the null hypothesis 7 (H_{07}) and concludes that firm characteristics have statistically significant effect on the relationship between short-term financing decisions and firm performance as indicated by return on assets and return on equity.

The current findings are consistent with the previous studies (Iftikhar, 2013; Azeem & Marsap, 2015; Zariyawati, *et al.*, 2016). The moderating effect of firm size is due to the fact that larger firms have easy access to external financing, less information asymmetry

and less borrowing constraints, hence can afford to have relaxed receivables and inventories policies (Hill *et al.*, 2010). This results in higher sales levels which in turn requires larger investments in working capital hence improved financial performance. On the other hand, it is argued that if the firm has been experiencing growth in sales in the previous years, it could increase its inventory in anticipation of future sales growth, thus increasing investment in working capital (Wasiuzzaman & Arumugam, 2013). In addition, sales growth could be stimulated through the granting of credit to customers resulting in higher receivables, thus again increasing the working capital cycle which in turn affects financial performance. On the moderating effect of financial leverage, it is argued that increase in debt financing implies debt repayments have to be made resulting in less capital available to invest in working capital. Moreover, since the cost of debt financing is higher compared to the return gained from investing in liquidity, a highly levered firm invests less of its capital in its working capital cycle (Banos-Caballero *et al.*, 2010). This is consistent with the pecking order theory, which postulates that only when a firm does not have enough internal financing would it go for the next safest source of financing which is debt financing.

Table 4.23: Summary of Hypotheses Tests

	Hypothesis	Reject Ho/Fail to reject H₀
H_{01}	Inventory turnover decisions have no statistically significant effect on financial performance of non-financial firms listed at the NSE, Kenya.	Fail to reject H₀
H_{02}	Accounts receivable turnover decisions have no statistically significant effect on financial performance of non-financial firms listed at the NSE, Kenya.	Reject Ho
H_{03}	Accounts payable turnover decisions have no statistically significant effect on financial performance of non-financial firms listed at the NSE, Kenya.	Reject Ho
H_{04}	Cash conversion cycle decisions have no statistically significant effect on financial performance of non-financial	Reject Ho

	firms listed at the NSE, Kenya.	
H_{05}	Cash holdings do not mediate the relationship between short-term financing decisions and return on assets of non-financial firms listed at the NSE, Kenya.	Reject H_0
	Cash holdings do not mediate the relationship between short-term financing decisions and return on equity of non-financial firms listed at the NSE, Kenya.	Fail to reject H_0
	Cash holdings do not mediate the relationship between short-term financing decisions and Tobin-q of non-financial firms listed at the NSE, Kenya.	Reject H_0
H_{06}	There is no statistically significant interaction effect between inventory turnover decisions and accounts receivable turnover decisions on financial performance of non-financial firms listed at the NSE, Kenya.	Fail to reject H_0
	There is no statistically significant interaction effect between inventory turnover decisions and accounts payable turnover decisions on financial performance of non-financial firms listed at the NSE, Kenya	Reject H_0
	There is no statistically significant interaction effect between accounts receivable turnover decisions and accounts payable turnover decisions on return on assets of non-financial firms listed at the NSE, Kenya	Fail to reject H_0
	There is no statistically significant interaction effect between accounts receivable turnover decisions and accounts payable turnover decisions on return on equity of non-financial firms listed at the NSE, Kenya	Fail to reject H_0
	There is no statistically significant interaction effect between accounts receivable turnover decisions and accounts payable turnover decisions on Tobin-q of non-financial firms listed at the NSE, Kenya	Reject H_0
H_{07}	Firm characteristics do not moderate the relationship between short-term financing decisions and return on assets of non-financial firms listed at the NSE, Kenya.	Reject H_0
	Firm characteristics do not moderate the relationship between short-term financing decisions and return on equity of non-financial firms listed at the NSE, Kenya.	Reject H_0
	Firm characteristics do not moderate the relationship between short-term financing decisions and Tobin-q of non-financial firms listed at the NSE, Kenya.	Reject H_0

Source: Research Data (2016)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions, policy recommendations and contributions of the study to knowledge. It also presents the limitations and delimitations of the study, and areas for further research.

5.2 Summary

In spite of the private sector and government effort to create conducive environment for conducting business, the corporate sector in Kenya has experienced mixed performance with some firms reporting impressive performance while others performing dismally. The corporate managers seems to lack guidance on financing decisions more especially in the short-term that result in the outcome reflected in financial performance. This study sought to empirically determine the effect of short-term financing decisions on financial performance of non-financial Firms listed at the NSE, Kenya. The study has used an explanatory research design which is non-experimental in nature. A census of 26 non-financial firms listed at the NSE, Kenya have been taken. Panel data of these firms covering the period from 2001 to 2014 have been used in the analysis. Three performance measures namely return on assets, return on equity, and Tobin-Q have been used to estimate the effect of short term-financing variables such as inventory holding period, accounts receivable period, and accounts payable period.

The first objective of the study is to determine the effect of inventory turnover decisions on the financial performance of non-financial firms listed at the NSE, Kenya. Using FGLS estimation technique, the study establishes that inventory holding period, a measure of inventory turnover decisions, has a positive effect on financial performance as

measured by return on assets, return on equity and Tobin-q. However, the effect is statistically insignificant. The positive sign implies that holding high level inventory results to the increase in sales, which in turn improves financial performance.

The second objective is to establish the effect of accounts receivable decisions on financial performance of non-financial companies listed at the NSE, Kenya. The study measured accounts receivable decisions in terms of accounts receivable period. The study determines that accounts receivable period, a measure of accounts receivable turnover decisions, has statistically significant negative effect on all financial performance measures namely return on assets, return on equity and Tobin-Q. This finding validates the estimation that decrease in accounts receivable period improves the accounts receivable turnover, which positively affects the firm's financial performance.

The third objective of the study is to determine the effect of accounts payable turnover decisions on financial performance of non-financial companies listed at the NSE. Accounts payable turnover decisions is measured in terms of accounts payable period. The study establishes that accounts payable period has statistically significant positive effect on all financial performance measures namely return on assets, return on equity and Tobin-Q. This finding indicates that stretching the payment period increases the firm's ability to utilize creditors' money in their operation, which in turn enhances the firm value.

The fourth objective is to establish the effect of cash conversion cycle decisions on financial performance of non-financial firms listed at the NSE. The cash conversion cycle decisions are measured in terms of cash conversion cycle. The study determines that the cash conversion cycle has statistically significant positive effect on all financial performance measures used in this study against the expectations. This finding shows that

the decision to lengthen the cash conversion cycle helps to improve financial performance.

The fifth objective of the study is to determine the interaction effect of inventory turnover decisions, accounts receivable turnover decisions and accounts payable turnover decisions on the financial performance of non-financial firms listed at the NSE, Kenya. The study determines that the interaction effect between inventory holding period and accounts receivable period on all financial performance measures is statistically insignificant. The study also determines a negative and statistically significant effect of the interaction between inventory holding period and accounts payable period on all the financial performance measures. The study further determines a statistically insignificant interaction effect between accounts receivable period and accounts payable period on financial performance measures namely return on assets (ROA) and return on equity (ROE). However, the determines that the interaction effect between accounts receivable period (ARP) and accounts payable period (APP) on financial performance as measured by Tobin-Q is negative and statistically significant.

The sixth objective is to establish whether cash holdings mediate the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE. The study establishes that cash holding partially mediates the relationship between short-term financing decisions and financial performance as measured by return on assets and Tobin-q of non-financial firms listed at the NSE. However, the study establishes that cash holding does not mediate the relationship between short-term financing decisions and financial performance as measured by return on equity of non-financial firms listed at the NSE.

The seventh objective seeks to establish the moderating effect of firm characteristics on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE, Kenya. The study establishes that firm characteristics namely firm size, growth opportunities and financial leverage moderate the relationship between short-term financing decisions and financial performance as measured by return on assets, return on equity and Tobin-Q of non-financial firms listed at the NSE. This finding implies that the presence of firm characteristics may modify the sign and intensity of the effect of short-term financing decisions on financial performance.

5.3 Conclusions

The study concludes that increase in inventory turnover decisions have a statistically insignificant and positive effect on financial performance as measured by return on assets, return on equity and Tobin-Q of non-financial firms listed at the NSE, Kenya. The positive effect implies that keeping high inventory levels results to increase in sales, which in turn improves financial performance. Alternatively, holding high levels of inventory diminishes the cost of potential disruptions in the production process and the loss of business owing to shortage of goods, which in turn improves financial performance. Thus, the management can increase inventories to rational levels in order to generate value for their shareholders.

On the effect of accounts receivable turnover decisions on financial performance, the study concludes that accounts receivable turnover decisions as measured by accounts receivable holding period has significant negative effect on all financial performance measures namely return on assets, return on equity and Tobin-Q. It means that reduction in accounts receivable holding period improves the accounts receivable turnover, which positively affects the firm's performance. In other words, by decreasing the accounts

receivable period to a practical minimum, the management of a firm builds value for their shareholders.

On the effect of accounts payable turnover decisions on financial performance, the study concludes that accounts payable turnover decisions as measured in terms of accounts payable period has significant positive on all financial performance measures namely return on assets, return on equity and Tobin-Q. It implies that extending the payment period raises the firm's ability to make use of creditors' funds in their operation, which in turn enhances the market value of the firm. This study holds that companies that are more profitable take longer to settle their financial obligations. This means that companies must make an effort to postpone payments to their creditors as much as probable while ensuring that their relationship with them is not blemished.

On the effect of cash conversion cycle decisions on financial performance, the study concludes that the cash conversion cycle has significant positive effect on all financial performance measures namely return on assets, return on equity and Tobin-Q. This finding shows that the decision to lengthen the cash conversion cycle enhances financial performance of non-financial firms listed at the NSE. This is consistent with the view that in an a developing economy like Kenya, it is reasonable to expect that the firms would rather embark on sales maximization than aggressive cash collection so as not to drive away cash strapped customers.

