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**THE EFFECTS OF WORKING CAPITAL MANAGEMENT EFFICIENCY IN LISTED
COMPANIES ON THE NAIROBI SECURITIES EXCHANGE.**

MAINA DOMINIC GACHIRA

ADMISSION NO. 051233

**A Research Thesis Submitted to the Strathmore University Business School in Partial
Fulfillment for the Degree of Master of Commerce of Strathmore University.**



May 2019

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Name: Maina Dominic Gachira

Signature.....

Date.....

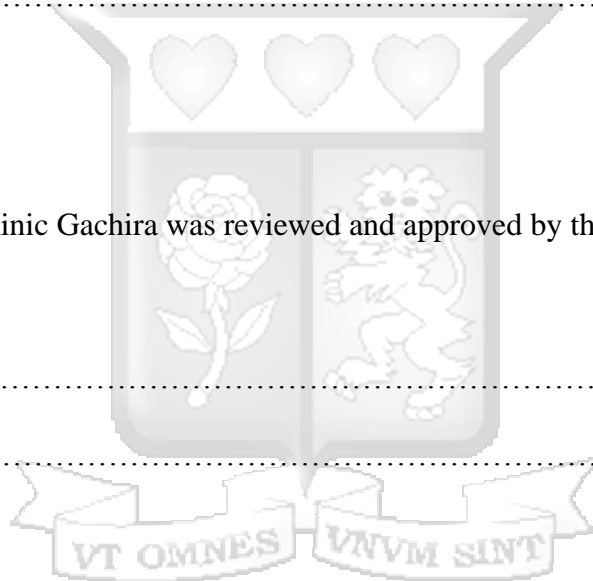
Approval

The thesis of Maina Dominic Gachira was reviewed and approved by the following:

Dr. David Mathuva

Signature.....

Date.....



ABSTRACT

Efficient working capital management is a pre-requisite for enhancement of shareholders' value and has a direct correlation with the firm's profitability and as a consequence, the shareholders' wealth maximization objective. The purpose of this study was to assess the economic consequences of working capital management efficiency in listed companies on the Nairobi Securities Exchange. The specific objectives were; to establish the influence of working capital management efficiency on a firm's future financial performance, to examine the contribution of working capital management efficiency of market performance and to analyze the managerial perspectives on the economic consequences of working capital management.

Data was collected using both primary data source (questionnaires) and secondary data sources (annual reports). The data was analyzed using descriptive statistics and OLS regression analysis. The findings showed that inventory conversion period and account payable were significant in explaining changes in profitability. However, the cash conversion cycle and account receivables days were insignificant in explaining changes in profitability. The findings showed that account receivable days, inventory conversion period, account payable and cash conversion cycle were all significant in explaining the firm's cash flow. The findings also showed account receivable days, inventory conversion period, and cash conversion cycle were all significant in explaining the firm market value. However, account payable days was insignificant in explaining firm's market value. In the stock liquidity model, the findings showed account receivable days, inventory conversion period, and cash conversion cycle were significant in explaining the stock liquidity. However, account payable days was insignificant in explaining firm's stock liquidity. The study, however, had several limitations. Annual reports for some the companies were not readily available. Managers from some companies were reluctant to fill up the questionnaires.

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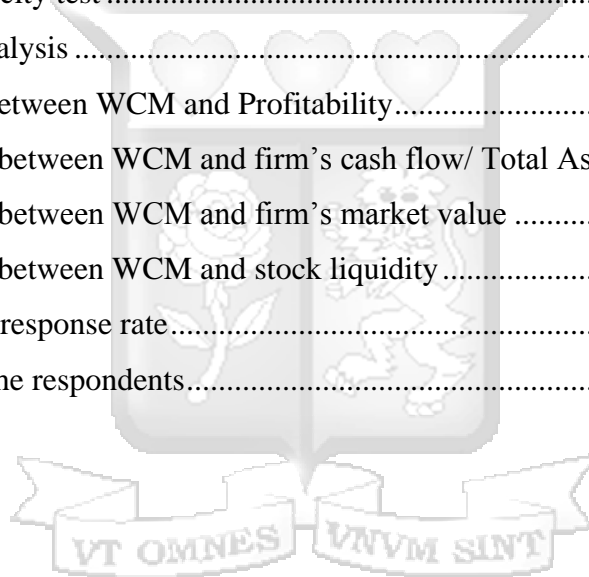
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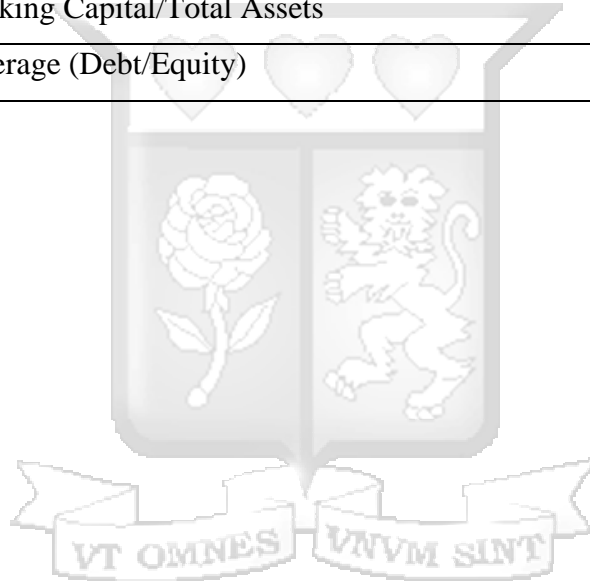
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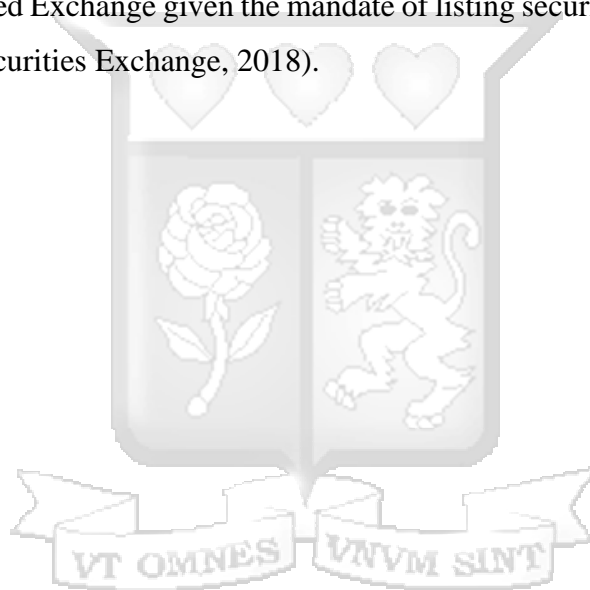
ABBREVIATIONS AND ACRONYMS

WCM	Working Capital Management
CCC	Cash Conversion Cycle
APP	Accounts Payables Period
ARP	Accounts Receivables Period
IP	Inventory Period
NSE	Nairobi Securities Exchange
WIP	Work in Progress
QR	Quick Ratio
WC/TA	Working Capital/Total Assets
LEV	Leverage (Debt/Equity)



DEFINITION OF TERMS

WCM	The management of current assets and current liabilities, and financing those current assets (Gill, Biger, & Mathur, 2010a)
CCC	The time lag between the expenditure on the purchase of raw materials and the collection of sales of finished goods (Deloof, 2003a).
APP	Represents the number of days a firm takes to pay its short term suppliers from the day of receipt of material or services on credit (Brigham & Daves, 2019).
ARR	The number of days it takes for the firm to collect cash from customers (Solano & García, 2007a).
NSE	Kenyan based Exchange given the mandate of listing securities both debt and equity (Nairobi Securities Exchange, 2018).



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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Corporate finance literature has traditionally given more emphasis towards long-term financial decisions (capital budgeting, capital structure, dividend decisions etc.) at the expense of the short-term assets' decisions (Solano & García, 2007a). Working capital management is the firm's ability to control efficiently and effectively the current assets and current liabilities in order to achieve a greater shareholders' return on their assets (Makori & Jagongo, 2013).

Working capital management is crucial for firm's survival because of its significant impact on profitability risk and value (Smith, 1980). Firms can maximize their value by knowing their optimal working capital and having the working capital investment at that optimal (Deloof, 2003b). Efficient working capital management is a pre-requisite for enhancement of shareholders' value (Saravan An, Narayan Asamy, Skrikanth, & Shankarshaw, 2017) and has a direct correlation with the firms profitability and as a consequence, the shareholders wealth maximization objective (Singhania & Mehta, 2017).

The Kenyan manufacturing sectors currently contributes to 10% of the Gross Domestic Product and the Kenya Association of Manufacturers sees the sectors contribution raising to 15% by 2020, (Kenya Association of Manufacturers, 2018) and for this to happen critical enablers must be put in place by ensuring the ease of doing business indicators are put into consideration including ease of access to finance, including efficiency in working capital management (Mohamed, 2015). Significant portion, more than half, of the manufacturing firms' investment is tied down working capital with (Haffey, 2018).

In the recent past five years (2012-2017), there has been a significant drop in the return generated by firms as a result of inefficient working capital management, all to the detriment of the investors. Globally, a drop in ROCE has been recorded in the manufacturing sectors for the period 2012 – 2016 from 8% to 5% (Haffey, 2018; Hooker & Windaus, 2018). While working capital management is important is to all firm size operating in economy, it is of particular importance to the firms operating in emerging and developing markets (where the Kenya economy lies), (Abuzayed, 2012).

Working capital management is an important concept of corporate finance to firm due to its impacts on the firm's liquidity and profitability (Martínez-Solano & García-Teruel, 2006; Raheman & Nasr, 2007a). A case in point, a study done Spain found that the current assets investment constitutes 69% of small and medium size firms assets while the current liabilities accounts for 52% of total liabilities (Solano & García, 2007a; Gill et al., 2010).

In recent years (2012-2017) companies generally has been performing dismally because of the inefficiency in managing their working capital, when compared to the preceding years, (Kortman, et al., 2018) especially among the car manufacturers in their 2018 study across the world where a total of £215m was tied up on the balance sheets.

Cash tied up among firms have an impact on the firms' external borrowing with the higher levels inefficiency leading to more borrowing as found by, (Kortman & Wicks, 2017; Hooker & Windaus, 2018). In a study done by (PWC, 2017) among Nordic firms, if they were more efficient, a total of £24bn worth of cash would have been released limiting the need for more borrowing. A similar study done by the same authors, concluded that the firms in the global market would have been able to release €1.2 trillion; a 48% capital investment growth.

1.2 Statement of the Problem

In the recent past a number of firms listed at the NSE have had their shares delisted from trading due to their poor performance and corporate governance challenges; and firms struggling with negative working capital, making it hard for them to honor maturing obligations (Anyanzwa, 2019). Some of these firms include but not limited to; Uchumi Supermarkets, Athi River Mining, Everyday East Africa, Kenya Power, National bank and Transcentury to mention a few of them. The capital Market Authority has set-up a recovery board for some of those facing liquidity issues and insolvency issues due to working capital mismanagement (Anyanzwa, 2019; Anyanzwa, 2018).

The end result of the working capital mismanagement as seen above could be eventual firm's delisting from the stock exchange putting the investors' wealth at huge risk and long-term effects of stock market depression if effective strategies to address the issues are not swiftly taken (Anyanzwa, 2018; (Anyanzwa, 2019). Investor's confidence is also an issue that could result from such mismanagement.

Working capital management has to be part of the firm's strategic and operational process (Okumu, 2010) for the firm to survive in a turbulent business environment. There have been foreclosures of firms in Kenya due to inefficient working capital management. In a recent report

published by (State Department for Trade, 2017), it concluded that more often than not firm's take too long to pay their suppliers forcing some out of business, with an average payables period of five to seven months.

Working capital management, as a corporate finance area has not received the attention it deserves, (Raheman & Nasr, 2007b), it is the survival means of firms due to its impact on firm's profitability and as a consequence value (Smith, 1980) and as such it deserves more attention than what it is currently receiving.

Past researches done on working capital management have given a higher concentration on the effects of working capital management on firm's profitability and liquidity (Afrifa, 2016; Mathuva, 2010; Lakech, 2017; Walter et al., 2014; Pais & Gama, 2015; Singhanian & Mehta, 2017; Abdulazeez, et al., 2018; Narwal & Jindal, 2018; Pandey & Sabamaithily, 2016; Estifanos, 2017; Sarwat et al., 2016; Rizki et al., 2017; Райков, 2017; Hyz, Kalantonis, & Stavroulakis, 2018; Cristian & Raisa, 2017; Şamiloğlu & Akgün, 2016; Alavinasab & Davoudi, 2013) and ignored the influence that the working capital should be assessed against, the value created to the shareholders, (Akram et al., 2016; Saravan An et al., 2017; Abuzayed, 2012; Wasiuzzaman, 2015). The use of firm's value as a performance measure is a better assessment point since it is in line with the shareholder's long term objectives as opposed to the use of profitability, a short term goal, (Le, 2019).

The researchers on working capital investment influence on value creation have had quite inconsistent findings, with some finding positive correlation between working capital investment and the firm's value, other studies establishes negative correlation while other no correlation at all. This study attempts to address this inconsistency in the case of the Kenyan market, manufacturing listed firms. The choice of non-financial firms was informed by the different definitions of working capital adopted by the insurance and financial institutions, commercial and services and industrial and allied, (Deloof, 2003b).

1.3 Research Objectives

1.3.1 General Objective

The overarching objective of the study was to investigate the economic consequences associated with working capital management efficiency in listed manufacturing firms on the NSE over the period 2007 to 2017.

1.3.2 Specific Objectives

The study sought to address the following specific objectives:

1. To establish the influence of working capital management efficiency on a firm's future financial performance.
2. To examine the contribution of working capital management efficiency of market performance.
3. To analyze the managerial perspectives on the economic consequences of working capital management.

1.4 Research Questions

The research was carried out to provide answers to the following questions.

1. What is the influence of working capital management efficiency on a firm's future performance?
2. What is the contribution of working capital management efficiency on a firm's market performance?
3. What are the managerial perspectives on the economic consequences of working capital management?

1.5 Scope of the Study

The researcher used the manufacturing firms listed at the NSE due to their unique working capital characteristics of firms in the other categorization. Financial statements for these companies were used in the research as well as market trading share prices data which the researcher used to obtain the financial data from the Nairobi Securities Exchange.

The research was done in Kenya, the country acted as the representative of developing countries in Africa continent. The study was carried out through the analysis of the financial data and data obtained from the questionnaires issued to the finance controller and finance managers of the listed companies at the NSE.

1.6 Significance of the Study

1.6.1 To investors:

The research clearly highlights the relationship that exists between the working capital management and the market returns of the listed firms in the NSE and thus investors are able to make better investment decisions. Investors will be able to judge the properly managed firms which the market has incorrectly priced, over/underpriced by observing their working capital characteristics.

1.6.2 To companies:

This information will help companies to align their working capital management (operational decisions) to their ultimate goal; shareholders' wealth maximization and in so doing determine the optimal working capital strategies they can adopt.

1.6.3 To researchers and academicians:

The researcher also hopes to contribute to the already existing empirical studies on the area and advance towards working capital theories in the area of corporate finance especially in the developing economies, the case of Kenya.

1.6.4 To policymakers:

The researcher also hopes that the research outcomes will guide management and policymakers in the market like the Capital Market Authority, in designing policies that listed firms at the NSE can adopt.