On the interaction effect, the study concludes that the interaction effect between inventory holding period and accounts receivable period on financial performance measures is statistically insignificant. The study also concludes that there is a negative and statistically significant effect of the interaction between inventory holding period and accounts payable period on all financial performance measures. The study further

concludes that there is a statistically insignificant interaction effect between accounts receivable period and accounts payable period on financial performance measures namely return on assets and return on equity. However, the concludes that the interaction effect between accounts receivable period and accounts payable period on financial performance as measured by Tobin-Q is negative and statistically significant. Based on these findings, the study concludes that short-term financing decisions do not only affect financial performance directly but interact with each other to jointly affect financial performance.

On the mediation effect, the study concludes that cash holding partially mediates the relationship between short-term financing decisions and financial performance as measured by as measured by return on assets and Tobin-q of non-financial firms listed at the NSE. However, the study concludes that cash holding does not mediate the relationship between short-term financing decisions and financial performance as measured by return on equity of non-financial firms listed at the NSE. These results imply that the disruption in production and sales as a result of inventory levels causes a technical insolvency represented by the inability to pay the creditors in time due to restrictive policies, which in turn affects financial performance. The study further establishes that cash holding has a significant direct effect on financial performance as measured by return on assets, return on equity, and Tobin-Q contrary to the theoretical belief that increased cash holding increases the agency cost and has a negative effect on financial performance.

On the moderating effect, the study determines that firm characteristics namely, firm size, growth and leverage moderate the relationship between short-term financing decisions and financial performance as measured by return on assets, return on equity and Tobin-Q measures of non-financial firms listed at the NSE. This finding implies that the presence

of firm characteristics may modify the sign and intensity of the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE.

5.4 Policy Recommendations

This section presents a number of policy recommendations derived from the results detailed in this study. Firstly, the results show that increase in inventory turnover decisions have a positive effect on financial performance of non-financial firms listed at the NSE, Kenya. Based on these results, the study recommends that the corporate managers need to pay more attention to the inventory holding period since proper management of inventory enhances financial performance. The managers of non-financial firms listed at the NSE can improve the financial performance by formulating an aggressive inventory management strategy where large amounts of inventories are held to avoid stock-out cost and maximize sales in the face of emerging opportunities.

Secondly, the study finds a significant negative effect of accounts receivable turnover decisions on financial performance of non-financial firms listed at the NSE. The study consequently recommends that the management of non-financial firms should trim down the accounts receivable period to a reasonable least amount so as to engender value for their shareholders. This entails a liberal approach to the management of cash receivable portfolio of non-financial firms that places emphasis on sales maximization without undue pressure on debtors given the low level per capita income, high poverty incidence and unemployment in the country. By condensing the accounts receivable period to a realistic minimum, the financial managers can invest the accessible cash in more profitable business ventures to thwart the cash from being eroded by inflation effects. The reduction also enables the firms to access cheap sources of financing in line with the pecking order theory. The liberal debt recovery strategy demands the firms to relax trade

credit when the sales fall and tighten it when sales are on the rise. The non-financial firms listed at the NSE should further forge a good relationship with their customers it guarantees future sales and entice customers to purchase more.

Thirdly, the study found a significant positive effect of accounts payable turnover decisions as measured in terms of accounts payable period on all financial performance measures namely return on assets, return on equity and Tobin-Q. The study therefore recommends that corporate managers should wait longer to make payments to their suppliers while make certain not to damage their integrity which may stop future credit services and probable court cases from suppliers. The study further recommends that non-financial firms listed at the NSE should further build a good relationship with their suppliers to enhance financial performance. The supplier offers better terms of payment when there is a good relationship between a firm and its suppliers.

Fourthly, the study findings establish a significant positive effect of cash conversion cycle decisions on financial performance of non-financial firms listed at the NSE. The study thus recommends that corporate managers should lengthen the cash conversion cycle since shortening cash collection period harms rather than improving financial performance of non-financial firms listed at the NSE. This recommendation is line with the observation that financial resources tied up at various points of the supply chain, extends the cash conversion cycle. This may well augment profits because of improved sales, mainly where the costs of blocked capital is inferior to the payback of holding added stock and giving way extra trade credit to clientele.

Fifthly, the study establishes that short-term financing decisions have an interaction effect on financial performance of non-financial firms listed at the NSE. The study consequently recommends that managers of non-financial companies should make short-term financing

decisions in relation to each other and not in isolation as their interaction effect on performance is significant. Specifically inventory turnover decisions should be made in relation to accounts receivable turnover decisions; and inventory turnover decisions and accounts payable turnover decisions. Similarly, accounts receivable turnover decisions and accounts payable turnover decisions should be made in relation to each other. Academicians in finance should enhance the robustness in analysing short-term financing decisions by considering the interaction effect between the independent variables on the dependent variable. The traditional working capital management theories should be re-evaluated using models that incorporate interaction.

Sixthly, the study has determined that cash holding partially mediates the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE. In addition, the findings show that firms with high cash ratios perform better. This can be explained by the view that firms with high cash ratios are in a better financial position to take advantage of arising investment opportunities. This study therefore, recommends that financial managers of non-financial firms listed at the NSE should maintain a relatively high cash holdings. By reducing the accounts receivable period and increasing accounts payable and inventory holding periods to reasonable levels, non-financial firms listed at the NSE will have ready cash to undertake projects that maximize shareholder value. The cash holdings also lessen the possibility of financial distress once the business is not capable of generating enough operating cash flows.

Lastly, the study determines that firm characteristics namely size of the firm, growth opportunities and financial leverage moderates the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE. The study therefore recommends that the policy makers of non-financial firms listed at

NSE should consider the firm characteristics when formulating policies on short-term financing in order to enhance financial performance.

5.5 Contribution to Knowledge

This thesis unlike most previous studies that have investigated the relationship between the financial performance and short-term financing decisions of non-financial firms listed at NSE, measured different facets of financial performance as they respond differently to various short-term financing decisions. Different stakeholders also define financial performance from different perspectives which may not be necessarily the same. Further, the study uses diverse measures of financial performance for robustness. The study exclusively used three dissimilar measures of financial performance for the regression analyses, which are return on assets (ROA), return on equity (ROE), and Tobin-Q (TQ).

The second contribution is that unlike previous studies that have investigated the direct effect of short-term financing decisions on financial performance, this study also examines the mechanism through which short-term financing decisions are able to influence financial performance. To this end, the present study endeavors to fill this knowledge gap in the literature by analyzing the mediating effect of cash holdings on the relationship between short-term financing decisions and performance of non-financial firms listed at the NSE, Kenya.

The third contribution is that no existing studies have explored the effect of the interaction between short-term financing decisions on financial performance. The available studies on short-term financing decisions have not considered the moderating effect of firm characteristics as well. This research therefore, is important because it provides evidence on the interaction effect of different short-term financing decisions components on financial performance of non-financial firms listed at the NSE. The thesis

also provides evidence on the moderating effect of firm characteristics on the relationship between short-term financing decisions and financial performance of non-financial firms listed at the NSE.

Finally, the review of empirical literature has revealed that most of studies on short-term financing decisions or working capital management are based on very limited sample and study period. The previous studies have also failed to establish the trends of short-term financing decisions, firm characteristics, and financial performance indicators of non-financial firms listed at the NSE. The current study therefore, contributes to the existing literature by considering all non-financial firms listed at the NSE with complete data for the period from 2001 to 2014. The study further establishes the trends which shows the movement of the variables over time.

5.6 Limitations and Delimitations of the Study

Firstly, the current study has omitted the banking, insurance, some commercial and service firms and telecommunication firms because the working capital of financial institutions incorporates deposits and loans that form part of their core business in addition to the financial regulatory requirements as opposed to other firms. Therefore, short-term financing decisions may perhaps affect their financial performance in a different way from non-financial firms. Thus, the elimination of financial firms could emanate misgivings on the generalizations of the results of the study. Nonetheless, the companies quoted at the NSE have sound financial structures under the supervision of the Capital Market Authority and so they have the capability to abide by strict financial regulatory requirements. The study of such firms consequently makes available key insight into short-term financing decisions and their effect on financial performance of all companies operating in Kenya.

Secondly, despite the fact the researcher has made effort to collect correct information, it is possible that the annual reports relied on contained inaccurate data, as they may well be subject to undue influence by companies in order to fulfill the regulatory requirements. Therefore, there are chances that the firms have tailored the figures reported in the financial statements to satisfy the regulatory requirements and to placate the stakeholders. This may possibly front a challenge to the generalization of findings to both non-listed and listed firms.

Thirdly, the Nairobi Securities Exchange has only a small number of listed companies as compared to other stock markets in the world, making the size of the study population rather small. Additionally, while some non-financial firms are unlisted in some years, others did not have all the financial data and hence excluded from the study. The study has used secondary panel data to enlarge the quality and quantity of the information available for study to ensure meaningful statistical analysis. The period covered has also been increased in order obtain sufficient firm-year observations.

5.7 Areas for Further Research

This thesis is among the few comprehensive studies with reference to short-term financing decisions in Kenya where financial data at firm level and variables are used for investigating the effect of short-term financing decisions on financial performance of non-financial firms listed at the NSE. This study has unlocked numerous avenues for research in the future specially in the Kenyan context. There are a number of prospective avenues for further studies and enhancement. Firstly, a comparative study on the effect of short-term financings decisions of both listed and non-listed firms and the effect of these decisions on financial performance.

Secondly, researchers in the future should carry out surveys on working capital practices followed by firms in different sectors in economy by utilizing the data obtained directly from the financial managers. Such type of studies will present fresh understanding of the financial managers on how they observe and manage the short-term financing components of their firms. This will also unearth alternative views on working capital management and best tools and practices for short-term financing.

Thirdly, another interesting area for further research is the short-term financing for the financial sector in Kenya. This is an area where studies in the future require to be taken on since the requirements of working capital for the financial sectors are somewhat diverse from those of the non-financial firms. The financial performance can be studied for financial firms only or both financial and non-financial firms so as to establish if the present findings are robust to different sample specifications including development of mathematical models for working capital management.