1.7 Organization of the Proposal

The research comprised of five chapters, with this chapter inclusive. Chapter two, three, four and five were designed in such a way that they answer the research objectives already mentioned in chapter one. Chapter Two dealt with the literature review on the subject matter discussed by prior authors and hypothesis formulation. Chapter three dealt with the research methodology and methods that the researcher intends to use in the research. Chapter four dealt with data analysis as well as interpretations. Data was obtained from manager and accountants of the firms in the sample. Chapter five discussed the general discussions, conclusions, and recommendations that the research arrived at.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter is divided into sub-sections. The first section deals with the management role in working capital. The second section deals with the theoretical framework on working capital and the formulation of testable hypothesis. The third section discusses the independent variables and dummy variables and how their influence dependent variable (firm's value). This is followed by the development of a conceptual framework. The chapter thus attempts to answer the research questions highlighted in chapter one.

2.2 Working capital management and economic consequences

Working capital is defined as “the management of current assets and current liabilities, and financing these current assets”, (Gill et al., 2010b). Firms can choose between different types of strategies for working capital management: a strategy that minimizes working capital investment or they can adopt a strategy meant to maximize sales, (Solano & García, 2007b). Working capital is a very sensitive area in the field of financial management (Raheman & Nasr, 2007a). It is an important corporate finance area due to direct effects on the firm's profitability and liquidity ((Abdulazeez et al., 2018); (D. M. Mathuva, 2010); Raheman & Nasr, 2007a).

Working capital is an indicator of a firm financial health (Padachi, 2006a). Its importance is hinged on the facts that ; first, working capital represents a significant firm's investment (more than half) compared to the long-term assets, the case of manufacturing firms (Haffey, 2018; Olayinka, 2012). Secondly, it has a direct impact on the liquidity and profitability of the firm and consequently its net worth (Olayinka, 2012; Smith, 1980; Wasiuzzaman, 2015a).

Working capital is normally viewed as a safety cushion by short-term providers of finance. It is thus looked on positively the more the investment the company has made towards the working capital, (Eljelly, 2004). However, it is worth noting that this can also have detrimental effects the firms profitability and by implication its value (Sanger, 2001).

Working capital is normally considered as the amount the firms will have to invest towards its current assets; receivable, cash, inventory and short-term marketable securities less the short-term finances receives from its suppliers, both credit (short-term loans and overdraft) and material suppliers (mainly trade payables), (D. M. Mathuva, 2010). Working capital components are mainly inventory, accounts receivables and trade payables (Padachi, 2006a;

Afrifa, 2016). Net working capital investment is commonly defined as the excess of current assets over current liabilities (Corporate Finance Institute, 2018).

The common measures of working capital investment are the gross working capital and net working capital (Eljelly, 2004). The gross working capital is understood as the total investment made towards current assets (Eljelly, 2004; Mathuva, 2010; Wasiuzzaman, 2015a). Net working capital, the more prominent measure, is obtained by the netting of current liabilities from current assets

Efficiency in managing working capital is paramount. It requires the firm to plan and control its current assets and current liabilities in a manner that reduces the risk of a firm being unable to meet its maturing obligations and to avoid tying down its investment in non-productive investments (Eljelly, 2004; Sanger, 2001). The section below discusses the individual components of working capital and their potential impacts on the firm's value as derived from the empirical studies. It also discusses the hypothesis development.

Inventories investment is made up of the raw material, WIP (work-in-progress) and the finished goods. Inventories are the raw materials, work-in-progress or the finished goods investments that are either currently awaiting conversion process or to be sold (Olayinka, 2012). A firm has to assess what levels of investment in the inventory they must make to avoid under-stocking or over-stocking situations (Padachi, 2006a; Brealey, Myers, & Allen, 2011). Inventory management will involve the control and planning of these assets that will be later sold to customers in the normal course of business (EduPristine, 2018). Inventory investment comprises a substantial portion of the firm's total assets (just like receivables), (D. M. Mathuva, 2010) and thus the need for a tighter scrutiny of their impact on firm's value (Wasiuzzaman, 2015a).

Cash and cash equivalents are the working capital component that represents the most liquid asset base of a firm. There is a need for efficient working capital as the firm may run out of cash flow they need to pay their day-to-day expenses including paying suppliers and employees (Afrifa, 2016). A steady flow of cash in the business is a paramount condition for firm's survival (Tran, Abbott, & Jin Yap, 2017).

Receivables investment normally arises when a firm extends goods on credit to its customers for a later repayment (Padachi, 2006a; Mathuva, 2010). The firm's receivables investment is normally influenced by the credit policy it adopts with regard to credit extension to customers. The more generous the firm is towards its customers the higher the investment it will make in

the account receivable and vice-versa (Olayinka, 2012). However, firms that have a higher account receivables investment have a heavy managerial task of monitoring it to ensure that the opportunity cost of giving out trade credit does not exceed the benefits of increased profit from additional sales.

Account payables are the suppliers whose invoices, for the amount due, have been processed by remaining unpaid by the end of a certain period (Falope & Ajilore, 2009a). Trade payables represent a significant proportion of a firm's current liabilities, mostly comprising 40% of it (Brigham & Daves, 2019). Trade credit consists of free trade credit and costly credit. The costly trade credit has been assessed across the other credit sources due to its cost implication to the firm. The free credit should always be used if it is available (Wasiuzzaman, 2015a).

Businesses can commonly adopt two different working capital policies/strategies: conservative policy or an aggressive policy. An aggressive policy results in a reduction in the firm's investment towards inventory and accounts receivables. This will result to increase in profitability due to a reduction in the inventory holding costs; warehousing costs, insurance, and loss through spillages (Afrifa, 2016). However, this WCM policy may result to decrease in companies' profits and value due to the decrease in sales as compare want do reduce accounts receivables by selling fewer credit customers. A conservative policy may also be adopted by firms; it results in an increase in the WCM investment made. This is achieved by businesses attempting to increase sales through higher investment towards inventory and receivables with the aim of increase profits (Solano & García, 2007b). An increase in inventory means fewer production disruptions and lower price fluctuations (Deloof, 2003b; Solano & García, 2007b). Account receivables will also tend to increase due to firm's making credit sales to customers for longer periods of time. (Deloof, 2003b).

2.3 Theories on economic consequences of WCM efficiency

This section discusses the different theories that can be adopted in explaining the influence of working capital on the firm's value, performance, and stock liquidity. There are a number of theories that have been used in the past in explaining the economic consequences of working capital; resource-based theory, agency theory, transaction cost theory, signaling theory, and the efficient market hypothesis. The researcher used the agency theory and risk-return trade-off theory in this study due to their high frequency of usage by the past empirical studies on the WCM.

2.3.1 Agency/Stakeholder Theory

The theory contends that there exists two persons in a business relationship, i.e., the principal and an agent. The principal engages the agent to perform some tasks which involve the delegation of some decision making authority on the part of the agent (Aminu & Zainudin, 2015; Jensen & Meckling, 1976). The agent is meant to make decisions that benefits the principal (even though this doesn't always happen), Ross (1973).

Jensen and Meckling (1976) were the main propagators of the agency theory and it has been widely accepted in the world of finance, economics, and accounting due to its versatility in adding; the agency problems that commonly exists between the main stakeholder (the principal) in a firm, shareholder, and the main agent (the management). It also does allows the incorporation the potential agency solutions and associated incentives (Aminu & Zainudin, 2015). When making investment decisions firms normally consider the possible returns that investment will yield to the shareholders'; otherwise an agency problem will the most likely outcome (Bates, Kahle, & Stulz, 2009). If the receivables investment tends to yield higher returns for the shareholders, then the management will tend to invest in that early.

Pinkowitz, Stulz, and Williamson (2006), in their study found that there is a lower value created to the shareholders from their investment for those countries deemed to have lower investors' protection. If corporate governance structures work well then the controlling investors will aim to increase shareholders value to the benefits of shareholders. As a result the firm's value is maximized when the existing corporate governance structures are working effectively (Acemoglu, Johnson, Robinson, & Thaicharoen, 2003).

Stiglitz and Weiss (1981), shows that the existence of information asymmetry in the loan market makes it hard for both the lenders and the borrowers. The firms thus have to manage their existing internal capital sources well; will mean that the working capital management will have to aim to be at all time at their optimal.

The relevance of the agency theory towards working capital management can be assessed from the finance manager perspective. The finance manager is the agent who is meant to manage the receivables, cash, inventory and all the other short-term investments as well controlling the current liabilities especially the short-term trade credit.

The shareholders being the major stakeholder invest (by giving up their capital to the firm) in above short-term investment with the hope of making positive returns from them. The employees (being agents) of the company are also employed to provide a service to the firm;

their interest is meant to be that value creation for the company's benefits. Customers provide the source of revenue to the firm and have a minimum expectation of being provided with good quality products and services as well as a fair price for them. Suppliers, being material and services providers, expect to be paid for their service provided to the firm.

2.3.2 Risk-Return Trade-off Theory

Every investment decision is pegged on the concept that there will be an analysis of the return the asset generates as well as the risk that accompanies these returns, (Brealey et al., 2011). Trade-off theory dictates that value-maximizing firms tend to consider the marginal benefits and marginal costs that are associated with different financial options available (Eckbo, 2011; Tong & Green, 2005).

There are two conflicting attitudes that are normally exhibited; risk-seeking and risk-aversion (Aminu & Zainudin, 2015); with the main focus of the risk seekers is to the maximization of gain making opportunities whereas for a risk-averse person having an over-estimation of the potential losses (risk) and an under-estimation of the gain (Teigen et al.,1999).

In the receivables investment, before the firm can extend sales to their customers on credit they will (or should) have a creditworthiness assessment criteria to reduce the risk (mostly of bad debts) they will be exposing themselves to, (Wasiuzzaman, 2015a). If a customer is too risky, then the firm will reduce the credit extension or avoid making any credit sale to that customer. If the risk exposure is limited, for example, customers who pay on time and have lower bad debt experiences, the firm will make a significantly higher levels of credit sales due to the potential higher earnings/returns from such a customer (Solano & García, 2007a; Abuzayed, 2012; Aminu & Zainudin, 2015; Salman Sarwat, Danish Iqbal, Durrani, Shaikh, & Farhana Liaquat, 2016).

The same can be said of the inventory investment; before firms commit their capital to purchase inventory, they must consider the implied gain to be received from the sale of those inventories to their customers. Inventory associated costs will need to be assessed, that is, the ordering costs, holding costs and the purchase cost for each of the different inventory policy they want to adopt. The same has to be done on the gain to received, the profit to be made, the stock-out costs to be avoided as well the potential discount to be received from the suppliers (Wasiuzzaman, 2015a; Mathuva, 2010; Olayinka, 2012; Deloof, 2003b).

The suppliers of materials to the firm will normally assess their client's risk exposure before any trade credit extension. If they deem the client to be too risk then they will reduce the amount

of trade credit investment they make to such a firm, thus lower trade payable (Wasiuzzaman, 2015a). This will mostly apply for the free credit as opposed to the costly credit; this can be explained by the cost implication to the firm for the costly credit as opposed to the free credit. Firms have to compare the cost of the trade credit versus all the other available short-term credit the firm can have access to, in order for them to maximize the firm's value, (Wasiuzzaman, 2015c; Samiloglu & Demirgunes, 2008a; Berk, DeMarzo, & Harford, 2018).

In the past empirical studies, there has been a general tendency of a negative correlation between the amount of working capital investment and the shareholders' return. If a firm is a risk-seeking type then they tend to under-invest in working capital, but can very risky for the firm in terms of its liquidity/solvency. The risk-averse firms, on the other hand, will tend to over-invest in working capital and as such could hurt their profit and a result the firm's value.

2.3.3 Liquidity Preference Theory

The contends that the investors will always be attracted to those investments that there will find easy to liquidate into cash quickly (Owele, 2013; Tobin, 1958). The investors will consider the risk that will come with an investment, especially the illiquidity risk. They will demand a higher premium if an investment is illiquid and less illiquidity premiums if they deem the investment to be less illiquid (Tobin, 1958). The theory was further propagated by (Keynes, 1937) where he stated that there exists an inverse relationship between the demand of cash and the level of interest in the economy (Tobin, 1958). Keynes (1937), argued that the demand of cash is influenced by three factors; the speculative needs of the company, the firm's transactional needs and the cash precaution needs.

Firms when making the working capital decisions will consider the extent of their investment being illiquid. If the investment they make is deemed illiquid, the more premium they expect to receive from such an investment. The cash held at hand by the firm will generally yield very little and firms will look for an alternative way to investment any excess cash (Tobin, 1958) to earn interest from them. Receivables is an illiquid investment. Firms will be quite thorough when making decisions as to who to extend the credit to (Owele, 2013). There is more risk in credit extension and thus more return on receivables investment made by the firms. Inventory investment is the most illiquid (Wasiuzzaman, 2015b) among the different working capital and it thus demands more attention the firms working capital management decisions. It should command more premiums. A thorough analysis of risk-return done before making the purchase

decision. The use of economic order quantity, as an operational tool, should be implemented, (Chang & Dye, 1999).

2.4 Empirical studies on economic consequences of WCM efficiency

2.4.1 The Cash Conversion Cycle, measure of WCM Efficiency

The cash conversion cycle (CCC) is used as the comprehensive measure of working capital management efficiency measure (Raheman & Nasr, 2007a) especially towards the cash management (Gentry, Vaidyanathan, & Lee, 1990). It is the time span between the expenditure for the purchase of raw material to the time cash is received from the sale of the goods (Gill et al., 2010). It can also be viewed as the time it takes to convert cash into cash again from the time the inventory is purchased to the time it is sold and cash received from the customers (Anser & Malik, 2013).

Cash conversion cycle is an additive function (Gentry et al., 1990). It is often measured by estimating the inventory period (IP), the receivables period (ACP) less the account payables period (APP), (Deloof, 2003; Wasiuzzaman, 2015a; Baños-Caballero et al., 2014; Napompech, 2012; Aminu & Zainudin, 2015; Martínez-Solano & García-Teruel, 2006; McLaney, 2003). It focusses on the length of time between the acquisition of raw materials and other necessary inputs to the time of receipt of cash from the customers upon sale being made (Arnold, 2013). The shorter the cycle the fewer are the firm's resources that are being tied up.

Cash management of a firm can be measured using the conversion cycle, as its proxy ((Lazaridis & Tryfonidis, 2006), (Deloof, 2003), (Padachi, 2006), (Mathuva, 2010), (Gill et al., 2010), (Martínez- Solano & Juan García- Teruel, 2007)). It is commonly used as a measure of the firm's working capital management efficiency, in terms of payment of bills, collection of payments from customers, and inventory sales ((Samiloglu & Demirgunes, 2008), (Anser & Malik, 2013)) and a better measure liquidity position when compared to the traditional liquidity measures ((Uyar, 2009).

As shorter cash conversion cycle means the firm is received its cash early which means higher present value of cash flow and by implication a higher firms value (Gentry et al., 1990). A longer cash conversion cycle may mean a higher firms profitability but this may not necessary create value to the firm due to the extra cost that comes with working capital investment especially the inventory and receivables ((Deloof, 2003), (Raheman & Nasr, 2007b)).

Cash conversion cycle = Average Collection Period (ACP) + Inventory Conversion Period (ICP) - Average Payment Period (APP).

The findings from the empirical studies have been divergent views of cash conversion cycle effects on firm's value; some concluded that there exists a negative correlation between the CCC and the firm's value ((Raheman & Nasr, 2007a), (Deloof, 2003), (Öhman & Yazdanfar, 2014), (Tripathi & Ahamed, 2017)). (Oseifuah & Gyekye, 2017), in their study among the non-financial firms listed in the JSE (2003-2012), concluded that firms can enhance their shareholders value by reducing their CCC since this results to increased profitability.

(Wang, 2002), found that for firms to create value for their shareholders they need to pursue an aggressive working capital policy, that is, reducing their working capital cycle to an optimal level.

2.4.2 WCM and firm financial performance (ROA)

Return on Assets is commonly used to analyze the impact of the efficiency of managing working capital. It shows how the firm's management efficiency in converting the firm's investment (assets) into earnings (profits) for the stakeholders, (Falope & Ajilore, 2009; Heikal, Khaddafi, & Ummah, 2014; Simpson & Kohers, 2002). It is defined as the ratio of earnings before interest and tax (EBIT) to total assets (García- Teruel & Martínez- Solano, 2007). It is the most often used measure of firm's financial performance (profitability), (Simpson & Kohers, 2002) together with ROE (Return on Equity), (Falope & Ajilore, 2009a).

However, there not been a wholesome agreement on how to calculate this profitability measure. the most common understanding so far is that the ROA is the ratio of earnings before interest and tax to the total assets, (Falope & Ajilore, 2009; Heikal et al., 2014). However, (Petersen & Schoeman, 2008) defined it as net profit after tax to total assets and concluded that one can easily check how efficiently a firm (bank) manager has been utilizing the resources at his disposal. (Afza and Nazir, 2007) understood it as the ratio of net earnings after taxes to total book value of assets.

García- Teruel and Martínez- Solano (2007), found that a significant negative correlation between the ROA and cash conversion cycle meaning that paying suppliers on time, timely credit collection from the customers and reducing inventory stock results to a higher firm's profitability i.e. efficient management of working capital results on firm's profitability.

Samiloglu and Demirgunes (2008b), in their study of the effects of working capital management on firm profitability in Turkey used return on assets as the dependent variables and the accounts payables period, inventory period, account receivables collection period, cash conversion cycle as the independent variables and firm size, debt and fixed financial assets as

the controlling variables. (Shoham, 1998) and (Heikal et al., 2014), also used return on assets, return on investment and expected profit ratio as the measure of profitability of the firms. A similar model was used by (García- Teruel & Martínez- Solano, 2007) with the addition of sales growth as a controlling variable.

Falope & Ajilore (2009) in their study of working capital management and profitability on Nigeria used a similar model also with ROA as the dependent variable and being working capital variables; inventory days, receivables day, payable days and cash conversion cycle. (Padachi, 2006b), in his research on the working capital management and its impact on firm's performance in Malaysia concludes that the use ROA is by far better performance measurement since it relates the profitability of the firm to the assets base.

Most, if not all, businesses want to maximize their sales and as a consequence of that maximize their profit (Raheman & Nasr, 2007a; Solano & García, 2007a). One of the main ways of doing so is by selling their merchandise on credit to their customers. Receivables investment normally arises when a firm extends goods on credit to its customers for a later repayment ((Padachi, 2006a; Mathuva, 2010).

The firm's receivables investment is normally influenced by the credit policy it adopts with regard to credit extension to customers. The more generous the firms towards its customers the higher the investment it will make in the account receivable and vice-versa (Olayinka, 2012). However, firms that have a higher account receivables investment have a heavy managerial task of monitoring it to ensure that the opportunity cost of giving out trade credit does not exceed the benefits of increased profit from additional sales. Opportunity cost arises as a result of possible bad debts that the firm was incurred as a result of increased sales and the money extended to customers through such credits cannot be invested somewhere else (Mathuva, 2010; Райков, 2017; Deloof, 2003b).

One of the measures of assessing the efficiency in managing account receivable is the use of account receivable days, (Mathuva, 2010; Solano & García, 2007a; Raheman & Nasr, 2007a; Deloof, 2003b). Average collection period indicates the number of days it takes for the firm to collect cash from customers. The higher the value the higher the receivable investment made by the firm (Solano & García, 2007a).

Inventories are the raw materials, work-in-progress or the finished goods investments that are either currently awaiting conversion process or to be sold (Olayinka, 2012). Inventory investment comprises a substantial portion of the firm's total assets (just like receivables), (D.

M. Mathuva, 2010) and thus the need for a tighter scrutiny of their impact on firm's value (Wasiuzzaman, 2015a).

Holding inventory helps managers minimize the associated costs of stock-outs and to be able to deal with seasonal demand fluctuations in response to the sales demand, (Wasiuzzaman, 2015a). Efficient inventory management dictates that there should be enough inventory for a smooth running of the firm's operations but at the same time considering the holding costs and ordering cost associated with a given inventory ordering policy, (Brigham & Daves, 2019).

Inventory conversion period (ICP), commonly referred to as inventory period (IP), is the time taken to convert the inventory investment into an actual sale (Solano & García, 2007a; Deloof, 2003b; Mathuva, 2010; Raheman & Nasr, 2007a). The inventory conversion period is used as proxy for the investment made on inventory, that is, the longer the ICP the higher the inventory investment made the firm, and the shorter the ICP the lower the inventory investment made, (Vahid, Elham, Mohsen, & Mohammadreza, 2012; (Falope & Ajilore, 2009a). Inventory management can be measured using an inventory conversion period, which is the number of days that a company take to convert inventory into cash.

Most of the previous research found out that a negative correlation between inventory conversion period, profitability and firm's value, (Deloof, 2003b; (Falope & Ajilore, 2009a); Deloof, 2003; Wasiuzzaman, 2015a; Raheman & Nasr, 2007a; Pais & Gama, 2015; Samiloglu & Demirgunes, 2008a) that is, firms' can create value to their shareholders by reducing the investment they make on the inventory. However, (D. M. Mathuva, 2010), found a significant positive relationship between inventory period and the firm's profitability.

Account payables are the suppliers whose invoices, for the amount due, have been processed by remaining unpaid by the end of a certain period (Falope & Ajilore, 2009a). Trade payables represent a significant proportion of a firm's current liabilities, mostly comprising 40% of it (Brigham & Daves, 2019).

As per the financing advantage theory, suppliers have an advantage to the lenders in discerning the client's creditworthiness as well as in following up and in the repayment. This can be explained by the suppliers better access to clients information and also in the case of defaulting he/she has the power of withholding future supplies (Wasiuzzaman, 2015a). Trade credit consists of free trade credit and costly credit. The costly trade credit has to be assessed across the other credit sources due to its cost implication to the firm. The free credit should always be used if it is available (Wasiuzzaman, 2015a). Napompech (2012), in his study of the effects of

WCM on the profitability of Thai listed firms, found that negative significant relationship firm's profitability, as measured using gross profit margin, and payables period. The account payable can be used as the proxy for the account payable investment made by a firm. The account payable period (APP) represents the number of days a firm takes to pay its short term suppliers from the day of receipt of material or services on credit (Brigham & Daves, 2019).

The cash conversion cycle (CCC) is used as the comprehensive measure of working capital management efficiency measure (Raheman & Nasr, 2007a) especially towards the cash management (Gentry, Vaidyanathan, & Lee, 1990). It is the time span between the expenditure for the purchase of raw material to the time cash is received from the sale of the goods (Gill et al., 2010b). It can also be viewed as the time it takes to convert cash into cash again from the time the inventory is purchased to the time it is sold and cash received from the customers (Anser & Malik, 2013).

Cash conversion cycle is an additive function (Gentry et al., 1990). It is often measured by estimating the inventory period (IP), the receivables period (ACP) less the account payables period (APP), (Deloof, 2003b; Wasiuzzaman, 2015a; Solano & García, 2007a), Napompech, 2012; Aminu & Zainudin, 2015; Martínez-Solano & García-Teruel, 2006; McLaney, 2003). It focusses on the length of time between the acquisition of raw materials and other necessary inputs to the time of receipt of cash from the customers upon a sale being made (Arnold, 2013). The shorter the cycle the fewer are the firm's resources that are being tied up.

Cash management of a firm can be measured using the conversion cycle, as its proxy (Lazaridis & Tryfonidis, 2006a); Deloof, 2003b; Padachi, 2006a; (D. M. Mathuva, 2010); Gill et al., 2010b; Solano & García, 2007a). It is commonly used as a measure of the firm's working capital management efficiency, in terms of payment of bills, collection of payments from customers, and inventory sales (Samiloglu & Demirgunes, 2008a; Anser & Malik, 2013) and a better measure liquidity position, when compared to the traditional liquidity measures (Uyar, 2009).

As shorter cash conversion cycle means the firm is received its cash early which means a higher present value of cash flow and by implication a higher firm's value (Gentry et al., 1990). A longer cash conversion cycle may mean a higher firm's profitability but this may not necessarily create value to the firm due to the extra cost that comes with working capital investment especially the inventory and receivables (Deloof, 2003b; Raheman & Nasr, 2007b).

In line with the past empirical studies done on the WCM and the research objectives, the following hypothesis can be formulated.

H1= A significant positive relationship exists between working capital management efficiency and firm financial performance.

2.4.3 WCM and Cash Flows

The firm's liquidity (a going concern) position is not pegged on its asset's liquidation value but rather on its ability to generate cash from its daily operations (Raheman & Nasr, 2007b). Liquidity is a function of current assets and current liabilities and determines the working capital policies that the firm will adopt as well indicating the firm's capability of generating cash for its day-to-day use (Samiloglu & Demirgunes, 2008b).

It is good for businesses to consider ongoing cash liquidity measures in working capital management. Ongoing liquidity measures refer to the use of inflows and outflows of cash through the firm product acquisition, production, sales to customers and cash collection from them and payments to suppliers (Samiloglu & Demirgunes, 2008b). Large inventory balances may or may not be good for firms; excessive inventory tends to reduce the firm's cash position (liquidity) if it not able to convert them into a sale quickly and efficiently. Underinvestment may, however, lead to stock out costs and reduced sales (Gill et al., 2010a)

Trade credit to customers has the ultimate purpose of increasing sales (profitability). However, if the sales are made to credit worthless customers' losses may be result and cash lost along the way. Also, excessive delaying collecting cash from the customers may lead to cash flow problems not forgetting the firm's chance of surviving (Padachi, 2006b; Gill et al., 2010b). The frequency of converting receivables into cash matters a lot in working capital management (Falope & Ajilore, 2009a). Businesses can be able to improve their cash flows by reducing their account receivables (Ganesan, 2007).

Trade payables which represent the amounts owed to the suppliers of mainly raw materials and labor can determine the firm's cash flow status. Delaying paying suppliers can be good in that the firm's is postponing a cash outflow, however, it is also worthwhile considering the trust relationship may be destroyed between the firm and its suppliers (Raheman & Nasr, 2007b; Gill et al., 2010b).

The traditional means of liquidity assessment normally concentrates on the relationship between current assets investment in comparison to current liabilities, (Raheman & Nasr,

2007b). The liquidity measure, cash flows from operations to total assets have largely been ignored.

Deloof (2003b), discusses that most of the firms under his study had too much cash tied on the working capital. Cash tied up among firms have an impact on firms' external borrowing with the higher levels inefficiency leading to more borrowing as found by, (Kortman & Wicks, 2017) and (Hooker & Windaus, 2018). In a study done by (PWC, 2017) among Nordic firms, if they were more efficient, a total of £24bn worth of cash would have been released limiting the need for more borrowing. A similar study done by the same authors concluded that the firms in the global market would have been able to release €1.2 trillion; a 48% capital investment growth.

Padachi (2006b) in his study among Mauritian small manufacturing firms concluded that the success of businesses lies in them being able to generate cash receipts in excess of the disbursements that they are making. Cash flows problems of most firms are as a result of poor financial management and poor decisions making on their working capital. The firm's profitability is a key factor that is used by the investor when assessing the firm's financial position and its ability to able to generate cash flows from its operations is of higher significance for firm's survival (Padachi, 2006b). Managing cash flows and cash conversion cycle is a critical component of overall cash management efficiency.

García- Teruel & Martínez- Solano (2007), in their study on the effects of working capital management on SME profitability in Spain found that the firm's cash conversion cycle aims at getting cash inflows as quickly as possible while reducing the associated cash flows. The longer the cash conversion cycle the more time the firm is taking between cash outlay and cash recovery. The cash conversion cycle is a time interval between cash outlays and cash inflows that arise during the production cycle; and as such the shorter the cycle the better off for the firm in terms of cash management, liquidity management (Falope & Ajilore, 2009a).

The amount of cash the firms are able to generate is volatile and there is a need for these firms to make good decisions regarding how much they will invest towards cash and cash equivalents, inventory (raw material, work-in-progress and finished goods) and the receivables as well as their current liabilities, trade payables especially (Padachi, 2006b).

The following hypothesis can be developed;

H2= A significant negative relationship exists between working capital management efficiency and on the firm's cash flows.

2.4.4 WCM and firm value

Past empirical studies on the influence of receivables investment on firms value indicates that firms can create value for their shareholders by reducing their receivable investment ,(Deloof, 2003b; Wasiuzzaman, 2015a; Kieschnick, Laplante, & Moussawi, 2013; Raheman & Nasr, 2007a; Samiloglu & Demirgunes, 2008a).

The findings of the empirical studies suggest that a positive relationship exists between number of days of account payable and the firm's value, (Raheman & Nasr, 2007a; Wasiuzzaman, 2015c; (Falope & Ajilore, 2009a); Bauer, 2004; Pouraghajan & Emamgholipourarchi, 2012; Anna Bieniasz & Zbigniew Golaś, 2011; Mathuva, 2010). However, Soekhoe (2012) in his study of the relationship between working capital management and firm's profitability found a negative relationship between the profitability of Dutch listed firms and number of days of accounts payable. This implied that firms that wait longer to pay their bills generated less profit and less value created for the shareholders.

The findings from the empirical studies have been divergent views of cash conversion cycle effects on a firm's value; some concluded that there exists a negative correlation between the CCC and the firm's value (Raheman & Nasr, 2007a; Deloof, 2003b; Öhman & Yazdanfar, 2014; Tripathi & Ahamed, 2017). Oseifuah and Gyekye (2017), in their study among the non-financial firms listed in the JSE (2003-2012), concluded that firms can enhance their shareholders' value by reducing their CCC since this results to increased profitability. Wang (2002), found that for firms to create value for their shareholders they need to pursue an aggressive working capital policy, that is, reducing their working capital cycle to an optimal level.

Tobin's q plays a role in many financial statistics and is defined as the ratio of market value of the firm to the replacement costs of its assets (Chung & Pruitt, 1994; Megna & Klock, 1993; Financial Times, 2018). It is a very good financial tool which is commonly unused in real-world decision analysis. it is a more meaningful way to judge the comparative performances of firm's (Wolfe & Sauaia, 2003).

Afza and Nazir (2007), is there research on the impact of working capital management policy on firm's profitability among Pakistani firms between 1998-2005 used Tobin's q as the market

measure of the profitability. They understood Tobin's q as the ratio of the value of company given by the financial market to the book value of company's assets.

The estimated Tobin q value was assessed using the Roll's spread (Chung & Pruitt, 1994; Wernerfelt & Montgomery, 1988).

A high q (greater than 1) implies that the firm's stock is more expensive than its replacement costs meaning the shares are currently overvalued. A low q value of value between zero and one means the cost to replace the firm's assets is greater than what the market is valuing the firm at, undervaluation (Investopedia, 2018; Nazir & Afza, 2009).

In line with the past empirical studies done on the WCM and the research objectives, the following hypothesis can be formulated.

H3= A significant positive relationship exists between working capital management efficiency and on the firm's market performance.

2.4.5 WCM and stock liquidity

The liquidity of a stock is the relationship between the volume of trading and changes in market price, (Cooper, Groth, & Avera, 1985). High stock liquidity is a desirable characteristic that any investor should consider when making investment decisions. The management of a firm should thus consider the means available at their disposal to enhance the stock liquidity. Stock liquidity facilitates the entry and exits of block holders into a market making it easier for investors who want to buy or opt out of an investment be able to do so; value creation (Fang, Tian, & Tice, 2014).