REFERENCES

- Abel, M. (2008). The impact of working capital management on cash holdings: A quantitative study of Swedish manufacturing SMEs, Master Thesis submitted to Mid Sweden University.
- Abushammala, S.N.M., & Sulaiman, J. (2014). Cash Holdings and Corporate Profitability: Some Evidences form Jordan. *International Journal of Innovation and Applied Studies*, 8 (3), 898-907.
- Adekunle, A.O & Sunday, O.K. (2010). Capital structure and firm performance: Evidence from Nigeria. *European Journal of Economics, Finance and Administrative Sciences*, 25, 71-80.
- Afza, T., & Nazir, M. (2007). Is it better to be aggressive or conservative in managing working capital? *Journal of Quality and Technology Management*, 3 (2), 11-21.
- Akash, R., Khan, M I., Hamid, K., & Hussain, F. (2011). Working capital management and risk- return trade off hypothesis: Empirical evidence from textile sector of Pakistan. *European Journal of Economics, Finance and Administrative Sciences*, 40, 148-152.
- Almeida, H., Campello, M., & Weisbach, M. (2004). The cash flow sensitivity of cash. *Journal of Finance*, 59, 1777-1804.
- Anabestani, Z., & Shourvarzi, M.R. (2014). Cash holdings, firm value and corporate governance. *Middle East Journal of Scientific Research*, 21 (10), 1734–1745.
- Anderson, C.A., Gentile, D.A., & Katherine E. Buckley, K.E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy*. New York: Oxford University Press.
- Arnold, G. (2008). *Corporate financial management* (4th Ed.), London, England: Pearson Education Inc.

- Autukaite, R., & Molay, E. (2013). Cash holding, working capital and firm value: Evidence from France. *International conference of the French Finance association (AFFI)*, 11-13.
- Azeem, M.M., & Marsap, A. (2015). Determinant factors and working capital requirement. *International Journal of Economics and Finance*, 7 (2), 280–292. Retrieved from <http://dx.doi.org/10.5539/ijef.v7n2p280>
- Bagh, T., Nazir, M.I., Khan, M.A., Razzaq, S. (2016). The impact of working capital management on firms financial performance: Evidence from Pakistan. *International Journal of Economics and Financial Issues*, 6(3), 1097–1105. Retrieved from <http://www.econjournals.com>.
- Baltagi, B. H. (2005). *Econometric analysis of panel data* (3rd Ed.), New York: John Wileys & Sons Inc.
- Bana, A. (2012). Working capital management and firms' performance in emerging markets: The case of Jordan. *International Journal of Managerial Finance*, 8 (2), 155-179.
- Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2010). Working capital management in SMEs. *Accounting & Finance*, 50 (3), 511-527.
- Baños-Caballero, S., García-Teruel, P.J., & Martínez-Solano, P. (2012). How does working capital management affect the profitability of Spanish SMEs? *Small Businesses Economics*, 39, 517–529.
- Barako, D.G., Hancock, P., & Izan, H.Y. (2006). Relationship between corporate governance attributes and voluntary disclosures in annual reports: The Kenyan experience. *Fin. Rep., Reg. Gov.*, 5, 1-26.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

- Bastos, R., & Pindado, J. (2012), Trade credit during a financial crisis: A panel data analysis. *Journal of Business Research* (2012), doi:10.1016/j.jbusres.2012.03.015.
- Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why do US firms hold so much more cash than they used to? *The Journal of Finance*, 64 (5), 1985-2021.
- Belsley, D.A., Kuh, E., & Welsch, R.E. (1980). *Regression diagnostics: Identifying influential data and sources of collinearity*. New York: John Wiley & Sons.
- Bera, A. K., & Jarque, C. M. (1981). An efficient large-sample test for normality of observations and regression residuals. *Australian National University Working Papers in Econometrics* 40, Canberra.
- Berk, J., DeMarzo, P. & Harford, J. (2009). *Fundamentals of corporate finance*. Pearson Education Inc.: Boston.
- Besley, S., & Brigham, E. F. (2005). *Essentials of managerial finance* (13th Ed.), Thomson South-Western: USA.
- Bhattacharya, H., (2008). Theories of trade credit: Limitations and applications. Retrieved from: <http://ssrn.com/abstract=1286443>.
- Blinder, A.S., & Macinni, L. (1991). Taking Stock: A critical assessment of recent research on inventories. *Journal of Economic Perspectives*, 5 (1), 73-96.
- Brooks, C. (2008). *Introductory econometrics for finance* (2nd Ed.), New York, USA: Cambridge University Press.
- Bryman, A., & Bell, E. (2011). *Business research methods* (3rd Ed.), Oxford: Oxford University Press.
- Capkun, V., & Weiss L. A. (2007). A trade credit explanation for the increased level of corporate cash holdings. Working Paper.
- Charitou, M.S., Elfani, M., & Lois, P. (2010). The effect of working capital management on firm's profitability: Empirical evidence from an emerging market. *Journal of Business & Economics Research*, 8 (12), 63-68.

- Chebii, E.K., Kipchumba, S.K., & Wasike, E. (2011). Relationship between firms' capital structure and dividend payout ratios: Companies listed at Nairobi Stock Exchange. Proceedings of 2011 Kabarak University, 1st Annual International Research Conference.
- Cheng, N. S., & Pike, R. (2003). The trade credit decision: evidence of UK firms. *Managerial and Decision Economics*, 24, 419-438.
- Ching H. Y., Novazzi A., & Gerab F. (2011). Relationship between working capital management and profitability in Brazilian-listed companies. *Journal of Global Business and Economics*, 3 (1), 74–86.
- Choi, I. (2001). Unit root tests for panel data. *Journal of International Money and Finance*, 20, 249-272.
- Chowdhury, A., & Amin, M. M. (2007). Working capital management practiced in pharmaceutical companies listed in Dhaka stock exchange. *BRAC University Journal*, 4 (2), 75-86.
- Christopher, S.B., & Kamalavalli, A.L. (2009). Sensitivity of profitability to working capital management in Indian corporate hospitals. Working Paper, NGM College. Retrieved from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1331500.
- Cooper, R. D., & Schindler, S.P. (2008). *Business research methods* (8th Ed.). Boston: Irwin McGraw-Hill.
- Cunãt, V. (2007). Trade credit: Suppliers as debt collectors and insurance providers. *Review of Finance Studies*, 20, 491–527.
- Damodaran, A. (2002). *Corporate finance: Theory and Practice*, New York, John Wiley.
- Dandapani, K., Chang, C., & Prakash, A. (1995). Current asset policies of European and Asian corporations: A critical examination, *Management International Review* special Issue 1995/2, 105–117.
- Deloof, M. (2003). Does working capital management affect profitability of Belgian Firms? *Journal of Business, Finance and Accounting*, 30 (3&4), 573–587.

- Dey, A. K., (2009). Profit maximization. *Business Perspective*, 9, 41–49. Retrieved from <http://ssrn.com/abstract=1482609>
- D’Mello, R., Krishnaswami, S., & Larkin, P.J. (2008). Determinants of corporate cash holdings: Evidence from spin-offs. *Journal of Banking and Finance*, 32, 1209–1220.
- Dong, H. P., & Su, J. (2010). The relationship between working capital management and profitability: A Vietnam case. *International Research Journal of Finance and Economics*, 49, 62-71.
- Drobetz, W. Gruninger, M.C., & Hirschvogel, S. (2010). Information asymmetry and the value of cash. *Journal of Banking and Finance*, 34, 2168-2184.
- Elkinawy, S., & Stater, M. (2007). *Cash holdings and firm value during Latin American Financial Crises*. Paper presented at the FMA Annual Meeting Program. Retrieved from: http://myweb.lmu.edu/ccfc/index_files/Fall07/Susan_Cash_Holdings_and_Firm_Value_in_Latin_America.pdf.
- Emery, G.W. (1984). A pure financial explanation for trade credit. *Journal of Financial and Quantitative Analysis*, 9, 271-285.
- Ernst & Young (2009). *All tied up - Working capital management report 2009*. Retrieved from: [http://www.ey.com/Publication/vwLUAssets/All_tied_up/\\$FILE/All%20tied%20up.pdf](http://www.ey.com/Publication/vwLUAssets/All_tied_up/$FILE/All%20tied%20up.pdf)
- Falope, O.I., & Ajilore, O.T. (2009). Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted companies in Nigeria. *Research Journal of Business Management*, 3, 73–84.
- Ferreira, M.A., & Vilela, A.S. (2004). Why do firms hold cash? Evidence from EMU countries’, *European Financial Management*, 10 (2), 295-319.
- Field, A. P. (2009). *Discovering statistics using SPSS (2nd Ed.)*. London: Sage.
- Financial Executives International Canada (2013). *Working capital optimization*. Toronto: Canadian Financial Executives Research Foundation.

- Fisman, L., & Love, I. (2003). Trade credit, financial intermediary development, and industry growth. *Journal of Finance*, 58, 353–374.
- Frankfurt Business Media. (2012). *Frankfurt business media*. Retrieved from: <http://www.cfo-insight.com/financing-liquidity/cash-management/uk-companies-miss-out-on-billions/>
- Frees, E. (2004). *Longitudinal and panel data: Analysis and applications in the social sciences*. New York, USA: Cambridge University Press.
- Friedrich, J.R. (1982). In defense of multiplicative terms in multiple regression equations. *American Journal of Political Science*, 26 (4), 797-833.
- Gachira, W., Chiwanzwa, W., Nkomo, D.J., & Chikore, R. (2014). Working capital management and the profitability of non- financial firms listed on the Zimbabwe Stock Exchange (ZSE). *European Journal of Business and Economics*, 9 (2), 12–15. Retrieved from [http:// www.ourjournals.cz](http://www.ourjournals.cz).
- Garcia-Teruel, P.J., & Martinez-Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, 3 (2), 164–177.
- Garcia-Teruel, P. J., & Martinez-Solano, P. (2010). A dynamic approach to accounts receivable: A study of Spanish SMEs. *European Financial Management*, 16 (3), 400–421.
- Ganesan, V. (2007). An analysis of working capital management efficiency in telecommunication equipment industry. *River Academic Journal*, 3 (2).
- Ge, Y., & Qiu, J. (2007). Financial development, bank discrimination and trade credit. *Journal of Banking & Finance*, 31,513–530.
- Giannetti, M. (2003). Do better institutions mitigate agency problems? Evidence from corporate finance choices. *Journal of Financial and Quantitative Analysis*, 38, 185–212.

- Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: evidence from the United States. *Business and Economics Journal*, 10, 1-9.
- Gill, A., & Shah, C. (2012). Determinants of corporate cash holdings: Evidence from Canada. *International Journal of Economics and Finance*, 4 (1).
- Gitman, L.J. (1974). Estimating corporate liquidity requirements: A simplified approach. *The Financial Review*, 9 (3), 79-88.
- Greene, W.H. (2008). *Econometric analysis* (6th Ed.), Upper Saddle River, New Jersey, USA: Prentice Hall.
- Gujarati, D. (2003). *Basic econometrics* (4th ed.), New York, USA: McGraw Hill.
- Gul, S., Khan, M. B., Raheman, S.U., Khan, M.T., Khan, M., & Khan, W. (2013). Working capital management and performance of SME sector. *European Journal of Business and management*, 5 (1), 60-68.
- Hassan, N.U., Imran, M.M., Amjad, M., & Hussain, M. (2014). Effects of working capital management on firm performance: An empirical study of non-financial listed firms in pakistan. *International Journal of Academic Research in Business and Social Sciences*. 4 (6), 114-132.
- Hatch, M. J., & Cunliffe, A. L. (2006). *Organization theory: Modern, symbolic, and postmodern perspectives* (2nd Ed.). New York, NY: Oxford University Press.
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251-1271.
- Hill, M. D., Kelly, G. W., & Highfield, M. J. (2010). Net operating working capital behavior: A first look. *Financial Management*, 39(2), 1-44.
- Hoang, T.V. (2015). Impact of working capital management on firm profitability: the case of listed manufacturing firms on Ho Chi Minh Stock Exchange. *Asian Economic and Financial Review*, 5(5), 779-789. Retrieved from <http://www.aessweb.com/journals/5002>.

- Hsiao, C. (2003). *Analysis of panel data* (2nd Ed.), Cambridge: Cambridge University Press.
- Hutchison, P. D. Farnis, M. T., & Anders, S. B. (2007). Cash to cash analysis and management. *The CPA Journal*, 77 (8), 42–47.
- Huyghebaert, N., Van de Gucht, L., & Van Hulle, C. (2007). The choice between bank debt and trade credit in business start-ups. *Small Business Economics* (Forthcoming).
- Iftikhar, M.F. (2013). Determinants of working capital management efficiency: Case study of Pakistani automotive and engineering firms listed in Karachi Stock Exchange. *Research Journal of Finance and Accounting*, 4 (7), 2016–236. Retrieved from [http:// www.iiste.org](http://www.iiste.org).
- Jain, N. (2001). Monitoring costs and trade credit. *Quarterly Review of Economics and Finance*, 41 (1), 89-110.
- Javid, S. (2014). Effect of working capital management on SME's performance in Pakistan. *European Journal of Business and Management*, 6 (12), 206–220.
- Jeng-Ren, C., Li, C., & Han-Wen, W. (2006). The determinants of working capital management. *Journal of American Academy of Business, Cambridge*, 10 (1), 149–155.
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76, 323-329.
- Karaduman, H., Akbas, H. E., Caliskan, A. O., & Durer, S. (2011). The relationship between working capital management and profitability: Evidence from an emerging market. *International Research Journal of Finance and Economics*, 62, 61–67.
- Keppel, G., & Zedeck, S. (1989). *Data analysis for research designs: Analysis of variance and multiple regression, correlation approaches*. New York.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th Ed.). Fort Worth, TX: Harcourt.

- Khan, M.N., Rasheed, S., Ahmed, H.I., & Rizwan, M. (2016). Impact of working capital management on firm financial performance: An empirical evidence from non-financial sector of Pakistan. *International Journal of Advanced Scientific Research and Management*, 1 (5), 150–158. Retrieved from <http://www.ijasrm.com>.
- Kibet, B., Kibet, L., Tenai, J., & Mutwol, M. (2011). The determinants of leverage at the Nairobi Stock Exchange, Kenya. Second Asian Business and Management Conference 2011 Osaka, Japan.
- Kimutai, C. (2006). Media workshop clarifies misconceptions. *Petroleum Insight*, pp 12&14.
- Kumar, P., R.N. Bahl, R.N. (2014). The Effect of Inventory Management on Organizational Performance. *International Journal of Innovative Science, Engineering & Technology*, 1 (4), 453-459.
- Langroudi, M.M.N., Biabani, S., & Somesaraei, M.K. (2013). Evaluation the impact of working capital management on firms' performance: Case study of firms accepted in Tehran Stock Exchange. *International Research Journal of Applied and Basic Sciences*, 6 (12), 1817–1828. Retrieved from <http://www.irjabs.com>.
- Lau, J., & Block, J. H. (2012). Corporate cash holdings and their implications on firm value in family and founder firms. *Corporate Ownership and Control*, 9, 309-326.
- Lazaridis, I., & Tryfonidis, D. (2006). The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis*, 19, 26-35.
- Lev B., & Sunder S. (1979). Methodological issues in the use of financial ratios. *Journal of Accounting and Economics*, 1(3), 187-210.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2002). Equivalence of the mediation, confounding and suppression effects. *Prevention Science*, 7, 173–181.

- Maina, F. G., & Sakwa, M. M. (2012). Understanding financial distress among listed firms in Nairobi stock exchange: A quantitative approach using the Z-score multi-discriminant financial analysis model. In *Scientific Conference Proceedings*.
- Mansoori, E., & Muhammad, J. (2012). Determinants of working capital management: Case of Singapore firms. *Research Journal of Finance and Accounting*, 3 (11), 15–23.
- Martínez Sola, C., García-Teruel P. J., & Martínez Solano, P. (2012). Trade credit policy and firm value. Working Papers. Serie EC 2012-01, Instituto Valenciano de Investigaciones Económicas, S.A. (Ivie).
- Masinde, J. (2015, June 12). Cash-strapped Uchumi seeks Sh500m loan to pay suppliers. *Daily Nation*, p. 34.
- Mathuva, D. M. (2010). The influence of working capital management components on corporate profitability: A survey on Kenya Listed Firms. *Research Journal of Business Management*, 1-11.
- Mathuva, D.M. (2013). Determinants of Corporate Inventory holdings: Evidence from a developing country. *The International Journal of Applied Economics and Finance*, 7 (1), 1-22.
- McGuigan, J.R., Moyer, R.C., Rao, R., & Kretlow, W.J. (2012). *Contemporary corporate finance* (12th Edn.), Cengage Learning: South-Western.
- McMillan, J., & Woodruff, C. (1999). Inter-firm relationships and informal credit in Vietnam. *The Quarterly Journal of Economics*, 114 (4), 1285-1320.
- Mian, S. & Smith, C. (1992). Accounts receivables Management Policy: Theory and Evidence. *The Journal of Finance*, 47(1), 169–200.
- Michira, M. (2015, June 16). Uchumi's troubles worsen, again. *The Standard*.
- Mihajlov, K. (2012). Impact of accounts receivables management on the profitability during the financial crisis: Evidence from Serbia. *Journal of Financial Management*, 2, 10 – 70.

- Modigliani, F. (1957). Business Reasons for holding inventories and their macro-economic implications, NBER Chapters. In: problems of capital formation: concepts, measurement, and controlling factors. national bureau of economic research, inc, 495-511.
- Mohamed, N.A., & Saad, N. (2010). Working capital management: The effect of market valuation and profitability in Malaysia. *International Journal of Business and Management*, 5(11), 140-147.
- Moussawi, R., LaPlante, M., Kieschnick, R., & Baranchuk, N. (2006). Corporate working capital management: Determinates and Consequences. Retrieved from: http://www.129.62.162.212/seminars/papers/cwcm_current.pdf.
- Mukhopadhyay, D. (2004). Working capital management in heavy engineering firms - A Case study. *Management Accountant*, 39 (4), 317-323.
- Mwangi, L.W., Makau, S.M., & Kosimbei, G. (2014). Effects of working capital management on performance of non-financial companies listed in NSE, Kenya. *European Journal of Business and Management*, 6 (11), 195-205.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics*, 13, 187-221.
- Napompech, K. (2012). Effects of working capital management on the profitability of Thai Listed Firms. *International Journal of Trade, Economics and Finance*, 3 (3), 227-232.
- Naser, K., & Mokhtar, M. Z. (2004, July). *Determinants of corporate performance of Malaysian companies*. Paper presented at the Fourth Asia Pacific Interdisciplinary Research in Accounting Conference, Singapore.
- Nazir, M.S., & Afza, T. (2009). Impact of aggressive working capital management policy on firms' profitability. *The IUP Journal of Applied Finance*, 15 (8), 19-30.
- Ng, C.K., Smith, J.K., & Smith, R.L. (1999). Evidence on the determinants of credit terms used in inter-firm trade. *Journal of Finance*, 54, 1109–1129.

- Ngugi, R., Amanja, D., & Maana, I. (2009). Capital market, financial deepening and economic growth in Kenya. In Centre for the study of African economies Conference, 22-24.
- Nairobi Securities Exchange (2015). History of NSE. Retrieved from <https://www.nse.co.ke/nse/history-of-nse.html>
- Nairobi Securities Exchange (2015). Listed Companies. Retrieved from <https://www.nse.co.ke/listed-companies/list.html>
- Nilsen, J. H. (2002). Trade credit and bank lending channel *journal of money, credit, and banking*, 34 (1): 226-253.
- Niresh, J. A. (2012). Trade-off between liquidity and profitability: A Study of selected manufacturing firms in Sri Lanka. *Journal of Arts, Science & Commerce*, 4(2).
- Njanja, L. W. & Pellisier, R. (2011). The integrative effects of various management strategies in the performance of MSMEs. *International Business And Management Journal* , 2 (2), 105-116.
- Nobanee, H., & AlHajjar, M. (2009). A Note on Working Capital Management and Corporate Profitability of Japanese Firms. Retrieved from <http://ssrn.com/abstract=1433243>.
- Nobanee, H. (2010). Working capital management and firm's profitability: An optimal cash conversion cycle. Retrieved from <http://ssrn.com/abstract=1471230>.
- Nobanee, H., & Al Hajjar, M. (2012). Working capital management and firm's profitability: An optimal cash conversion cycle. Retrieved from <http://ssrn.com/abstract=2128662>
- Nwaeze, E.T., Yang, S.S.M., & Yin, Q.J. (2006). Accounting information and CEO compensation: The role of cash flow from operations in the presence of earnings. *Contemporary Accounting Research*, 23(1), 227–265.
- Nyambwaga, R. N., Ojera, P., Lumumba, M., Odondo, A., & Otieno, S. (2012). Effect of working capital management practices on financial performance: A study of

small-scale enterprises in Kisii South District, Kenya. *African Journal of Business Management*, 6, 5807-5817.