The past empirical studies have not given the stock liquidity enough emphasis in relation to working capital investment. However, the few kinds of research on stock liquidity are more aligned to the entire corporate investments. There are some that have found a positive correlation between corporate investment on stock liquidity with an improvement on the liquidity as more corporate investments are made by the firm, (Becker- Blease & Paul, 2006; Fang et al., 2014).

The researcher used the bid-ask spread as a measure of liquidity (Sarin, Shastri, & Shastri, 1996; Kothare, 1997) assuming that the market is informationally efficient (Roll, 1984). The assumption of information efficiency means that the price changes in stock will be driven by an unanticipated information i.e. zero trading costs (Roll, 1984).

In line with the past empirical studies done on the WCM and the research objectives, the following hypothesis can be formulated.

H4= A significant negative relationship exists between working capital management efficiency and on the firm's stock liquidity.

2.5 Control variables

2.5.1 Firm's size

New borrowers in the capital markets are generally expected to face tighter financial constraints than those with longer and already tested successful track records (Gertler, 1988; Niskanen & Niskanen, 2006). In a perfect capital market, different firms both young and mature should be able to access the market quite easily at an interest rate adjusted for the risk the lenders are exposed. However, this may not be the case in reality as mature firms have had many previous financing transactions with the lenders and as such information asymmetry reduced with time compared to the young firms (Greenwald et al., 1984).

These small firms end up using more trade credit and reduce inventory investment they make which means a longer CCC (S. Fazzari & Petersen, 1993). Solano and García (2007a), however, in their study among small-medium sized firms in Spain, concluded that there exists no correlation between the CCC and the firm's size.

Nazir and Afza (2009), in their study of working capital management on profitability also used the firm's size as a control variable where they understood the size of the firm as the natural logarithm of the firm's total assets, as the value of the large assets may disturb the analysis. The researcher defined size as the natural logarithm of total assets as reported in the most recent published financial statements (Chauhan & Banerjee, 2017; García- Teruel & Martínez-Solano, 2007). However, other measures of firms that have been used include the use of the natural logarithm of sales (Raheman & Nasr, 2007b; Padachi, 2006b).

2.5.2 Leverage

Firms with higher debt ratio are expected to be paying higher interest since they are perceived to be riskier and lenders shy away from giving them capital, financially constrained (Chauhan & Banerjee, 2017). Highly geared firms tend to reduce their working capital investment to reduce the interest cost (Solano & García, 2007a). Firm's financial constraints status affects the investment choices that the firms pick, both capital investment and working capital investment decisions (S. M. Fazzari, Hubbard, Petersen, Blinder, & Poterba, 1988); with the internal finance sources (retained earnings and efficient working capital management)

preferred over the external sources, the pecking order theory (Myers, 1984; Chauhan & Banerjee, 2018).

Samiloglu and Demirgunes (2008b), in their research on the effect of working capital management on firm profitability in Turkey used leverage, as represented by the total debt to total assets, as controlling variable and the ROA as the dependent variable. They conclude that the firm's leverage position has a significant negative impact on the firm's profitability. Nazir and Afza (2009), in their study of working capital management on profitability also used the firm's financial leverage as a control variable where they understood it as the ratio of firms debt to equity ratio.

Firms that are financially constrained can be able to reduce the effects of being constrained by active and efficient management of working capital (Ding, Guariglia, & Knight, 2013). Wasiuzzaman (2015a), in his study on 192 firms in Malaysia concluded among the financially constrained firms, working capital efficiency had a significant impact on the firm's value as opposed to unconstrained firms. The researchers propose to use leverage ratio as the sum of total interest-bearing debt (both current and non-current) divided by total assets expressed as a percentage. This proposal is supported by the empirical studies done on the working capital management area; (Padachi, 2006b)

2.5.3 Sales Growth

It is calculated as the increase or decrease in the firm's annual sales measured as a percentage (Falope & Ajilore, 2009a). It represents the investment growth opportunities in a firm (Raheman, et al., 2010). It is measured using the annual percentage growth in sales, as proposed by (Raheman et al., 2010; (Falope & Ajilore, 2009a); Deloof, 2003a).

Growth in sales is associated with an increase in a firm's profitability since sales are associated with an increase in profits (Raheman et al., 2010). Deloof (2003b) concluded that the sales growth is expected to have a positive correlation with the accounting measures of profitability. (Falope & Ajilore, 2009a) used the sales growth as a controlling variable in their study of effects of working capital management on the Nigerian quoted non-financial companies for the period 1996 – 2005.

Afza and Nazir (2007), in their research on the impact of working capital management policy on firm's profitability among Pakistani firms between 1998 - 2005 used the growth as a control variable. They represented growth as the variation in the firm's annual sales within reference to the last year's sales.

Samiloglu and Demirgunes (2008b), in their research on the effect of working capital management on firm profitability in Turkey used firm growth, as represented by the growth in sales, as the controlling variable and the ROA as the dependent variable. they conclude that firm growth has a significant positive impact on the firm's profitability.

2.5.4 Economic Cycle - Gross Domestic Product

Gross domestic product is the total value of everything that the firms and the individuals (both locals and foreigners) within a given economy do produce (Amadeo, 2018). It can also be considered as the total monetary value of goods and services produced a given economy within a specified period of time, (Kenton, 2018). It is normally considered as the best way to measure the performance of a given country economy since it considers the entire economic output. It is generally made up of personal consumption expenditures, government spending, business investment plus exports minus imports.

The real GDP is more often used when making an assessment of the economic growth since it removes the effects of inflation. Real GDP compares the country's economic output from one year to the other (Amadeo, 2018). The real annual GDP growth is generally taken as a measure of changes in the level of economic activities experienced in a country (Afza & Nazir, 2007).

Baños- Caballero, García- Teruel, and Martínez- Solano (2010) on their empirical review on working capital among the Spanish SMEs found that the macroeconomic factors like interest rates and the GDP normally do influence the amount of inventory investments they make. Receivables are also affected in that if the entire economy is performing well, as shown by the high GDP growth rates, then firms tend to sell on credit more than an otherwise economy (Walker, 1991). The GDP growth was introduced to the models to cater for the effects of the economic cycles on the levels of investment in working capital (García- Teruel & Martínez- Solano, 2007).

Afza and Nazir (2007), in their study on the working capital management and profitability in Pakistani firms used to the annual GDP growth as one of the control variables to control the evolution cycles on the working capital. They, however, concluded that the real GDP growth may not affect the returns based on book values. (Walter et al., 2014), in their study among Nigeria manufacturing firms found the coefficient of correlation between the net operating profit and the GDP was -0.042 but not significant and as a result, the negative correlation means that an increase in GDP results to a decrease in profits among the firms.

(Falope & Ajilore, 2009a), also used the annual GDP growth to control for the evolution of the economic cycles on the firm's profitability, since the economic conditions tend to be reflected on the profitability. Baños- Caballero et al., (2010), in research among 4706 small and medium enterprises in Spain, between 2001-2005 used the annual GDP growth rate as a control variable though they did not have any significant impacts on the working capital management efficiency.

2.5.5 Corporate Governance

Corporate governances are the systems, policies, and procedures by which the business associations are directed and controlled (Gill & Mathur, 2011). They are the processes and structures used to direct and manage the firm and its affairs with the sole purpose of enhancing shareholder's wealth. Corporate governance can be viewed from the following perspectives; firstly, the transparency in decision making, secondly accountability in the sense that it should be easier for the actions or the inactions of the board to ascertained easily and thirdly, accountability in safeguarding the interest of the different stakeholders in the firm (Gill & Mathur, 2011).

The board of directors and the CEO are part of the corporate governance and they both can play a part in the profitability improvement at the firm. The CEO, Chief Financial Officer, at the firm is responsible for the strategic plans direction of the firm. The CEO is also responsible for the financial reporting of the firm's financial performance over a given time period and establishing effective internal control systems through the assistance of the internal auditor (Gill & Mathur, 2011).

The larger the size of the board the less desirable it is due to its negative correlation with the firm's performance this could be partially explained by poor communication and delayed decisions making even though it might offer benefits of a higher level of monitoring (Gill & Mathur, 2011). Poor corporate governance in a firm can lead to poor working capital policies being implemented (Gill & Biger, 2013). Corporate governance structures that are effective can serve as a check on the management's use of the firm's resources. Gill and Biger (2013) in their research on the impact of corporate governance on working capital management efficiency on American manufacturing firms concluded that corporate governance plays some role in improving the efficiency of working capital management.

Poor corporate governance may lead to excessive investment in working capital components especially cash which may end up being too much to the firm's detriment. If the managers of

the firms had the best interest of the shareholders, they ought to weigh the marginal benefits and costs associated with each working capital components (stewardship theory) and have them at optimal (Gill & Biger, 2013). Weak corporate governance might have an adverse result on cash management (Harford et al., 2008), accounts receivable, accounts payable and cash conversion (Gill & Biger, 2013).

There are very studies past studies that have given enough concentration on the impact the firm's corporate governance can have on the working capital management efficiency. (Gill and Mathur, 2011) in their study on the impact the board size (number of directors), CEO duality and corporate liquidity on the profitability among service firms in Canada concludes that the larger board size negatively impacted the firm's profitability. The study also found that the CEO duality and corporate liquidity had a positive impact on those firm's profitability. The board of directors, the CEO duality and corporate liquidity have a great influence in improving firm's profitability (Gill & Mathur, 2011). To measure the influence of quality of corporate governance on the firm's performance the researcher used the following as the measure; size of the board, which was measured by the total number of directors.

2.6 Summary of the Literature/Critique of the Literature

While working capital management is important to all firm size operating in an economy, it is of particular importance to the firms operating in emerging and developing markets, Abuzayed (2012). In many occasions researches done on working capital management have given a higher concentration on the effects of working capital management on firms profitability and liquidity; (Afrifa, 2016; Mathuva, 2010; Lakech, 2017; Walter et al., 2014; Pais & Gama, 2015; Singhania & Mehta, 2017; Abdulazeez, et al., 2018; Narwal & Jindal, 2018; Pandey & Sabamaithily, 2016; Estifanos, 2017; Sarwat et al., 2016; Rizki et al., 2017; Райков, 2017; (Hyz et al., 2018); Cristian & Raisa, 2017; Şamiloğlu & Akgün, 2016; Alavinasab & Davoudi, 2013).

Quite a few researches have tried to examine whether working capital management has an impact on the ultimate firm's objective of maximizing shareholders' wealth; (Akram et al., 2016; Saravan An et al., 2017; Abuzayed, 2012; Wasiuzzaman, 2015).

The researches on working capital investment influence on value creation have had quite inconsistent findings; Some researchers have found that actually, WCR on a firm has a positive influence on the firm's value; a study by Wasiuzzaman (2015) on Malaysian market analyzing data on 192 firms found out that working capital efficiency through reduction in working

capital investment results in a higher firm value. A similar result was found by Akram et al. (2016) in their study on firms listed in Karachi Stock Exchange (KSE) of Pakistan and National Stock Exchange (NSE) of India, chemical sector found mixed results.

Existence of an optimal working capital requirement also yields a positive impact on shareholders' value and as a result firms should aim to achieve it as such (Solano & García, 2007a) with receivables investment having the greatest impact on value creation (Baños-Caballero et al., 2014; Kieschnick et al., 2013). De Almeida and Eid (2014) however, found that the cash investment had the greatest impact as opposed to receivables investment.

However, other researchers have found a negative significant relationship between working capital investment and the respective market return of those firms was found in India; Akram et al. (2016). A similar negative relationship was found by (Hill et al., 2010; de Almeida & Eid, 2014; Aktas et al., 2015). Solano and García (2007a), found that the SME firms can boost their value by reducing their inventory investment as well as reducing the time for collecting accounts outstanding. Similar to findings of (Ukaegbu, 2014) in his study in developing economies in Africa (Kenya, Egypt, South Africa, and Nigeria). On the other hand, a study by Abuzayed (2012) on Amman Stock Exchange found out that the more profitable the firm the more inefficient a firm is managing working capital but the managers were not penalized on share prices.

Financial constraints also have an impact on the amount of investment towards working capital (Baños-Caballero et al., 2014; Wasiuzzaman, 2015; Kieschnick et al., 2013; de Almeida & Eid, 2014). However, the above researchers have had divergent views on the direction of the influence whether a positive or negative.

Wasiuzzaman (2015) and Kieschnick et al., (2013) found that there's a positive correlation between working capital management efficiency and its financial distress status. The firms that are more likely to financially distress the higher the chance they may not obtain external finance and as such the very efficient in managing the working capital they currently have; this results to high-value creation. On the other hand, other researchers have a negative correlation with firms that are already financially constrained more likely not to attempt in managing their working capital efficiently (Baños-Caballero et al., 2014). However, (Chauhan & Banerjee, 2018) found that there is actually no correlation between working capital investment and the firm's financial constraints; the reason they are already financially constrained.

2.7 Conceptual Framework and Discussions of the Variables

The dependent variable for the study was the economic consequences associated with WCM (in) efficiency. The economic consequences studied were both internal firm financial performance measures as well as market performance measures. The internal firm financial performance measures were ROA and the cash flow from operations scaled by total assets. The market performance was examined in two ways: through Tobin's Q and stock liquidity. It may be argued that depending on how (in) efficiently working capital is managed, the firm may realize improved financial performance, both in terms of profitability (D. M. Mathuva, 2010); Gill & Mathur, 2011; Deloof, 2003b) and or improved cash flow position.

Given that (in) efficiencies in working capital management may translate to improved firm financial performance, it can be inferred that the firm's stock valuation may also change. We investigate this possibility by examining the contribution of WCM (in) efficiency on market performance. To achieve this, market performance was examined in two ways: through Tobin's Q and stock liquidity. Prior studies have attempted to examine the contribution of WCM on firm value ((Falope & Ajilore, 2009a); Deloof, 2003b; Raheman et al., 2010) although the results have been inconclusive and further studies are warranted. Based on an internet search in academic literature repositories, no study could be found on the contribution of WCM efficiency on stock liquidity, an aspect of the current study aims to examine.

The variables of interest are categorized into three: specific working capital components (receivables, inventories, and payables), WCM efficiency measures (operating cycle and the cash conversion cycle) and managerial influences (corporate governance and management efficiency). These variables have been obtained from leading studies on WCM such as (Mathuva, 2010; Gill & Mathur, 2011; Raheman et al., 2010; Wasiuzzaman, 2015b).

Other variables known to influence the association between WCM efficiency and firm performance include firm size, leverage, and growth prospects both of GDP and firm's sales. These variables have been incorporated as control variables. The study aims contribute to extant studies on WCM by examining a complete spectrum of working capital influences from an economic perspective. The study drew conclusions based on where WCM influences are

most significant from an economic perspective, which remains largely underexplored.