Nyamweno, C.N., & Olweny, T. (2014). *Effect of working capital management on performance of firms listed at the Nairobi Securities Exchange*. *Economics and Finance Review*, 3(11), 1–14. Retrieved from <http://www.businessjournalz.org/efr>.

Nzioki, P.M., Kimeli, S.K., Abudho, M.R., & Nthiwa, J.M. (2013). Management of working capital and its effect on profitability of manufacturing companies listed on Nairobi securities exchange (NSE), Kenya. *International Journal of Business and Finance Management Research*, 1, 35–42.

Ogundipe, L. O., Ogundipe, S. E., & Ajao, S. K. (2012). Cash holding and firm characteristics: Evidence from Nigerian Emerging Market. *Journal of Business, Economics and Finance*, 1 (2), 45–58.

Ohtani, H., & Honda, Y. (2008). Modified Wald tests in tests of equality between sets of coefficients in two linear regressions under heteroscedasticity. *The Manchester School*, 54 (2), 2008-218.

Omondi, M.M. & Muturi, W. (2013). Factors affecting the financial performance of listed companies at the Nairobi Securities Exchange in Kenya. *Research Journal of Finance and Accounting*, 4(15), 100-105.

Opler, T., Pinkowitz, L., Stulz, R., & Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of Financial Economics*, 52, 3- 46.

Ozkan A., & Ozakan, N. (2004). Corporate cash holdings: An empirical investigation of UK companies. *Journal of Banking and Finance*, 28, 2103–2134.

Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: An analysis of Mauritian small manufacturing firms. *International Review of Business Research Papers*, 2(2), 45-58.

- Palazzo, B. (2011). Cash holdings, risk, and expected returns. *Journal of Financial Economics*, 104 (1), 162–185.
- Paramasivan, C., & Subramanian, T. (2009). *Financial Management*. New Delhi: New Age International Pvt. Ltd.
- Pedro, J. & Martinez, P. (2010). Determinants of trade credit: A comparative study of European SMEs. *International Small Business Journal*, 16, 22-35.
- Petersen, M. A., & Rajan, R. G. (1997). Trade credit: theories and evidence. *Review of Financial Studies*, 10, 661–692.
- Peyrot, M. (1996). Causal analysis: Theory and application. *Journal of Pediatric Psychology*, 21, 3–24.
- Pike, R., & Cheng, N. S. (2001). Credit management: An examination of policy choices, practices and late payment in UK companies. *Journal of Business Finance and Accounting*, 28 (7), 1013–1042.
- Pike, R., Cheng, N.S., & Cravens, K., & Lamminmaki, D. (2005). Trade credits terms: Asymmetric information and price discrimination evidence from three continents. *Journal of Business Finance Accounting*, 32, 197–236.
- Prahalathan, B. (2010). *The impact of working capital management on cash holding: A quantitative study of listed manufacturing companies in Colombo Stock Exchange market in Sri Lanka*. Proceedings of the 9th Annual Research Session (p. 98). Faculty of Arts and Culture, Eastern University, Sri Lanka.
- Pratheepkanth, P. (2011). Capital structure and financial performance: Evidence from selected Business Companies in Colombo Stock Exchange, Sri Lanka, *Journal of Arts, Science and Commerce*, 2 (2), 171–173.
- Poi, B., & Wiggins, V. (2001). Testing for panel-level Heteroskedasticity and Autocorrelation. Stata Corp LP. Retrieved from <http://www.stata.com!support/faq s/stat/panel.html>.

- Raheman, A., & Nasr, M. (2007). Working capital management and profitability: Case of Pakistan firms. *International Review of Business Research Papers*, 3 (1), 279-300.
- Raheman, A., Afza, T., Qayyum, A., & Bodla, M.A. (2010). Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan. *International Research Journal of Finance and Economics*, 47, 151-163.
- Rao, R. K. S. (1989). *Fundamentals of financial management* (3rd Ed.), Macmillan Publishers, 550–644.
- Rao, N. V., Al-Yahyaee, K. H. M., & Syed, L. A. M (2007). Capital structure and financial performance: Evidence from Oman. *Indian Journal of Economics and Business*, 1– 23.
- Rashvand, A., & Tariverdi, Y. (2015). Effect of working capital management on operating cash flow. *Journal of Applied Environmental and Biological Sciences*, 5(1), 39–46.
- Ray, D. (2012). Evaluating the impact of working capital management components on corporate profitability: Evidence from Indian Manufacturing Firms. *International Journal of Economic Practices and Theories*, 2 (3), 127-136.
- Remenyi, D. (1996). So you want to be an academic researcher in business and management studies! Where do you start? *South African Journal of Business Management*, 1-20.
- Ricci, C., & Vito, N. (2000). International working capital practices in the UK. *European Financial Management*, 6 (1), 69-84.
- Ross, S.A., Westerfield, R.W., Jaffe, J. & Jordan, B.D. (2008). *Modern Financial Management* (8th Ed.), McGraw-Hill: New York.
- Salek, J.G. (2005). *Accounts receivable management best practices*. John Wiley & Sons: New Jersey.
- Salempour, J., & Vaez, S.A. (2015). Relationship between components of working capital management and profitability of companies listed on Tehran Stock

- Exchange. *International Journal of Review in Life Sciences*, 5 (8), 2, 1762-1769.
- Samiloglu, F., & Demirgunes, K. (2008). The effects of working capital management on firm profitability: Evidence from Turkey. *The international Journal of Applied Economics and Finance*, 2 (1), 44 – 50.
- Santos, J. A. C. (2001). Bank capital regulation in contemporary banking: A review of literature: *Financial Markets, Institutions and Instruments*, 10 (2), 42-84.
- Sartoris, W., & Hill, N. (1983). Cash and working capital management. *The Journal of Finance*, 38, 349–360.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th Ed.), Italy: Prentice Hall.
- Schiff, M., & Lieber, Z. (1974). A model for the integration of credit and inventory management. *The Journal of Finance*, 29, 133–140.
- Schwartz, R.A. (1974). An economic model of trade credit. *Journal of financial and quantitative analysis*, 9, 643-657.
- Sharma, A.K., & Kumar, S. (2011). Effect of working capital management on firm profitability: Empirical Evidence from India. *Global Business Review*, 12 (1) 159–173. Retrieved from <http://gbr.sagepub.com>.
- Shin, H.H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education* (8), 2, 37–45.
- Siddiquee, M. & Khan, S. M. (2009). Analyzing Working Capital Performance: Evidence from Dhaka Stock Exchange (DSE) Ltd. Retrieved from <http://ssrn.com/abstract=1374210>
- Stock, J. (1994). Unit roots, structural breaks and trends. *Handbook of Econometrics* , 4, 2739–2841.
- Sullivan, D. (1994). Measuring the degree of internationalization of a firm. *Journal of International Business Studies*, 25 (2), 325-342.

- Takon, S.M., & Atseye, F.A. (2015). Effect of working capital management on firm profitability in selected Nigerian quoted companies. *International Journal of Economics, Commerce and Management*, 3 (10), 414-438.
- Tsay, R. (2001). *Analysis of financial time-series*. New York. John Wiley and Sons.
- Vahid, T.K., Elham, G., Mohsen, A.K., & Mohammadreza, E. (2012). Working capital management and corporate performance: Evidence from Iranian companies. *Procedia - Social and Behavioral Sciences*, 62, 1313 – 1318. Retrieved from [http:// www.sciencedirect.com](http://www.sciencedirect.com).
- Van Der Wijst, N., & Hol, S. (2002). Trade credit in Europe. Mimeo, Norwegian University of Science and Technology, Trondheim.
- Wang, Y.J. (2002). Liquidity management, operating performance, and corporate value: Evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, 12(2), 159–69.
- Wasiuzzaman, S., & Arumugam, V.C. (2013). Determinants of working capital investment: A study of Malaysian public listed firms. *Australasian Accounting Business and Finance Journal*, 7 (2), 49–70. Retrieved from <http://ro.uow.edu.au/aabfj/vol7/iss2/5>.
- Wen, Y. (2003). Understanding the inventory cycle. *Journal of Monetary Economics*, 52, 1533–1555.
- Wenyao, L. (2010). The Determinants of Cash Holdings: Evidence from Chinese Listed Companies. Available on line at <http://www.seiofbluemountain.com>. Diakses tanggal, 2.
- White, D. (2008). Accounts Receivable: Analyzing the Turnover Ratio. *Journal of account receivable*.
- Wilner, B.S. (2000). The exploitation of relationships in financial distress: The case of trade credit. *Journal of Finance*, 55, 153–178.
- Wooldridge, J. (2002). *Econometrics analysis of cross section and panel data*, MIT Press.

- Yeboah, B., & Agyei, S.K. (2012). Working capital management and cash holdings of banks in Ghana. *European Journal of Business and Management*, 4 (13), 120–130. Retrieved from Retrieved from <http://www.iiste.org>.
- Yasir, M., Majid, A, & Yousaf, Z. (2014). Cash conversion cycle and its impact upon firm performance: An evidence from cement industry of Pakistan. *Global Business and Management Research: An International Journal*, 6 (2), 139-149.
- Zariyawati, M.A, Annuar, M.N., & Abdul Rahim A.S. (2009, July 6–8). *Effect of working capital management on profitability of firms in Malaysia*. Paper presented in International Symposium on Finance and Accounting, Malaysia. Retrieved from list.academic-journal.org/submissions/isfa2009_submission_13.doc.
- Zariyawati, M. A., Taufiq, H., Annuar, M. N., & Sazali, A. (2010, June 18–20). Determinants of working capital management: Evidence from Malaysia. *Financial Theory and Engineering: Proceedings of the 2010 International Conference*, IEEE Computer Society Press (pp. 190-194). Dubai, UAE.
- Zariyawati M.A., Annuar, M.N., & Pui-San, N. (2016). Working capital management determinants of small and large firms in Malaysia. *International Journal of Economics and Management*, 10 (2): 365 – 377.
- Zeitun, R. & Tian, G. (2007). Capital structure and corporate performance: Evidence From Jordan. *Australasian Accounting Business and Finance Journal*, 1, 40–53.