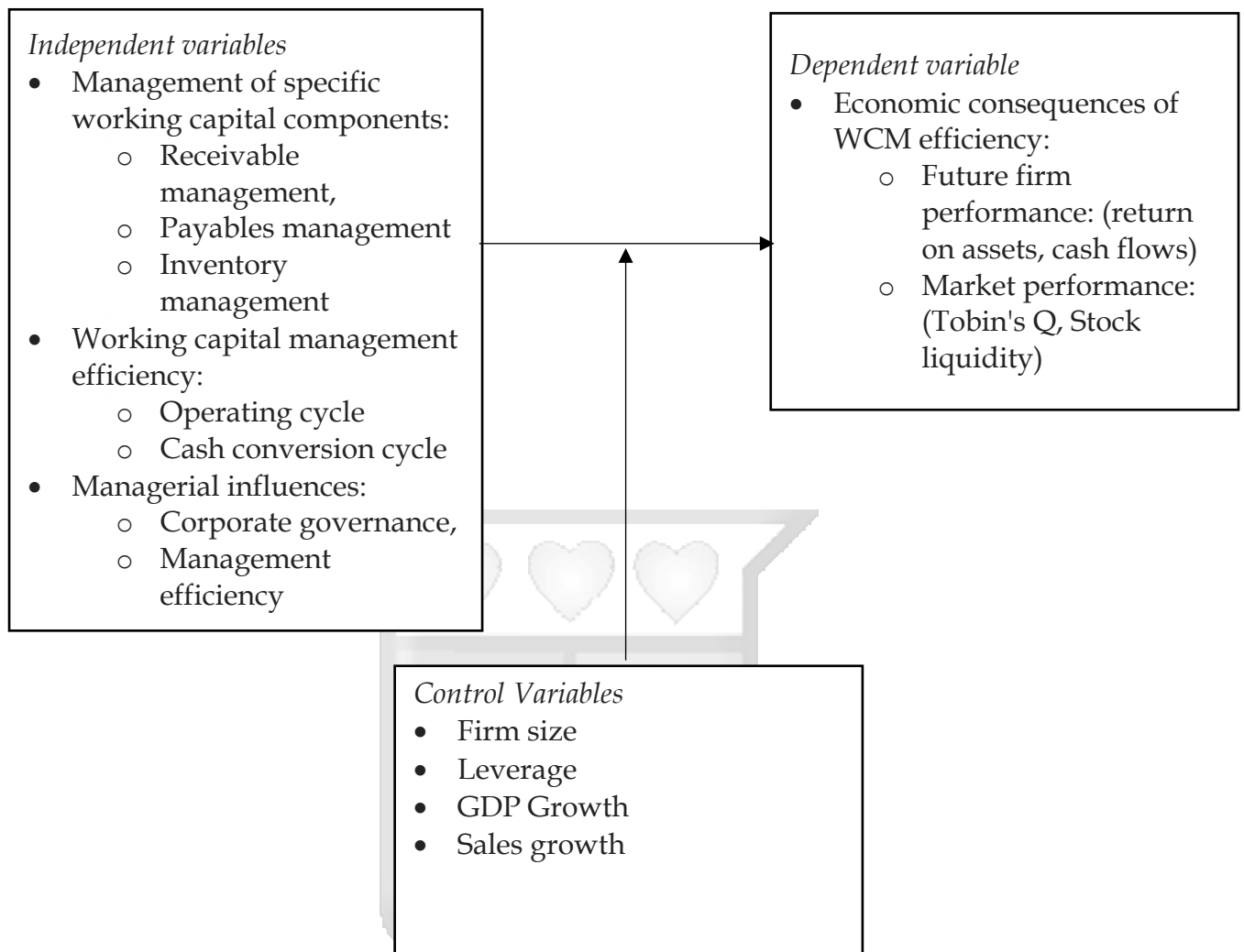


Figure 2.1 Conceptual Framework for Firm's Value

2.8 Operationalization of Variables

This section describes how the researcher measured both the independent variables (working capital management efficiency, working capital investment and cash flow from operations) and the dependent variables (firm's value, stock liquidity, cash flow from operations and firm's internal performances).

The efficient management of working capital management is expected to increase the free cash flows used in firm's valuation (S. Fazzari & Petersen, 1993; Wasiuzzaman, 2015b). The higher valuation of firms with higher cash flows can be attributed to the lower cost of capital and resultant higher equity value (Kieschnick et al., 2013). The effects of future cash flow effects on the firm's value are dependent on the industry the firm is in (Wasiuzzaman, 2015b). Cash flow was considered as the ratio of cash flow from operations to total assets.

The firm's value was measured using Tobin's Q statistics a ratio of market value of the firm to the replacement costs of its assets (Chung & Pruitt, 1994; Megna & Klock, 1993; Financial Times, 2018). It is a very good financial tool which is commonly unused in real-world decision analysis. It is a more meaningful way to judge the comparative performances of firm's (Wolfe & Sauaia, 2003). The stock liquidity was assessed using the bid-ask spread. The researcher used the Roll's model where the bid-ask spread will represent using the Roll's model spread.

The researcher also assessed the impact of moderating variables (size and leverage) had on the dependent variables in the above conceptual framework. New borrowers in the capital markets are generally expected to face tighter financial constraints than those with longer and already tested successful track records (Gertler, 1988; Niskanen & Niskanen, 2006). Mature firms are deemed to have many previous financing transactions with the lenders and as such information asymmetry reduced with the time taken to advance to them credit compared to the young firms (Greenwald et al., 1984). The researcher defined size as the natural logarithm of total assets as reported in the most recent published financial statements (Chauhan & Banerjee, 2017; Wasiuzzaman, 2015b).

The researcher used the firm's leverage as a controlling variable. Firms with higher debt ratio are expected to be paying higher interest since they are perceived to be riskier and lenders shy away from giving them capital, financially constrained (Chauhan & Banerjee, 2017). Highly geared firms tend to reduce their working capital investment to reduce the interest cost (Solano & García, 2007a). The researchers propose to use leverage ratio as the sum of total interest-bearing debt (both current and non-current) divided by total assets expressed as a percentage as proposed by (S. Fazzari & Petersen, 1993; Berk et al., 2018).

Nazir and Afza (2009), in their study of working capital management on profitability also used the firm's size as a control variable where they understood the size of the firm as the natural logarithm of the firm's total assets, as the value of the large assets may disturb the analysis.

The researcher defined size as the natural logarithm of total assets as reported in the most recent published financial statements (Chauhan & Banerjee, 2017; García- Teruel & Martínez-Solano (2007). However, other measures of firms that have been used include the use of the natural logarithm of sales (Raheman & Nasr, 2007b; Padachi, 2006b). To estimate the sales growth as a control variable; the increase or decrease in the firm's annual sales measured as a percentage (Falope & Ajilore, 2009a) sales growth estimator was used. It represents the

investment growth opportunities in a firm (Raheman, et al., 2010). It was measured as follows, as proposed by (Raheman et al., 2010; Falope & Ajilore, 2009; Deloof, 2003a).

There are very studies past studies that have given enough concentration on the impact the firm's corporate governance can have on the working capital management efficiency. Gill and Mathur (2011) in their study on the impact the board size (number of directors), CEO duality and corporate liquidity on the profitability among service firms in Canada concludes that the larger board size negatively impacted the firm's profitability. The study also found that the CEO duality and corporate liquidity had a positive impact on those firm's profitability. The board of directors, the CEO duality and corporate liquidity have a great influence in improving firm's profitability (Gill & Mathur, 2011).



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology that will be used for the study. Specifically, it describes the choice research design, research philosophy, population of the study, validity, and reliability of the research instrument data collection methods and analysis employed in the study. It also discussed the primary and secondary data collection methods that the researcher used. The regression model is also given key emphasis as it will be used in the analyses of the secondary data.

3.2 Research Philosophy

Research philosophy is a belief of the way that the data should be analyzed after it is gathered and interpreted. The researcher used both the ontological research philosophy and positivism. An ontological research paradigm (interpretivist paradigm) is the one that aims to establish the social and contextual understanding of a world and knowledge, (Galliers, 1991). The researcher issued questionnaires to the personnel of the firms under study and as such it warranted analyzing the data collected to be analyzed from some social perspectives.

The researcher used the positivist position since it aims at establishing a relationship (between working capital and firm's value, (Ungerleider and Burns, 2013; Chen and Hirschheim, 2004). The units under positivism approach can be observed and tested (Agyeman, 1998).

3.3 Research Design

The researcher used a descriptive research design in determining the relationship between working capital management and the respective firm value for manufacturing firms listed at the Nairobi Securities Exchange in Kenya. The use of descriptive design in working capital management research areas has been supported by the past empirical literature, (Gill & Biger, 2013; Deloof, 2003a; Raheman & Nasr, 2007b) .The main aim of descriptive research design was to depict the situation as is.

3.4 Population and Sampling

Population denotes all subjects under study. According to (Cooper and Schindler, 2003) a population element is the subject such as a person, organization, customer database, -or the amount of quantitative data on which measurement is being taken.

The target population of study was sixty-four (64) firms listed at the NSE as at the end of the year 2017. The final sample excluded listed firms that offer financial services (because of their unique characteristics in regard to working capital) which are categorized under banking, insurance, exchange-traded fund, investment, and investment services sectors as per the NSE listing category.

Data was obtained from the subjects' financial statements and the questionnaires which were filled by the respondents (NSE listed firm's securities, buyers and sellers).

Table 3.1: Categorization of firms under Study by the NSE

Sector	Number of Companies	Percentage of firms under each categorization (%)
Agricultural	7	30.4%
Automobiles and accessories	1	4.3%
Construction and allied	2	8.7%
Manufacturing and allied	6	26.1%
Energy and Petroleum	2	8.7%
Commercial and services	5	21.7%
Total	23	

The sample for this study comprised of firms listed at the NSE as at the end of the year 2017 for a period of eleven years spanning, 2007 - 2017. In line with the recommendations of (Deloof, 2003; Mathuva, 2010), all insurance, banking, investment services, telecommunication and technology, REITs, ETF and investment, (Nairobi Securities Exchange, 2018) were omitted on the final sample due to their different definition of working capital which was adopted in this research proposal, (Lazaridis & Tryfonidis, 2006b). Firms that has been threatened to be delisted from the NSE were also exempted from the survey. Firms that lacked data were also excluded in the final sample for the study.

3.5 Data Collection Methods

Data was obtained from both primary sources and secondary sources – The primary source was the questionnaires were issued to the personnel of the manufacturing firms listed at the NSE who had knowledge on the firm's strategic directions and working capital, and financial statements of the firms. A letter of introduction from Strathmore University was obtained and sent together with the questionnaires.

3.6 Data Analysis and Methodology

Data analysis can be defined as the systematic and application of the statistical tools to process the raw data into something meaningful to the researcher Saunders et al (2009). The researcher used OLS regression analysis and panel data regression analysis as supported by Afrifa (2016), Walter et al (2014), Bagchi & Khamrui (2014), Lyngstadaas & Berg (2016).

The regression model adopted was as follow be;

The following generalized models for the study were adopted:

$$ROA_{t+1} = \beta_0 + \delta_1 ARD_{it} + \delta_2 ICP_{it} + \delta_3 APP_{it} + \delta_4 CCC_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

$$CFFO/TA_t = \beta_0 + \delta_1 ARD_{it} + \delta_2 ICP_{it} + \delta_3 APP_{it} + \delta_4 CCC_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

$$Tobin'sQ_t = \beta_0 + \delta_1 ARD_{it} + \delta_2 ICP_{it} + \delta_3 APP_{it} + \delta_4 CCC_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

$$Spread_t = \beta_0 + \delta_1 ARD_{it} + \delta_2 ICP_{it} + \delta_3 APP_{it} + \delta_4 CCC_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Each of the above generalized models were further analysed using the following five models;

Model 1

$$ECON_CONS_{it} = \beta_0 + \delta_1 ARD_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Model 2

$$ECON_CONS_{it} = \beta_0 + \delta_1 ICP_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Model 3

$$ECON_CONS_{it} = \beta_0 + \delta_1 APP_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Model 4

$$ECON_CONS_{it} = \beta_0 + \delta_4 CCC_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Model 5

$$ECON_CONS_{it} = \beta_0 + \delta_1 ARD_{it} + \delta_2 ICP_{it} + \delta_3 APP_{it} + \beta_{ij} \sum_{t=i}^j CONTROLS_{it} + \rho_{it} + \theta_t + \varepsilon_i$$

Where:

$ECON_CONS_{it}$ represents the ROA_{t+1} , $CFFO/TA_t$, $Tobin'sQ_t$ and $Spread_t$, ARD represents the accounts receivable days, ICP is the inventory conversion period, APP is the accounts payable period and CCC is the cash conversion cycle, BS represents board size. A set of control variables (firm size, leverage, GDP growth, sales growth) were introduced in each model as explained in the previous section. Variables ρ , θ and ε capture firm-specific (cross-sectional effects), firm-year effects and the error term respectively. Table 3.2 presents the variable definitions.

In model 1 the $ECON_CONS_{it}$ was regressed against the ARD. In the second model (model 2), $ECON_CONS_{it}$ was regressed against ICP. In the model 3, $ECON_CONS_{it}$ was regressed against APP. In the model 4, $ECON_CONS_{it}$ was regressed against CCC while the final model (model 5), $ECON_CONS_{it}$ was regressed against the three CCC components, that is, ARD, ICP and APP, it excluded the CCC due to the high variance inflation factors it has with its own components (Mathuva, 2010).



3.7 Variable definitions

Table 3.2: Variable definitions

Variable	Definition	Measurement	Source
Dependent variables (ECON_CONS)			
ROA _{t+1}	Next year's return on assets	Net income after tax scaled by total assets:	Mathuva (2010)
CFFO/TA _t	Cash flow from operations to total assets	Cash flow from operations to total assets	(Roychowdhury, 2003)
Tobin's Q	Firm's market value measure	Market Value of the firm to its book value	(Chung & Pruitt, 1994)
Spread	A measure of stock liquidity.	Bid-ask spread = 2*(spread variance) ^{0.5}	(Roll, 1984)
Independent variables			
Test			
ARD	Account receivables day	The number of days firm takes for the firm to collect cash from customers	(Solano & García, 2007a)
ICP	Inventory conversion period	The number of days that a firm takes to convert inventory into cash.	(Falope & Ajilore, 2009)
APP	Accounts payable period	Number of days a firm takes to pay it short term suppliers	(Wasiuzzaman, 2015b)
CCC	Cash conversion cycle	The time span between the expenditure for the purchase of raw material to the time cash is received from the sale of the goods	(Padachi, 2006b)
Control Variables			
SIZE	Firm size	Natural logarithm of total assets	Annual financial statements
LEV	Financial leverage	Debt to equity ratio	Annual financial statements
GDPGR	GDP growth	The annual GDP growth rate	Kenya National Bureau of Statistics
SGROW	Sales growth	The annual sales growth rate	Annual financial statements
BS	Board Size	Number of board members	Annual financial reports

*All the figures used in the model were taken a natural log of their respective values

3.8 Diagnostic tests for the model;

3.8.1 Multi-collinearity

Multicollinearity is one of the key assumption made on the OLS regression analysis is the independent variables are not correlated with each other. Multi-collinearity exists when two or more independent variables in a model are highly correlated.

Multiple regression equation, like the one that the researcher used, required that the independent variables used in the models; account receivable days (ARD), inventory conversion period (ICP), account payable days (APP) and the cash conversion cycle (CCC) together with the control variables are not correlated, for the model to maintain its explanatory power. A multiple regression equation was used to analyse the variability of the dependent variable (ECON_CONS) using the information from the independent variables, for example, ARD and APP. Multi-collinearity exists when two or more variables in the regression model have a moderate or have a high level of correlation.

The existence of multi-collinearity in a multiple regression reduces the explanatory power of the independent variables thus threatens the statistical and inferential interpretation of these variables (Graham, 2003). The researcher used the variance inflation factors (VIF) calculate and assess the extent of the problem multi-collinearity in the regression equation.

3.8.2 Autocorrelation

It is a condition that exists when the set of data is correlated with itself. That is there is an existence of a degree of similarity between a given time series and its lag over a period of time. It is also referred to as serial correlation. A serial correlation of zero means that there is no correlation between the variables, that is, the variables are independent of each other. A correlation tending towards one means that the data set is serially correlated with its past values. The researcher used the Durbin-Watson test to test whether there is a serial correlation on the regression equation, (Falope & Ajilore, 2009b).

3.8.3 Heteroscedasticity

Heteroscedasticity is a condition that is illustrated by a systematic change of the error term or residuals over a range of values. One of the key assumptions of regression analysis is that the error terms in the model have not related to each other, homoscedasticity. The existence of heteroscedasticity tends to produce too small p-values than they are in reality, (Raheman & Nasr, 2007b; Gill & Biger, 2013). The researcher used the Breusch-Pagan test.to test the existence of heteroscedasticity.

3.8.4 Fixed-effects and random effects.

The fixed effects in a variable mean it is fixed or constant across the individuals while the random effects mean that these constant are not fixed vary across individuals. Random effects could arise when the observations are drawn from a sample as opposed to a population. The researcher used the Durbin-Wu- Hausman test for the existence of the fixed effects in the regression equations above, (Falope & Ajilore, 2009b).

3.9 Ethical Issues in Research

Ethical considerations are an important area that has to be an integral part of the research, especially if the data to be used will have to be obtained from human beings, Gregory (2003). Research ethics is referred to as the appropriate behavior of research relative to the societal norms (Guillemin, 2004).

The research will take into account the research ethics in the following ways; first, the participants will be informed that the data collected will be used solely for the intention of the research objectives and no unauthorized parties shall have accessed to it unless with the explicit permission of the respondents. Secondly, a cover letter from Strathmore University will assure the research participants that the data is for the sole purpose of the research. Third, the questionnaire will be issued only to the participants who are willing to be part of the research.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The purpose of this study was to assess the economic consequences of working capital management among the firm's listed at the Nairobi Securities Exchange in Kenya. The data analysis was carried out on 22 companies which were listed for the entire period analysis, 2007-2017.

The primary data was obtained from questionnaires issued to the managers and employees of the sample firms. The secondary data was obtained from the audited annual reports of the sampled firms.

This chapter presents a discussion on the research findings. It is divided into two parts; the first part discusses the results of the secondary data analysis; descriptive statistics, correlation matrix, diagnostic tests of the two models (model 1 and model 2), and the second part discusses the results of the findings of the questionnaires issued.

4.2 Results of Secondary data analysis

The secondary data was obtained from audited annual reports of the listed firms at the NSE and were analyzed using the OLS regression methods. The chapter section below discusses the descriptive statistics. The Table 4.2 provides a summary result for each variable that was considered in this study.

The findings show that on average the ROA for listed firms in Kenya was 10.97% with a maximum of 87.93% and minimum of -27.5% and a standard deviation of 15.22%. This shows a big range between the good performing and bad financial performing company being quite wide at 115.43%. The results of the finding show that on an average basis most of those firms had 9 board members and with annual sales growth of 11.59%.

The operating cash flow of the firms was on average 19.36 times compared to their assets. The cash flow was scaled as a ratio of operating cash flow to total assets. The maximum CFFO/TA was 2008.6 times while the minimum was -8.37 times, giving a range of 2016.63 times. It had a standard deviation of 135.08% and a median of 8.21 times.

The firm's market value was assessed using the Tobin's Q measure. The average firm's market value was 3.92 times with a standard deviation of 10.64 times. The maximum ratio was 96.29 times while the minimum ratio was -1.23 times, giving a range of 97.52 times.

The mean stock spread, as measured by Roll's spread was -0.38. The maximum spread was 37.5 while the minimum was -4.52, giving a range of 42.02. The standard deviation of spread was 2.69

The average collection period was 92.38 days, with the highest firms having ACP of 889 days more than 2 years to collect its receivables. The minimum receivable days were 0 and the standard deviation of 112.85 days.

The inventory conversion period was on average 80 days and a standard deviation of 111 days. The maximum inventory days was 1479 days and minimum of 0 days. The range of the inventory days was thus 1479 days. The study findings show that the agricultural based firm had the highest conversion days which is could understandable due to the long maturing life of crops and animals.

The study also found that on average firms pay their suppliers after 129 days from the day of purchase. APP had a standard deviation of 114 days. The maximum payable days was 885 days and the minimum was 0 days giving a range of 884 days. The firms with the highest days of payables were in the commercial and services classification, as per the NSE listed firms' classification.

The cash conversion cycle was on average at 43.63 days and a standard deviation of 205.31 days. The maximum CCC was 2291 and the minimum was -571 days giving a range of 2862 days.

Table 4.1: Descriptive statistics for ROA, Cash flow, market value and stock liquidity

	ROA	CFFO/TA	TOBIN Q	Spread	ARD	ICP	APP	CCC	WC/TA	QR	EV	BS	SIZE	SALES	GDP
Mean	10.97	19.36	3.92	-0.38	92.38	80.35	128.90	43.84	0.18	2.63	0.35	9.35	4.79	9.12	5.27
Standard Error	1.03	9.11	0.72	0.18	7.61	7.51	7.67	13.87	0.01	0.18	0.10	0.22	0.10	1.68	0.12
Median	6.92	8.21	1.11	-0.27	68.13	62.30	101.55	30.54	0.18	1.77	0.24	9.00	4.56	5.38	5.70
Mode		0.00		0.00	28.05	0.00	48.39	-0.31			0.00	8.00	6.23	0.00	5.90
Standard Deviation	15.22	135.08	10.64	2.69	112.85	111.35	113.77	205.76	0.16	2.74	1.43	3.33	1.45	24.93	1.80
Sample Variance	231.51	18246.97	113.17	7.24	12734.50	12397.86	12943.89	42335.85	0.03	7.49	2.03	11.11	2.11	621.48	3.25
Kurtosis	4.24	217.51	38.24	185.05	26.89	114.60	9.87	66.47	0.03	12.78	121.22	-0.42	-0.87	14.10	0.08
Skewness	1.56	14.71	5.68	13.05	4.79	9.30	2.53	6.43	-0.02	3.24	-9.38	0.39	-0.02	2.16	-0.55
Range	115.43	2016.63	97.52	42.02	889.69	1479.73	884.09	2861.95	0.93	20.00	21.15	16.00	6.19	267.54	6.90
Minimum	-27.50	-8.37	-1.23	-4.52	0.00	0.00	0.00	-571.45	-0.30	0.00	-17.82	2.00	1.36	-99.89	1.50
Maximum	87.93	2008.26	96.29	37.50	889.69	1479.73	884.09	2290.50	0.63	20.00	3.33	18.00	7.55	167.65	8.40
Observations	220.00	220.00	220.00	216.00	220.00	220.00	220.00	220.00	220.00	220.00	220.00	220.00	220.00	220.00	220.00

4.3 Diagnostic tests

4.3.1 Normality test for the dependent variable

The normality test is normally tested using two tests; the kurtosis and the skewness. Kurtosis measures the fatness of the distribution whereas skewness measures whether the distribution is symmetrical about its mean. Generally, a normal distribution is should not be skewed and should a coefficient value of 3.

From the Table 4.3, the skewness of ROA models was positive 1.56. The CFFO/TA models had a skewness value of positive 14.71 which means it had very right side skewness The Tobin's Q models had a positive skewness value of 5.68 which means a right skewness. The Roll's spread models had positive 13.05 as the skewness value, right side. Account payable period, cash conversion cycle, account receivables days and the inventory conversion period had a positive skewness which indicates slight skewness to the right. On the control variables; the working capital to total assets (WC/TA), leverage (LEV), firm's size (SIZE) and growth in the economy (GDP) all had negative values which meant they were skewed to the left. The board size (BS), growth in sales (SALES) and quick ratio (QR) had positive values which meant they were skewed to the right. Since the coefficient value of kurtosis was not equal to 3, the null hypothesis was not rejected implying that the population was not normally distributed.

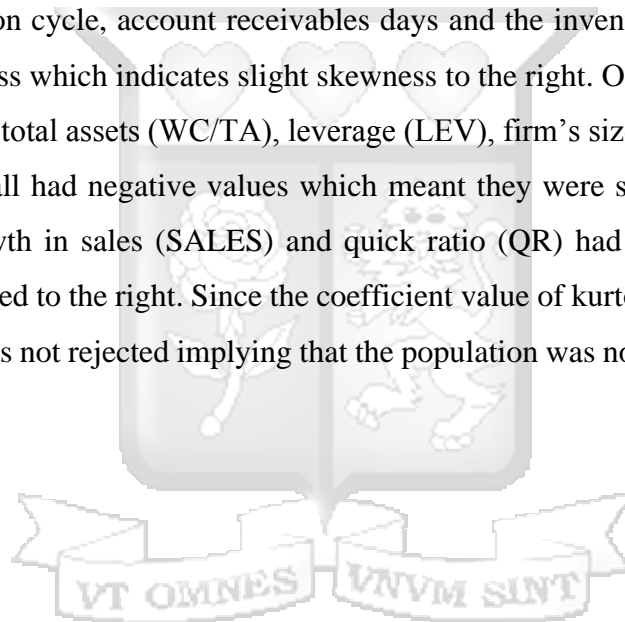


Table 4.2: Normality tests

	Kurtosis	Skewness	Standard Error
<i>ROA</i>	4.24	1.56	1.03
<i>CFFO/TA</i>	217.51	14.71	9.11
<i>TOBIN Q</i>	38.24	5.68	0.72
<i>Spread</i>	185.05	13.05	0.18
<i>ARD</i>	26.89	4.79	7.61
<i>ICP</i>	114.60	9.30	7.51
<i>APP</i>	9.87	2.53	7.67
<i>CCC</i>	66.47	6.43	13.87
<i>WC/TA</i>	0.03	-0.02	0.01
<i>QR</i>	12.78	3.24	0.18
<i>LEV</i>	121.22	-9.38	0.10
<i>BS</i>	-0.42	0.39	0.22
<i>SIZE</i>	-0.87	-0.02	0.10
<i>SALES</i>	14.10	2.16	1.68
<i>GDP</i>	0.08	-0.55	0.12

4.3.2 Multicollinearity test

One of the key assumption that is normally made on the OLS regression analysis is the independent variables are not correlated with each other. Multi-collinearity exists when two or more independent variables in a model are highly correlated.

The study employed the two test to assess the existence of multi-collinearity; tolerance values and variance inflation factors. A tolerance value close to 1 means their little multicollinearity, if any and the more far from 1 (close to 0) a is, higher the possibility of having multicollinearity. In the VIFs, a value more than 10 implies the presence of multicollinearity problems in the model.

Table 4.3: Collinearity Test, ROA models

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF
WC/TA	.879	1.138	.865	1.156	.878	1.139	.882	1.133	.862	1.160
QR	.665	1.503	.665	1.505	.666	1.502	.670	1.494	.659	1.518
LEV	.915	1.093	.919	1.088	.916	1.092	.909	1.101	.907	1.103
BS	.678	1.474	.673	1.486	.656	1.524	.561	1.782	.631	1.585
SIZE	.697	1.435	.741	1.350	.758	1.319	.758	1.320	.677	1.477
SALES	.920	1.087	.916	1.092	.922	1.085	.923	1.084	.912	1.096
GDP	.990	1.010	.992	1.008	.992	1.009	.989	1.012	.989	1.011
ARD	.820	1.220	.899	1.112	.938	1.066	.746	1.341	.716	1.397
ICP									.736	1.359
APP									.684	1.463

*Tol = Tolerance

In the Table 4.3, all the five models of ROA had tolerance values close to 1; this shows that they were no multicollinearity issues. A similar observation was made when the VIFs values were used to test for multicollinearity; all the VIF values were all close 1 which indicated the absence of multicollinearity in the models.

Table 4.4: Collinearity Test, CFFO/TA models

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF
WC/TA	.879	1.138	.865	1.156	.878	1.139	.882	1.133	.862	1.160
QR	.665	1.503	.665	1.505	.666	1.502	.670	1.494	.659	1.518
LEV	.915	1.093	.919	1.088	.916	1.092	.909	1.101	.907	1.103
BS	.678	1.474	.673	1.486	.656	1.524	.561	1.782	.631	1.585
SIZE	.697	1.435	.741	1.350	.758	1.319	.758	1.320	.677	1.477
SALES	.920	1.087	.916	1.092	.922	1.085	.923	1.084	.912	1.096
GDP	.990	1.010	.992	1.008	.992	1.009	.989	1.012	.989	1.011
ARD	.820	1.220	.899	1.112	.938	1.066	.746	1.341	.716	1.397
ICP									.736	1.359
APP									.684	1.463

*Tol = Tolerance

In the Table 4.4, all the five models of the firm's cash flow had tolerance values close to 1; this shows that they were no multicollinearity issues. A similar observation was made when the VIFs values were used to test for multicollinearity; all the VIF values were all close 1 which indicated the absence of multicollinearity in the models.

Table 4.5: Collinearity Test, Tobin's models

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF
WC/TA	.879	1.138	.865	1.156	.878	1.139	.882	1.133	.862	1.160
QR	.665	1.503	.665	1.505	.666	1.502	.670	1.494	.659	1.518
LEV	.915	1.093	.919	1.088	.916	1.092	.909	1.101	.907	1.103
BS	.678	1.474	.673	1.486	.656	1.524	.561	1.782	.631	1.585
SIZE	.697	1.435	.741	1.350	.758	1.319	.758	1.320	.677	1.477
SALES	.920	1.087	.916	1.092	.922	1.085	.923	1.084	.912	1.096
GDP	.990	1.010	.992	1.008	.992	1.009	.989	1.012	.989	1.011
ARD	.820	1.220	.899	1.112	.938	1.066	.746	1.341	.716	1.397
ICP									.736	1.359
APP									.684	1.463

*Tol = Tolerance

In the Table 4.5, all the five models of the firm's market values had tolerance values close to 1; this shows that they were no multicollinearity issues. A similar observation was made when the VIFs values were used to test for multicollinearity; all the VIF values were all close 1 which indicated the absence of multicollinearity in the models.

Table 4.6: Collinearity Test, Roll's models

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF	Tol	VIF
WC/TA	.879	1.138	.865	1.156	.878	1.139	.882	1.133	.862	1.160
QR	.665	1.503	.665	1.505	.666	1.502	.670	1.494	.659	1.518
LEV	.915	1.093	.919	1.088	.916	1.092	.909	1.101	.907	1.103
BS	.678	1.474	.673	1.486	.656	1.524	.561	1.782	.631	1.585
SIZE	.697	1.435	.741	1.350	.758	1.319	.758	1.320	.677	1.477
SALES	.920	1.087	.916	1.092	.922	1.085	.923	1.084	.912	1.096
GDP	.990	1.010	.992	1.008	.992	1.009	.989	1.012	.989	1.011
ARD	.820	1.220	.899	1.112	.938	1.066	.746	1.341	.716	1.397
ICP									.736	1.359
APP									.684	1.463

*Tol = Tolerance

In the Table 4.6, all the five models of the firm's stock liquidity had tolerance values close to 1; this shows that they were no multicollinearity issues. A similar observation was made when the VIFs values were used to test for multicollinearity; all the VIF values were all close 1 which indicated the absence of multicollinearity in the models.

4.3.3 Autocorrelation test

Durbin-Watson (DW) statistic is a test used to test the presence of autocorrelation in the error term of a time series regression analysis. This study used the DW test to test for the presence of the autocorrelation. The null hypothesis, absence of autocorrelation, cannot be rejected if DW statistic calculated is between 1-3, (Falope & Ajilore, 2009b; Nazir & Afza, 2009).