APPENDICES

Appendix I: Non-Financial Firms Listed at the NSE, Kenya

Sector/Segment	Firm
Agricultural	1. Eaagads Ltd.
	2. Kakuzi Ltd.
	3. Kapchorua Tea Co. Ltd.
	4. The Limuru Tea Co. Ltd
	5. Rea Vipingo Plantations Ltd.
	6. Sasini Ltd.
	7. Williamson Tea Kenya Ltd.
Automobiles & Accessories	8. Car & General (K) Ltd.
	9. Marshalls (E.A.) Ltd.
	10. Sameer Africa Ltd.
Commercial And Services	11. Express Kenya Ltd.
	12. Hutchings Biemer Ltd.
	13. Kenya Airways Ltd.
	14. Longhorn Kenya Ltd.
	15. Nation Media Group Ltd.
	16. Scangroup Ltd.
	17. Standard Group Ltd.
	18. TPS Eastern Africa Ltd.
	19. Uchumi Supermarket Ltd.
	20. Atlas Development and Support Services
Construction & Allied	21. ARM Cement Ltd.
	22. Bamburi Cement Ltd.
	23. Crown Paints Kenya Ltd.
	24. E.A. Cables Ltd.
	25. E.A. Portland Cement Co. Ltd.
Energy & Petroleum	26. KenGen Co. Ltd.
	27. KenolKobil Ltd.
	28. Kenya Power & Lighting Co. Ltd.
	29. Total Kenya Ltd.
	30. Umeme Ltd.
Manufacturing & Allied	31. A. Baumann & Co. Ltd.
	32. B.O.C Kenya Ltd.
	33. British American Tobacco Kenya Ltd.
	34. Carbacid Investments Ltd.
	35. East African Breweries Ltd.
	36. Eveready East Africa Ltd.
	37. Kenya Orchards Ltd.
	38. Mumias Sugar Co. Ltd.
	39. Unga Group Ltd.

Source: <https://www.nse.co.ke/> (2015)

Appendix II: List of Selected Firms

Sector/Segment	Firm
1. Agricultural	1. Kakuzi Ltd.
	2. Kapchorua Tea Co. Ltd.
	3. Rea Vipingo Plantations Ltd.
	4. Sasini Ltd.
	5. Williamson Tea Kenya Ltd.
2. Automobiles & Accessories	6. Car & General (K) Ltd.
	7. Marshalls (E.A.) Ltd.
	8. Sameer Africa Ltd.
3. Commercial And Services	9. Kenya Airways Ltd.
	10. Nation Media Group Ltd.
	11. Standard Group Ltd.
	12. TPS Eastern Africa Ltd.
4. Construction & Allied	13. ARM Cement Ltd.
	14. Bamburi Cement Ltd.
	15. Crown Paints Kenya Ltd.
	16. E.A. Cables Ltd.
	17. E.A. Portland Cement Co. Ltd.
5. Energy & Petroleum	18. KenolKobil Ltd.
	19. Kenya Power & Lighting Co. Ltd.
	20. Total Kenya Ltd.
6. Manufacturing & Allied	21. B.O.C Kenya Ltd.
	22. British American Tobacco Kenya Ltd.
	23. Carbacid Investments Ltd.
	24. East African Breweries Ltd.
	25. Mumias Sugar Co. Ltd.
	26. Unga Group Ltd.

Source: <https://www.nse.co.ke/> (2015)

Appendix III: Research Permit

**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

12th October, 2015

NACOSTI/P/15/87580/8007


Daniel Mogaka Makori
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Short-Term financing decisions and financial performance of firms listed at the Nairobi Securities Exchange, Kenya*" I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **12th October, 2016**.

You are advised to report to **the Governor, Central Bank of Kenya, the Chief Executive Officers of selected Companies, the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


SAID HUSSEIN
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Governor
Central Bank of Kenya.

The Chief Executive Officers
Selected Companies.



Appendix IV: Document Review Guide-Data Abstraction Tool

Variable	Measurement	Formula	Data	Source: Financial Statements 2001–2014
Inventory Turnover Decisions	Inventory Holding Period (IHP)	<ul style="list-style-type: none"> ❖ $IHP = 365 / \text{Inventory Turnover (IT)}$ ❖ $IT = \text{Cost of Goods Sold} / \text{Average Inventory}$ ❖ $\text{Average Inventory} = (\text{Beginning Inventory} + \text{Ending Inventory}) / 2$ 	Cost of Goods Sold	Statement of Financial Position
			Beginning Inventory	Statement of Financial Position
			Ending Inventory	Statement of Financial Position
Accounts Receivable Turnover Decisions	Accounts Receivable Period (ARP)	<ul style="list-style-type: none"> ❖ $ARP = 365 / \text{Accounts Receivable Turnover (ART)}$ ❖ $ART = \text{Sales} / \text{Average Accounts Receivable}$ ❖ $\text{Average Accounts} = (\text{Beginning Accounts Receivable} + \text{Ending Accounts Receivable}) / 2$ 	Sales	Statement of Financial Performance
			Beginning Accounts Receivable	Statement of Financial Position
			Ending Accounts Receivable	Statement of Financial Position
Accounts Payable Turnover Decisions	Accounts Payable Period (APP)	<ul style="list-style-type: none"> ❖ $APP = 365 / \text{Accounts Payable Turnover (APT)}$ ❖ $APT = \text{Cost of Goods Sold} / \text{Average Accounts Payable}$ ❖ $\text{Average Accounts Payable} = (\text{Beginning Accounts Payable} + \text{Ending Accounts Payable}) / 2$ 	Cost of Goods Sold	Statement of Financial Performance
			Beginning Accounts Payable	Statement of Financial Position
			Ending Accounts Payable	Statement of Financial Position
Cash Holding	Cash Ratio (CR)	<ul style="list-style-type: none"> ❖ $CR = \text{Cash and Cash Equivalents} / \text{Book Value of Assets-Cash and Cash Equivalents}$ 	Cash and Cash Equivalents	Statement of Cash Flows
			Book Value of Assets	Statement of Financial Position

Firm Size (SIZE)	Total Assets	❖ $SIZE = \text{Logarithm of total assets of each firm}$	Total Assets	Statement of Financial Position
Growth Opportunities	Revenue Growth Rate (GROWTH)	❖ $\text{Natural Log (Revenue for year } t/\text{Revenue year } t-1)$	Sales	Statement of Financial Performance
Leverage (LEV)	Debt to Total Assets Ratio	❖ $LEV = \text{Total Liabilities/Total Assets}$	Total Liabilities	Statement of Financial Position
			Total Assets	Statement of Financial Position
Financial Performance	Return on Assets (ROA)	❖ $\text{Earnings Before Tax \& Interest/Total Assets}$	Earnings Before Tax and Interest	Statement of Financial Performance
			Total Assets	Statement of Financial Position
	Return on Equity (ROE)	❖ $\text{Earnings Before Tax \& Interest/Total Equity}$	Earnings Before Tax and Interest	Statement of Financial Performance
			Total Equity	Statement of Financial Position
	Tobin-Q (TQ)	❖ $\text{Market Value of Equity + Book Value of Liabilities/Total Assets}$	Market Value of Equity	NSE Handbooks and Statement of Financial Position
			Book Value of Liabilities	Statement of Financial Position
Total Assets			Statement of Financial Position	

Source: Researcher (2016)

Appendix V: Document Review Guide-Data Entry Sheet

Name of the Firm:

Segment:

Year	Inventory Turnover Decisions	Accounts Receivable Turnover Decisions	Accounts Payable Turnover Decisions	Cash Holdings	Firm Size	Growth Opportunities	Leverage	ROA	ROE	Tobin-Q
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
2009										
2010										
2011										
2012										
2013										
2014										

Source: Annual Reports (2016)

Appendix VI: Diagnostic Test Results

Table A.1: Panel Unit Root Test Results

Variable	Level	Test	Unit Roots Tests			
			ADF Test		PP Test	
			Statistic	P-Value	Statistic	P-Value
Return on Assets (ROA)	Level	Inverse chi-squared	132.2245	0.0000	132.2245	0.0000
		Inverse normal	-5.6939	0.0000	-5.6939	0.0000
		Inverse logit	-6.2341	0.0000	-6.2341	0.0000
		Modified inverse chi-squared	7.8667	0.0000	7.8667	0.0000
Return on Equity (ROE)	Level	Inverse chi-squared	157.5715	0.0000	157.5715	0.0000
		Inverse normal	-6.8115	0.0000	-6.8115	0.0000
		Inverse logit	-7.6429	0.0000	-7.6429	0.0000
		Modified inverse chi-squared	10.3521	0.0000	10.3521	0.0000
Tobin-q (TQ)	Level	Inverse chi-squared	161.0559	0.0000	161.0559	0.0000
		Inverse normal	-5.1285	0.0000	-5.1285	0.0000
		Inverse logit	-7.6082	0.0000	-7.6082	0.0000
		Modified inverse chi-squared	10.6938	0.0000	10.6938	0.0000
Inventory Holding Period (IHP)	Level	Inverse chi-squared	145.8909	0.0000	145.8909	0.0000
		Inverse normal	-4.6147	0.0000	-4.6147	0.0000
		Inverse logit	-6.4173	0.0000	-6.4173	0.0000
		Modified inverse chi-squared	9.2068	0.0000	9.2068	0.0000
Accounts Receivable Period (ARP)	Level	Inverse chi-squared	126.3324	0.0000	126.3324	0.0000
		Inverse normal	-3.7496	0.0001	-3.7496	0.0001
		Inverse logit	-5.1806	0.0000	-5.1806	0.0000
		Modified inverse chi-squared	7.2889	0.0000	7.2889	0.0000
Accounts Payable Period (APP)	Level	Inverse chi-squared	101.6809	0.0000	101.6809	0.0000
		Inverse normal	-2.8582	0.0021	-2.8582	0.0021

		Inverse logit	-3.3638	0.0005	-3.3638	0.0005
		Modified inverse chi-squared	4.8716	0.0000	4.8716	0.0000
Cash Conversion Cycle (CCC)	Level	Inverse chi-squared	93.7243	0.0002	93.7243	0.0002
		Inverse normal	-2.9496	0.0016	-2.9496	0.0016
		Inverse logit	-3.1756	0.0009	-3.1756	0.0009
		Modified inverse chi-squared	4.014	0.0000	4.014	0.0000
Cash Ratio (CR)	Level	Inverse chi-squared	118.8898	0.0000	118.8898	0.0000
		Inverse normal	-4.1371	0.0000	-4.1371	0.0000
		Inverse logit	-4.7791	0.0000	-4.7791	0.0000
		Modified inverse chi-squared	6.5591	1.0000	6.5591	1.0000
Firm Size (SIZE)	Level	Inverse chi-squared	8.4054	1.0000	8.4054	1.0000
		Inverse normal	6.9315	1.0000	6.9315	1.0000
		Inverse logit	7.0494	1.0000	7.0494	1.0000
		Modified inverse chi-squared	-4.2748	1.0000	-4.2748	1.0000
	First difference	Inverse chi-squared	256.9046	0.0000	256.9046	0.0000
		Inverse normal	-11.5691	0.0000	-11.5691	0.0000
		Inverse logit	-13.7819	0.0000	-13.7819	0.0000
		Modified inverse chi-squared	26.0926	0.0000	26.0926	0.0000
Growth Opportunities (GROWTH)	Level	Inverse chi-squared	287.6217	0.0000	287.6217	0.0000
		Inverse normal	-12.7766	0.0000	-12.7766	0.0000
		Inverse logit	-15.5214	0.0000	-15.5214	0.0000
		Modified inverse chi-squared	23.1046	0.0000	23.1046	0.0000
Financial Leverage (LEV)	Level	Inverse chi-squared	186.4286	0.0000	186.4286	0.0000
		Inverse normal	-4.2588	0.0000	-4.2588	0.0000
		Inverse logit	-7.8731	0.0000	-7.8731	0.0000
		Modified inverse chi-squared	13.1818	0.0000	13.1818	0.0000
Significant at 5 percent level						

Source: Study Data (2016)

Table A.2: Jarque-Bera Test for Normality

```
. sktest r
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
r	338	0.0000	0.0000	73.47	0.0000

Source: Study Data (2016)**Table A.3: Heteroskedasticity Test Results**

```
. xttest3
```

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: $\sigma(i)^2 = \sigma^2$ for all i

chi2 (26) = 1673.00
Prob>chi2 = 0.0000

Source: Study Data (2016)**Table A.4: Serial Correlation Tests**

```
. xtserial ROA ROE TQ IHP ARP APP ccc CR DSIZE GROWTH LEV
```

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 25) = 1.258
Prob > F = 0.2728

Source: Study Data (2016)

Appendix VII: Testing for Random and Fixed Effects

Table A.5: Random Effect Test Results for ROA

```

. xtreg ROA IHP ARP APP ccc CR DSIZE GROWTH LEV, re

```

Random-effects GLS regression	Number of obs	=	338
Group variable: firm1	Number of groups	=	26
R-sq:	Obs per group:		
within = 0.2687	min =		13
between = 0.5722	avg =		13.0
overall = 0.4112	max =		13
	Wald chi2(8)	=	136.55
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

ROA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	.0000688	.0001256	0.55	0.584	-.0001774	.0003151
ARP	-.0005234	.0001971	-2.66	0.008	-.0009097	-.0001371
APP	.000039	.0000922	0.42	0.672	-.0001417	.0002197
ccc	.0001592	.0000812	1.96	0.050	2.38e-08	.0003185
CR	.1450628	.0400101	3.63	0.000	.0666445	.2234812
DSIZE	.1432033	.02335	6.13	0.000	.0974382	.1889684
GROWTH	.0516467	.021577	2.39	0.017	.0093566	.0939368
LEV	-.1205873	.0390039	-3.09	0.002	-.1970336	-.044141
_cons	.1456821	.0284303	5.12	0.000	.0899598	.2014043
sigma_u	.05336664					
sigma_e	.06442629					
rho	.40692983	(fraction of variance due to u_i)				


```

. estimates store random

```

Source: Study Data (2016)

Table A.6: Fixed Effect Results for ROA

```

. xtreg ROA IHP ARP APP ccc CR DSIZE GROWTH LEV,fe

```

Fixed-effects (within) regression	Number of obs	=	338
Group variable: firm1	Number of groups	=	26

R-sq:	Obs per group:
within = 0.2734	min = 13
between = 0.4422	avg = 13.0
overall = 0.3512	max = 13

	F(8,304)	=	14.30
corr(u_i, Xb) = 0.2022	Prob > F	=	0.0000

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
IHP	-7.08e-06	.0001405	-0.05	0.960	-.0002835 .0002693
ARP	-.0003929	.0002185	-1.80	0.073	-.0008229 .0000371
APP	-.0000688	.0001068	-0.64	0.520	-.0002791 .0001414
ccc	.0001396	.0000927	1.51	0.133	-.0000429 .0003221
CR	.1328695	.042673	3.11	0.002	.0488978 .2168413
DSIZE	.1436003	.0233539	6.15	0.000	.0976446 .189556
GROWTH	.0493544	.0218782	2.26	0.025	.0063024 .0924063
LEV	-.1235444	.0436351	-2.83	0.005	-.2094095 -.0376794
_cons	.1595414	.0294419	5.42	0.000	.1016058 .2174771

sigma_u	.06409454
sigma_e	.06442629
rho	.49741877 (fraction of variance due to u_i)

F test that all u_i=0: F(25, 304) = 8.98	Prob > F = 0.0000
--	-------------------


```

. estimates store fixed
.

```

Source: Study Data (2016)

Table A.8: Fixed Effect Results for ROE

```

. xtreg ROE IHP ARP APP ccc CR DSIZE GROWTH LEV,fe

```

Fixed-effects (within) regression	Number of obs	=	338
Group variable: firm1	Number of groups	=	26

R-sq:	within = 0.1423	Obs per group:	min = 13
	between = 0.2956		avg = 13.0
	overall = 0.1804		max = 13

corr(u _i , Xb) = -0.0726	F(8,304)	=	6.30
	Prob > F	=	0.0000

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
IHP	-.0005783	.000675	-0.86	0.392	-.0019067	.00075
ARP	-.0020743	.0010501	-1.98	0.049	-.0041407	-7.86e-06
APP	.0006982	.0005134	1.36	0.175	-.0003121	.0017085
ccc	.0014138	.0004457	3.17	0.002	.0005368	.0022908
CR	-.1945929	.2050794	-0.95	0.343	-.5981478	.2089621
DSIZE	.4128961	.112235	3.68	0.000	.1920402	.633752
GROWTH	.1834171	.1051433	1.74	0.082	-.0234838	.3903179
LEV	-.3935668	.2097032	-1.88	0.062	-.8062204	.0190869
_cons	.3540467	.1414929	2.50	0.013	.0756172	.6324763

sigma_u	.15976394
sigma_e	.30962238
rho	.21026776 (fraction of variance due to u _i)

F test that all u _i =0: F(25, 304) = 2.63	Prob > F = 0.0001
--	-------------------


```

. estimates store fixed
.

```

Source: Study Data (2016)

Table A.9: Random Effect Results for TQ

```

. xtreg TQ IHP ARP APP ccc CR DSIZE GROWTH LEV, re

```

Random-effects GLS regression	Number of obs	=	338
Group variable: firm1	Number of groups	=	26
R-sq:	Obs per group:		
within = 0.0769	min =		13
between = 0.3108	avg =		13.0
overall = 0.2196	max =		13
	Wald chi2(8)	=	36.56
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

TQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	-.0012261	.001321	-0.93	0.353	-.0038152	.0013631
ARP	-.0072364	.0020689	-3.50	0.000	-.0112912	-.0031815
APP	.0033259	.0009764	3.41	0.001	.0014122	.0052396
ccc	.0014265	.0008582	1.66	0.096	-.0002556	.0031086
CR	.237311	.4161892	0.57	0.569	-.5784049	1.053027
DSIZE	.3492395	.2391108	1.46	0.144	-.1194091	.8178882
GROWTH	.1062271	.2216293	0.48	0.632	-.3281584	.5406126
LEV	1.173938	.4101823	2.86	0.004	.3699958	1.977881
_cons	1.026454	.3051918	3.36	0.001	.4282891	1.624619
sigma_u	.64055776					
sigma_e	.65291825					
rho	.49044484	(fraction of variance due to u_i)				


```

. estimates store random

```

Source: Study Data (2016)

Table A.10: Fixed Effect Results for TQ

```

. xtreg TQ IHP ARP APP ccc CR DSIZE GROWTH LEV,fe

```

Fixed-effects (within) regression	Number of obs	=	338
Group variable: firm1	Number of groups	=	26

R-sq:	within = 0.0853	Obs per group:	min = 13
	between = 0.1201		avg = 13.0
	overall = 0.1077		max = 13

	F(8,304)	=	3.54
corr(u_i, Xb) = 0.0066	Prob > F	=	0.0006

TQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
IHP	-.0019739	.0014235	-1.39	0.167	-.0047751	.0008273
ARP	-.0068376	.0022145	-3.09	0.002	-.0111952	-.00248
APP	.0022345	.0010827	2.06	0.040	.000104	.004365
ccc	.0011873	.0009398	1.26	0.207	-.0006621	.0030367
CR	-.0054636	.4324626	-0.01	0.990	-.8564628	.8455355
DSIZE	.3488475	.2366764	1.47	0.142	-.1168839	.8145788
GROWTH	.0594602	.2217217	0.27	0.789	-.3768433	.4957637
LEV	1.283191	.4422131	2.90	0.004	.4130044	2.153377
_cons	1.173433	.2983741	3.93	0.000	.5862929	1.760573

sigma_u	.83202367
sigma_e	.65291825
rho	.61888491 (fraction of variance due to u_i)

F test that all u_i=0: F(25, 304) = 13.06	Prob > F = 0.0000
---	-------------------