For ROA models, the Durbin-Watson statistic ranged between 0.570 – 0.607 which indicated the presence of serial autocorrelation. For CFFO/TA models, Durbin-Watson statistic ranged between 1.199 – 1.377 which indicated the absence of serial autocorrelation issues. For Tobin's Q models, Durbin-Watson (DW) statistic ranged from 0.416 – 0.562 which indicates the presence of positive serial autocorrelation. For Roll's spread models, Durbin-Watson (DW) statistic ranged between 0.811 – 0.888 which indicates the presence of serial autocorrelation though it was a major issue for the model.

4.3.4 Heteroscedasticity test

Heteroscedasticity simply means unequal scatters or error terms not being constant or variability of variables being unequal across a range of values and the opposite side of the quantum is the homoscedasticity, which means that the error terms is constant.

In OLS homoscedasticity is one the key assumption that is normally applied in such tests. The researcher used **Breusch-Pagan Test** to test the presence of homoscedasticity in the twenty models, (Afrifa & Padachi, 2016). It involves calculating a chi-square statistics and comparing this to the chi-square from the tables. If the chi-square calculated is greater than the chi-square tabulated, reject the null hypothesis, there exist heteroscedasticity. The null hypothesis is the error terms have a constant variance. The null hypothesis (absence of homoscedasticity) was rejected if the p-values were greater than 0.05.

Table 4.7: Heteroscedasticity test

Chi-Square calculated	Model 1	Model 2	Model 3	Model 4	Model 5
ROA	218.037	218.092	218.043	217.792	218.185
CFFO/TA	68.9939	30.2823	10.9206	127.155	86.5549
TOBIN'S Q	65.5692	64.9529	54.5489	135.562	69.5462
SPREAD	52.6151	86.2862	38.75	66.8995	94.2036
Chi-Square tabulated* = 123.34					
* 5% significance level and 219 degrees of freedom					

From the output obtained above, the ROA model Table 4.3.1 the chi-square calculated was greater than chi-square tabulated, the null hypothesis was thus rejected which thus indicated the presence of heteroscedasticity since the chi-square calculated are above the chi-square tabulated. The CFFO/TA model had a chi-square calculated statistics less than the chi-square tabulated which meant the null hypothesis was accepted, presence of homoscedasticity. The model had thus little worries with regard to heteroscedasticity since its only model 4 that has heteroscedasticity of the 5 models. The other models, Tobin's Q and spread model had no heteroscedasticity issues

4.4 Correlation analysis

Correlation analysis is used to assess the strength of the nature of the relationship between two variables (Mathuva, 2010). The summary of correlation matrix values is provided in the Table 4.6. The study focused on the relationship between ROA, CFFO/TA, Tobin's Q and Spread and the independent variables based on working capital management efficiency and the control variables.

From the correlation analysis Table 4.6, the highest correlation coefficient was 0.695 which was less than 0.8, meaning there was no existence of multicollinearity among the variables. ROA has a negative correlation with all the variables except account payable period; the Tobin's Q had a positive correlation with the variables except ARD, firm's size and sales growth; spread had a negative correlation with all the variables except ICP and CCC.

This implies that an increase in ROA is explained by a decrease in account receivables days, \log_{ard} (coefficient -0.002 p-value 0.976) and the decrease may not be significant. The increase in ROA could also be explained by the decrease in; inventory days/ \log_{icp} (coefficient -.138 p-value .041), cash conversion cycle/ \log_{ccc} (coefficient -.332 p-value 0.000), operating cycle/ \log_{oc} (coefficient -.130 p-value .055). The only variables that were significant in explaining the ROA were; the inventory conversion cycle/ \log_{icp} and the cash conversion cycle/ \log_{ccc} .

CFFO/TA has a negative correlation with the variables except \log_{icp} /inventory period and \log_{app} /account payable period. This implies that a decrease in, \log_{ard} /account receivable period (coefficient -.174 p-value 0.010), and \log_{ccc} /cash conversion cycle (coefficient -.196 p-value 0.004) and \log_{oc} /operating cycle (coefficient -.015 p-value 0.829) lead to an increase in the CFFO/TA, cash-flow from operations.

Tobin's Q has a positive correlation with all the variables except \log_{ard} /receivables days. This implies that an increase in payables day/ \log_{app} (coefficient .118 p-value .082), inventory days/ \log_{icp} (coefficient .11 p-value .104), cash conversion cycle/ \log_{ccc} (coefficient .03 p-value .655) and operating cycle/ \log_{oc} (coefficient .075 p-value .270) leads to an increase in Tobin's Q and the only variable that has a negative impact on Tobin Q is the payables day/ \log_{app} (coefficient .118 p-value .082). All the variables that were insignificant in explaining the model.

The spread has a negative relationship with all the variables except \log_{icp} /inventory period and \log_{ccc} /cash conversion cycle. This implies that an increase in \log_{icp} /inventory period

(coefficient .010 p-value .880) and log_ccc/cash conversion cycle (coefficient .026 p-value .707) will result to an increase in the spread. The increase in the other variables will result to a decrease in the spread; payables day/log_app (coefficient -.046 p-value .501), operating cycle/log_oc (coefficient -.013 p-value .846) and log_ard/receivables day (coefficient -.032 p-value .635). All the variables were insignificant in explaining the spread.

Table 4.8: Correlation analysis

	log_roa	log_cffo	log_tobin	log_roll	log_ard	log_icp	log_app	log_ccc	log_wc/ta	log_quick	log_debt	log_board	log_size	log_sales	log_dgp
log_roa	1.0000														
log_cffo	0.2995	1.0000													
log_tobin	0.3897	0.3698	1.0000												
log_roll	-0.0948	-0.1714	-0.4660	1.0000											
log_ard	-0.0021	-0.1736	0.0724	-0.0964	1.0000										
log_icp	-0.1379	0.1611	-0.0140	-0.0986	-0.0673	1.0000									
log_app	0.0675	0.0788	0.2979	-0.1407	0.2813	0.4176	1.0000								
log_ccc	-0.3322	-0.1957	-0.1320	-0.0476	0.3703	0.0378	-0.3721	1.0000							
log_wc/ta	0.0493	0.0088	0.1460	-0.0773	0.0584	-0.1942	-0.0531	0.0214	1.0000						
log_quick	0.1042	0.0079	-0.0277	-0.2462	0.2513	-0.0595	-0.0014	0.2537	-0.1808	1.0000					
log_debt	0.0851	-0.0400	0.0881	-0.1039	-0.0111	0.0279	-0.0591	0.0476	-0.1983	-0.2224	1.0000				
log_board	0.1565	0.0814	0.0647	0.1304	-0.2574	0.1984	0.1865	-0.4857	-0.1429	-0.5177	0.1056	1.0000			
log_size	-0.4106	-0.1970	-0.4523	0.1537	-0.3742	0.2199	-0.0292	-0.0794	-0.2990	-0.3427	0.1555	0.3098	1.0000		
log_sales	-0.1357	0.0247	-0.1099	0.0229	-0.0966	-0.0644	-0.0808	0.0836	-0.0600	-0.0265	0.0660	-0.1086	0.1979	1.0000	
log_dgp	-0.0180	0.0786	0.0430	-0.0877	-0.0489	-0.0171	-0.0358	-0.0457	0.0195	0.0308	0.0262	-0.0090	0.0290	-0.0414	1.0000

4.5 Multivariate results

The main objective of this study was to determine the working capital characteristics that have economic consequences on the company performance. Multiple regression was carried on the time series data obtained from the year 2007 – 2017.

In the first regression model (model 1), ARD was regressed against ROA. In the second regression model (model 2), ICP was regressed against the ROA. The third regression model (model 3) involved regressing APP against the ROA. The fourth model (model 4) involved regressing the CCC against the ROA and the final model involved regressing the ARD, ICP and APP against the ROA. All the models considered the moderating variables (WC/TA, QR, LEV, BS, FS, Sales and GDP).

The cash conversion cycle was not included in the final model 5 due to the high possibility of multi-collinearity that would have resulted between it and the account receivable days, account payables day and the inventory conversion period.

4.5.1 ROA and Working Capital

Table 4.6.1, also shows that the ROA 99.2% (R-Square = .992), a very high proportion of changes in profitability can be explained by the independent variables in the model, the rest (0.8%) is caused by other factors not in the model. The use of an adjusted R-square is a better measure of the model explanatory power than R square, (Deloof, 2003b; D. Mathuva, 2010).

The model is even more significant as measured by F statistic ($F > 10$), the F values for all the models were very high. For ROA models, the Durbin-Watson statistic ranged 1.369 – 2.056 which indicated the absence of serial autocorrelation.

An assessment of each parameter significance in the model was made. The Table 4.6.1, account payable (p value = 0.036) and inventory conversion period (p-value = 0.024) in model 4, were all statistically significant in the ROA model (model 5), (p values < 0.1).

Cash conversion cycle (p value = 0.851) in model 4, account receivable days (p value = 0.286), meant that the two variables were statistically insignificant in explaining the firm's profitability, as measured by ROA.

The account payables days was statistically significant also had a negative coefficient (beta = -0.014). This meant that the increase in numbers of days that the firm's takes to pay its suppliers the less profitable that will be.

Inventory conversion period, as well, had a positive coefficient (beta = 0.017) The implication of positive coefficient, meant the longer the firm takes to turn raw material into a finish good and make a sale, the higher its profitability will be.

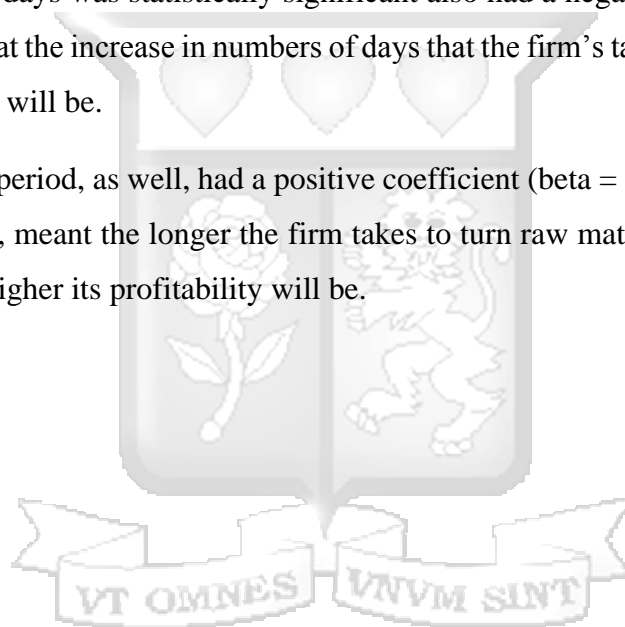


Table 4.9: Relationship between WCM and Profitability

	Dependent variable = Return on Assets				
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	1.033*** (.000)	1.009*** (.000)	1.041*** (.000)	.983*** (.000)	1.012*** (.000)
ARD	-.005 (.626)				.015 (.286)
ICP		.008 (.187)			.017** (.024)
APP			-.014 (.266)		-.036** (.036)
CCC				.990 (.851)	
QR	3.054*** (.000)	3.050*** (.000)	3.052*** (.000)	3.047*** (.000)	3.060*** (.000)
WC/TA	-.007 (.159)	-.008 (.118)	-.004 (.757)	-.004 (.757)	-.007 (.156)
SIZE	-.056** (.035)	-.049** (.036)	-.047** (.043)	-.087 (.125)	-.049* (.058)
SALES	-.003 (.588)	.000 (.935)	-.005 (.406)	-.004 (.639)	-.001 (.870)
LEV	.003 (.275)	.002 (.413)	.004 (.165)	-.016 (.232)	.001 (.639)
BS	-.028 (.136)	-.037* (.065)	-.012 (.592)	.013 (.760)	-.006 (.786)
GDP	.014 (.243)	.016 (.185)	.014 (.267)	.033 (.223)	.016 (.174)
Adjusted R2	.991	.991	.991	.990	.992
F-value	847.733	872.538	971.972	346.298	734.457
Durbin-Watson	1.406	1.369	1.409	2.056	1.459

(values in parentheses are the p-values; *, ** and *** denotes significance at the 10, 5 and 1%, respectively. The results are obtained using the pooled OLS regression model.) The parameters

included in the revised model are statistically significant at 90% confidence level, (Falope & Ajilore, 2009b).

4.5.2 Cash flow and Working Capital

The Table 4.6.2, shows that the adjusted R^2 of 0.393. This means that 39.3% of CFFO/TA model (model 5) changes can be explained by the determinants included in the model. This shows that the rest of 60.7% changes in firm's cash flow are attributable to factors beyond the scope of the model. The model can be deemed to a reliable know considering we are assessing it using the adjusted R square. The model had an F statistic values less than 5 which could mean that the model may not be significant in explaining the cash flow.

The account receivables day (p value = 0.000), the inventory conversion period (p value = 0.024) (model 5) and cash conversion cycle (p value = 0.000) in model 4, were all statistically significant. The cash conversion cycle (beta coefficient =-1.007) (model 4) and receivables days (-1.001) (model 5) both had a negative beta coefficient, meaning an increase in these two variables causes a decrease in the firm's cash flow.

An increase in the days for credit collection from customers would mean a decrease in cash flow position, as the company is transferring its resources to their customers. A decrease in the cash conversion cycle would lead to an increase in the firm's cash flow position. This is true since a higher CCC means more cash being tied down in the working capital thus available cash is thus reduced. On the other hand, the inventory conversion cycle had a positive beta coefficient (beta = 0.272) meaning an increase in the inventory period leads to an increase in the firm's cash flow.

The other variable, account payable period, APP was deemed not statistically significant (p value = 0.566) model 5 and also statistically insignificant when considered alone, p value =0.962 (model 3). That implies that APP does not all influence the firm's cash flows.

Table 4.10: Relationship between WCM and firm's cash flow/ Total Assets

	Dependent variable = Cash flow/Total Assets				
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	3.110*** (.000)	.705* (.094)	1.04924* (0.05425)	3.082*** (.001)	2.761*** (.000)
ARD	-.829*** (.000)				-1.001*** (.000)
ICP		.272** (.024)			.072 (.566)
APP			0.01164 (0.96201)		.471* (.093)
CCC				-1.007*** (.000)	
QR	.473 (.527)	-.010 (.990)	-0.0071 (0.99355)	3.772*** (.009)	.328 (.649)
WC/TA	-.085 (.326)	-.039 (.682)	-0.0009 (0.99261)	.238 (.176)	-.120 (.154)
SIZE	-1.260*** (.005)	-.386 (.380)	-0.4189 (0.37546)	.042 (.952)	-1.224*** (.005)
SALES	.069 (.477)	.132 (.255)	0.03898 (0.73471)	.261** (.038)	.141 (.157)
LEV	-.039 (.381)	-.089* (.074)	-0.0711 (0.16673)	.549*** (.002)	-.040 (.356)
BS	-.010 (.973)	-.188 (.611)	0.11691 (0.79333)	-.313 (.572)	-.630 (.114)
GDP	.044 (.831)	.123 (.593)	0.06806 (0.77728)	-.615* (.075)	.083 (.672)
Adjusted R2	.314	.138	0.04964	.578	.393
F-value	3.027	1.057	0.34603	3.424	3.308
Durbin-Watson	1.524	1.634	1.35364	1.990	1.681

values in parentheses are the p-values; *, ** and *** denotes significance at the 10, 5 and 1%, respectively. The results are obtained using the pooled OLS regression model.