```

. estimates store fixed

```

Source: Study Data (2016)

Appendix VIII: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and ROA

Table A.11: Effect of Short-Term Financing Decisions on ROA (First Step)

```
. xtgls ROA IHP ARP APP ccc DSIZE GROWTH LEV
Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1          Number of obs = 338
Estimated autocorrelations = 0      Number of groups = 26
Estimated coefficients = 8          Time periods = 13
Log likelihood = 360.61             Wald chi2(7) = 227.31
                                      Prob > chi2 = 0.0000
```

ROA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	.0001125	.0000938	1.20	0.230	-.0000713	.0002963
ARP	-.0011288	.0001514	-7.46	0.000	-.0014254	-.0008321
APP	.0003515	.0000611	5.75	0.000	.0002317	.0004714
ccc	.0001696	.0000599	2.83	0.005	.0000521	.000287
DSIZE	.1705	.0287589	5.93	0.000	.1141336	.2268664
GROWTH	.0669415	.02577	2.60	0.009	.0164332	.1174499
LEV	-.2109442	.0262705	-8.03	0.000	-.2624335	-.1594549
_cons	.1915064	.0183334	10.45	0.000	.1555737	.2274392

Source: Study Data (2016)

Table A.12: Effect of Short-Term Financing Decisions on CR (Second Step)

```
. xtgls CR IHP ARP APP ccc DSIZE GROWTH LEV
Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1          Number of obs = 338
Estimated autocorrelations = 0      Number of groups = 26
Estimated coefficients = 8          Time periods = 13
Log likelihood = 223.0926           Wald chi2(7) = 256.61
                                      Prob > chi2 = 0.0000
```

CR	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	-.000909	.0001409	-6.45	0.000	-.0011851	-.0006329
ARP	-.0012822	.0002274	-5.64	0.000	-.0017278	-.0008366
APP	.0008743	.0000918	9.52	0.000	.0006943	.0010543
ccc	.0000745	.00009	0.83	0.408	-.0001019	.0002509
DSIZE	.0720687	.0431984	1.67	0.095	-.0125987	.156736
GROWTH	-.0040951	.0387089	-0.11	0.916	-.0799631	.0717729
LEV	-.4435851	.0394606	-11.24	0.000	-.5209265	-.3662437
_cons	.3268337	.0275383	11.87	0.000	.2728595	.3808078

Source: Study Data (2016)

Table A.13: Effect of Short-Term Financing Decisions and Cash Holdings on ROA (Third and Fourth Steps)

```
. xtgls ROA CR IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 9 Time periods = 13
 Wald chi2(8) = 265.78
Log likelihood = 371.7358 Prob > chi2 = 0.0000

ROA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CR	.1680426	.0350389	4.80	0.000	.0993675	.2367176
IHP	.0002652	.0000962	2.76	0.006	.0000767	.0004538
ARP	-.0009133	.0001532	-5.96	0.000	-.0012136	-.0006131
APP	.0002046	.0000666	3.07	0.002	.0000074	.0003352
ccc	.0001571	.000058	2.71	0.007	.0000433	.0002708
DSIZE	.1583894	.027942	5.67	0.000	.103624	.2131547
GROWTH	.0676297	.024936	2.71	0.007	.018756	.1165033
LEV	-.136403	.0297951	-4.58	0.000	-.1948003	-.0780058
_cons	.1365844	.021115	6.47	0.000	.0951998	.1779691

Source: Study Data (2016)

Appendix IX: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and ROE

Table A.14: Effect of Short-Term Financing Decisions on ROE (First Step)

```
. xtgls ROE IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 8 Time periods = 13
 Wald chi2(7) = 97.18
Log likelihood = -98.46479 Prob > chi2 = 0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	.0002766	.0003648	0.76	0.448	-.0004383	.0009916
ARP	-.003198	.0005887	-5.43	0.000	-.0043518	-.0020442
APP	.0006403	.0002378	2.69	0.007	.0001742	.0011063
ccc	.0007418	.000233	3.18	0.001	.000285	.0011985
DSIZE	.4666131	.1118498	4.17	0.000	.2473914	.6858347
GROWTH	.2504875	.1002254	2.50	0.012	.0540492	.4469257
LEV	-.3270136	.1021719	-3.20	0.001	-.5272668	-.1267604
_cons	.3259225	.0713026	4.57	0.000	.186172	.4656729

Source: Study Data (2016)

Table A.15: Effect of Short-Term Financing Decisions on CR (Second Step)

```
. xtgls CR IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 8 Time periods = 13
Wald chi2(7) = 256.61
Log likelihood = 223.0926 Prob > chi2 = 0.0000

CR	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	-.000909	.0001409	-6.45	0.000	-.0011851	-.0006329
ARP	-.0012822	.0002274	-5.64	0.000	-.0017278	-.0008366
APP	.0008743	.0000918	9.52	0.000	.0006943	.0010543
ccc	.0000745	.00009	0.83	0.408	-.0001019	.0002509
DSIZE	.0720687	.0431984	1.67	0.095	-.0125987	.156736
GROWTH	-.0040951	.0387089	-0.11	0.916	-.0799631	.0717729
LEV	-.4435851	.0394606	-11.24	0.000	-.5209265	-.3662437
_cons	.3268337	.0275383	11.87	0.000	.2728595	.3808078

Source: Study Data (2016)**Table A.16: Effect of Short-Term Financing Decisions and Cash Holding on ROE (Third and Fourth Steps)**

```
. xtgls ROE CR IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 9 Time periods = 13
Wald chi2(8) = 97.23
Log likelihood = -98.44635 Prob > chi2 = 0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CR	-.0270474	.1408268	-0.19	0.848	-.3030629	.2489681
IHP	.000252	.0003866	0.65	0.514	-.0005056	.0010097
ARP	-.0032327	.0006157	-5.25	0.000	-.0044395	-.0020259
APP	.0006639	.0002678	2.48	0.013	.0001391	.0011887
ccc	.0007438	.0002332	3.19	0.001	.0002866	.0012009
DSIZE	.4685624	.1123033	4.17	0.000	.248452	.6886727
GROWTH	.2503767	.1002216	2.50	0.012	.0539459	.4468075
LEV	-.3390114	.119751	-2.83	0.005	-.573719	-.1043038
_cons	.3347625	.0848645	3.94	0.000	.1684312	.5010938

Source: Study Data (2016)

Appendix X: Mediating Effect of Cash Holding on the Relationship between Short-Term Financing Decisions and TQ

Table A.17: Effect of Short-Term Financing Decisions on TQ (First Step)

```
. xtglm TQ IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 8 Time periods = 13
Wald chi2(7) = 147.16
Log likelihood = -445.8581 Prob > chi2 = 0.0000

TQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	.0008635	.0010195	0.85	0.397	-.0011347	.0028618
ARP	-.0111736	.0016453	-6.79	0.000	-.0143983	-.0079489
APP	.0061682	.0006646	9.28	0.000	.0048656	.0074708
ccc	.0015428	.0006513	2.37	0.018	.0002663	.0028193
DSIZE	.6459203	.3126074	2.07	0.039	.0332211	1.25862
GROWTH	.3287514	.2801185	1.17	0.241	-.2202708	.8777736
LEV	.1394947	.2855586	0.49	0.625	-.42019	.6991793
_cons	1.196227	.1992825	6.00	0.000	.8056401	1.586813

Source: Study Data (2016)

Table A.18: Effect of Short-Term Financing Decisions on CR (Second Step)

```
. xtglm CR IHP ARP APP ccc DSIZE GROWTH LEV
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

Estimated covariances = 1 Number of obs = 338
Estimated autocorrelations = 0 Number of groups = 26
Estimated coefficients = 8 Time periods = 13
Wald chi2(7) = 256.61
Log likelihood = 223.0926 Prob > chi2 = 0.0000

CR	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IHP	-.000909	.0001409	-6.45	0.000	-.0011851	-.0006329
ARP	-.0012822	.0002274	-5.64	0.000	-.0017278	-.0008366
APP	.0008743	.0000918	9.52	0.000	.0006943	.0010543
ccc	.0000745	.00009	0.83	0.408	-.0001019	.0002509
DSIZE	.0720687	.0431984	1.67	0.095	-.0125987	.156736
GROWTH	-.0040951	.0387089	-0.11	0.916	-.0799631	.0717729
LEV	-.4435851	.0394606	-11.24	0.000	-.5209265	-.3662437
_cons	.3268337	.0275383	11.87	0.000	.2728595	.3808078

Source: Study Data (2016)

Table A.19: Effect of Short-Term Financing Decisions and Cash Holding on TQ (Third and Fourth Steps)

```

. xtqls TQ CR IHP ARP APP ccc DSIZE GROWTH LEV

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels:        homoskedastic
Correlation:   no autocorrelation

Estimated covariances   =      1      Number of obs   =      338
Estimated autocorrelations =      0      Number of groups =      26
Estimated coefficients   =      9      Time periods    =      13
                          = -440.8864   Wald chi2(8)    =      161.64
                          = -440.8864   Prob > chi2     =      0.0000

```

TQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CR	1.232121	.3878689	3.18	0.001	.4719116	1.99233
IHP	.0019836	.0010647	1.86	0.062	-.0001033	.0040704
ARP	-.0095937	.0016958	-5.66	0.000	-.0129175	-.00627
APP	.005091	.0007375	6.90	0.000	.0036455	.0065364
ccc	.001451	.0006424	2.26	0.024	.0001919	.0027101
DSIZE	.557123	.3093086	1.80	0.072	-.0491107	1.163357
GROWTH	.3337971	.276033	1.21	0.227	-.2072176	.8748118
LEV	.686045	.3298212	2.08	0.038	.0396075	1.332483
_cons	.793528	.233736	3.39	0.001	.335414	1.251642

Source: Study Data (2016)