4.5.3 Firm's value and Working Capital

The Table 4.6.3, presents the 5 models where each of the independent variable was regressed against the market value of a firm, Tobin's Q. Model 5 had an adjusted R^2 of 31.6% while the model 4 had 61.6% explanatory power when considering cash conversion cycle alone. This could have been explained by the fact that the independent variables combined explains more than when each variable is regressed individually. The adjusted R^2 of 31.6%, means that the model can explain 36.1% of changes in the firm's cash flow, a fairly good portion. However, the remaining 69.4 % can be explained by other factors not captured by the model. All the five models are not have passed the test of good fit since their F-values, ($F > 10$). They could have been also cases of serial correlation in the model due to the presence of low Durbin-Watson statistics, $DW < 1$.

The account receivables day ($p=0.05$), the cash conversion cycle ($p=0.081$) and the inventory conversion period ($p=0.057$) were statistically significant in explaining the model, model 2. The account payable period, however, not statistically significant ($p=0.6347$) on standalone basis and when regressed together with the other variables, ($p=0.000$) and even when regressed against other variables ($p=0.421$) in model 5.

The account receivable had negative beta coefficient (beta = -0.578) which implies that a decrease in the receivable day will lead to an increase in the firm's value. The inventory conversion period had a positive coefficient (beta=0.32) which means that an increase in payables day leads to an increase in the company's value, as measured by the Tobin's Q.

Table 4.11: Relationship between WCM and firm's market value

Independent variables	Dependent variable = Tobin's Q				
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	2.905*** (0.002)	1.054** (0.075)	1.24793* (0.09588)	3.083*** (0.006)	2.388** (0.015)
ARD	-.578** (0.05)				-.674** (0.068)
ICP		.320** (.057)			.176 (0.389)
APP			0.16046 (0.63467)		.361 (0.421)
CCC				-.514* (0.081)	
QR	-1.797 (0.13)	-2.139* (0.070)	-2.2106* (0.07319)	.946 (0.553)	-1.934 (0.101)
WC/TA	.164 (0.228)	.1789 (0.190)	0.2202 (0.11137)	.460** (0.034)	.123 (0.363)
SIZE	-2.419*** (0.001)	-1.791*** (0.005)	-1.7676*** (0.00856)	-2.605*** (0.004)	-2.338*** (0.001)
SALES	-.082 (0.589)	.007 (0.965)	-0.0892 (0.5748)	-.064 (0.653)	.014 (0.931)
LEV	.160** (0.024)	.116* (0.098)	0.13566* (0.05816)	1.267*** (0.000)	.149** (0.039)
BS	.375 (0.439)	.099 (0.849)	0.29997 (0.62671)	.529 (0.426)	-.235 (0.713)
GDP	.353 (0.274)	.435 (0.182)	0.3794 (0.25627)	.183 (0.644)	.409 (0.203)
Adjusted R2	.298	.295	0.24795	.616	.316
F-value	4.237	4.194	3.51395	6.619	3.820
Durbin-Watson	.474	.548	0.48584	2.423	.490

(values in parentheses are the p-values, *, ** and *** denotes significance at the 10, 5 and 1%, respectively. The results are obtained using the pooled OLS regression model).

4.5.4 Stock Liquidity and Working Capital

The Table 4.6.4, shows that the model regression results of the five models, where APP, ARD, ICP and CCC were regressed individually against the spread, and then APP, ARD and ICP regressed against the spread together. The results of the regression models show that model had an adjusted $R^2 = 0.428$ (model 5), with the other models having the weaker explanatory power. It means the independent variables can be able to explain 42.8% of stock liquidity, the rest of stock liquidity (57.2%) is beyond the variables captured by the model. The models in totality was not quite significant in explaining the stock liquidity as shown by very low F-statistics. However, serial correlation was not a problem as shown by Durbin-Watson statistics close to 2 for all the models.

However, the inventory conversion period ($p=0.000$) and account receivables days ($p=0.035$) were significant to the model 2 and model 1. Inventory conversion period was also highly statistically significant when combined with other variables in model 5, at 1% significance level. Inventory conversion period had a negative coefficient, $\beta=-0.598$. This means that a decrease in the APP, leads to a higher stock liquidity. The receivable collection period, however had a positive beta coefficient, 0.581, which meant an increase in collection days leads to an higher stock liquidity.

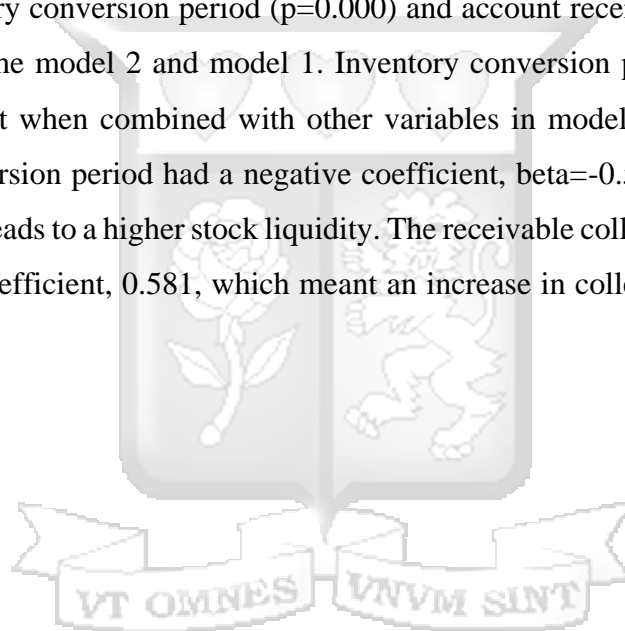


Table 4.12: Relationship between WCM and stock liquidity

Independent variables	Dependent variable = Roll's Spread				
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-2.238*** (0.009)	-.010 (0.983)	-0.5679 (0.41379)	-1.247 (0.321)	-1.061 (0.184)
ARD	.581** (0.035)				.321 (0.292)
ICP		-.598*** (0.000)			-.608*** (0.001)
APP			-0.1643 (0.60355)		.188 (0.614)
CCC				.597* (0.099)	
QR	1.448 (0.189)	1.801** (0.067)	1.86519 (0.10556)	-2.309 (0.248)	1.521 (0.122)
WC/TA	-.122 (0.336)	-.096 (0.391)	-0.1781 (0.16789)	-.312 (0.225)	-.065** (0.564)
SIZE	1.640** (0.012)	.971* (0.062)	0.98388 (0.1105)	.545 (0.593)	1.373** (0.018)
SALES	-.152 (0.283)	-.336** (0.015)	-0.1448 (0.333)	-.138 (0.434)	-.335** (0.014)
LEV	.054 (0.405)	.116** (0.047)	0.07767 (0.242)	-.221 (0.353)	.103 (0.085)
BS	-.195 (0.665)	.405 (0.35)	-0.1166 (0.705)	-.309 (0.705)	.269 (0.614)
GDP	-.535* (0.077)	-.674** (0.015)	-0.5622** (0.075)	-.611 (0.219)	-.655** (0.017)
Adjusted R2	.239	.392	0.17614	.304	.428
F-value	2.082	4.275	1.41638	1.092	3.819
Durbin-Watson	1.673	1.996	1.45162	2.508	2.090

(values in parentheses are the p-values, *, ** and *** denotes significance at the 10, 5 and 1%, respectively. The results are obtained using the pooled OLS regression model).

4.6 Hypothesis Testing

The researcher had four hypotheses to test; one of the hypothesis was not confirmed from the results obtained from the regression analysis carried out.

4.6.1 Hypothesis 1: Working capital and firm's financial performance

Inventory conversion period on ROA had a negative beta coefficient of -0.017, and a p-value of 0.024 which implies that ICP is a significant determinant of profitability. The null hypothesis was thus not rejected. The account payable days had a beta coefficient of -0.036, and a p-value of 0.036 which implies that APP is a significant determinant of profitability. The null hypothesis was thus not rejected. The findings are consistent with those (Solano & García, 2007; Mathuva, 2010).

The findings from the study revealed that the receivables days had a p-value of 0.626 in model 1 and a p-value of 0.286 in model 5 which implies that the account receivables days was an insignificant determinant of the firm's financial performance, as measured by ROA. The null hypothesis was thus rejected.

The cash conversion cycle had a beta coefficient of .99 and a p value of 0.851, implying that the cash conversion cycle was an insignificant at 10%. The null hypothesis was thus not accepted.

4.6.2 Hypothesis 2: Working capital and firm's cash flow

The findings from the study revealed that the account receivable days (beta = -1.001, p value = 0.000), inventory conversion period (beta = 0.272, p value = 0.024), and cash conversion cycle (beta = -1.007, p value = 0.000) and the account payable (beta = 0.471, p=0.093), had a significant determinants of the firm's cash flow position.

The cash conversion had a p= 0.000, highly significant at 1% significance level and a negative coefficient, which means its increase leads to a decrease in the cash flow of the firm. The same can be said of account receivables day which had a negative beta; an increase the delay to collect cash from credit customers results to a decrease in the firm's cash position. The inventory conversion period had a positive coefficient meaning the more the days the firm's take to convert the raw materials to finished goods and get a customer to purchase it, the more the firm's cash flow is. Account payable period had a p=0.093 (p<0.1), it was thus significant to the model. The positive beta implied an increase in account payable leads to an increase in the firm's cash flow.

The null hypothesis that the receivable days, inventory period, account payable and cash conversion cycle have a significant influence on cash flow was thus not rejected.

4.6.3 Hypothesis 3: Working capital and firm's market value

The findings from the study revealed that the market value (Tobin's Q) that the account receivable days (beta = -0.262, p value = 0.002), inventory conversion period (p=0.057, model 2) and the cash conversion cycle (p=0.081) were a significant determinant of the firm's market value, at 10% significance level. The account payable days was however, not a significant determinant of firm's cash flow as shown by its high p value = .421

The null hypothesis, that the receivable days, inventory conversion period and cash conversion cycle that they have a significant influence on the firm's value was thus not rejected. However, the null hypothesis that the account payable was a significant determinant of market value was rejected.

4.6.4 Hypothesis 4: Working capital and firm's stock liquidity

The findings from the model revealed inventory conversion period was very significant in explaining the firm's stock liquidity (1% significance level); (beta = 0.598, p value =0.000), while account receivable days (beta =0.581 p value =0.035) and cash conversion cycle (beta =0.597 p value =0.099) were significant to the model at 5% and 10% significance level. This means that a decrease in the ICP and APP leads to an increase in stock liquidity.

The account payable period (beta =-1643, p value =.60355), was thus insignificant determinants of stock liquidity at 1%, 5% and 10% significance. It does not influence the stock liquidity of a firm. The null hypothesis that account payable period has a significant influence on stock liquidity was thus rejected.

4.7 Findings from the Questionnaire Survey

4.7.1 Response rate

The study used both primary data and secondary data in analyzing its objectives. The secondary data was obtained from the published annual financial statements, from the annual reports. The primary data was obtained from questionnaires issued to the companies that were in the final sample.

A total of 22 questionnaires were issued to the companies which were listed for the entire period of study 2007 – 2017. Out of the 22 issued questionnaires only 14 were returned. Three of the questionnaires had incomplete information and were thus discarded when carrying

analysis of primary data. The remaining 11 questionnaires represents a 50%, response rate. A response rate was considered appropriate, (Babbie, 2013)

Table 4.13: Final sample response rate

Category of companies	Number of Questionnaires	Percent
Total number of questionnaires issued	22	100%
Less: Number incomplete data	3	14%
Number of companies not considered	8	36%
Total number of respondent in the final sample	11	50%

4.7.2 Main occupation of the respondents

The study expected the main respondents to be the one involved in the preparation and presentation of the financial statements. The main occupation of the respondents was thus the employees who work in the account and finance department of the targeted firms.

Table 4.14: Job titles of the respondents

Job title	Frequency	Percent
C.F.O	3	27%
Accountants	8	63%
Total	11	100%

This meant that the data obtained from the respondents can be relied upon since it come from employees directed involved in preparing the financial statements. The data can thus be taken as reliable triangulation of the secondary data

4.7.3 Managers perspective of working capital

The results from the questionnaires obtained from the respondents showed that 83% of the firms do consider working capital management decisions very seriously with only 17% being on the middle ground and none of the respondent indicated that working capital was not a prime firm's decision point.

The average payables days for all the firms was 45 days even though did contradict what was found the secondary data regression analysis that found that the average payables day was 128 days. This could be explained by the firm's having policies in place that are never followed.

A similar finding was made on the account collection period which was on average 45 days, however, the output from the regression analysis did have an average receivable collection period of 92 days. This could as a result of firms not following their credit collection policy strictly and lapse in debt collection procedures. Some did not have at all a working capital management policy implying that the was no guidelines those firms follows when managing working capital. Credit customers risk analysis is also carried among the firms with 76% of the firms having a credit customers risk assessment policies. Credit score, age of the business and use of referees were some of the credit worthiness assessment criteria. The debt collection procedures used by many of the firms was writing reminders, calling customers who are overdue and physically visiting them. None of the firm indicated the use court suits as an option of chasing overdue debts. But the biggest account receivables challenge was getting the customers to pay on time.

The inventory conversion period was on average 30 days, with the extreme of some firms having an inventory conversion period stretching to over a year, the agricultural based companies. All the firms had an inventory production schedule to produce on time and an inventory management policy. The economic order quantity was the prevalent inventory management model that was commonly used.

The finance of working capital was normally done from finances obtained from financial institutions, mainly from banks and development financial institutions., with most of the firms sourcing for external financing every two months. In cash management, the firms had a cash management policy and having elaborate cash control measures in place; cash being bank by security firms and direct banking for large lump sums.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the research findings discussions and interpretation, conclusions and recommendations. The objective of the study was to examine the influence of working capital management efficiency on the firm's economics; profitability, cash flow, market value and stock liquidity among firm's listed at the NSE.

A summary of the findings is presented in line the objectives. Finally, the limitations of the research, the research findings contribution to the body of knowledge and areas of possible further research are discussed.

5.2 Discussions of findings

The purpose of this study was to determine the economic consequences of working capital management efficiency. The findings of the study were determined by using both the primary and secondary data; primary data was obtained from the questionnaires issued to the employees of the NSE listed firms while the secondary data was obtained from the annual reports of those firms.

5.2.1 The firm's future financial performance

This study sought to determine the impact of working capital management on the firm's future performance. The objective was assessed through the analysis of descriptive data obtained from the OLS regression analysis from data obtained from the annual reports of the companies under study. This was supplemented from data obtained from the questionnaires issued to the managers of these companies.

The model had an adjusted $R^2 = 99.2\%$ and an F-value >10 which is significant ($p < .01$). For ROA models, the Durbin-Watson statistic ranged between 1.369 and 2.056 which indicated the absence of serial autocorrelation.

Account payable (p value =0.036) and inventory conversion period (p-value = 0.015) in model 4, were all statistically significant in the ROA model (model 5), (p values <0.1). Cash conversion cycle, $p=0.851$ and account receivables day, $p=0.286$ were statistically insignificant in explaining the company financial performance as measured by ROA. This was inconsistent with the findings of (Mathuva, 2010; Lazaridis & Tryfonidis, 2006).The inconsistency could

be partly be explained by the choice of profitability measures use; the study used ROA while (Mathuva, 2010) used net operating profit margin as measure of liquidity. Lazaridis and Tryfonidis (2006), used gross operating profit as their measure of liquidity.

The results from the regression analysis showed that there exists a negative relationship between the account payables and firm's profitability ($p = 0.000$). This result suggests that firms can improve their profitability by delaying paying their suppliers, thus this had to done cautiously. This finding was consistent with those of (Mathuva, 2010; Baños- Caballero, García- Teruel, & Martínez- Solano, 2010; Lazaridis & Tryfonidis, 2006).

The coefficient on board size (as measured by natural logarithm of board members) and firm size (as measured by natural logarithm of sales) were significant. The model showed that the return on assets increases with the board size ($p = 0.000$); the more the number of board members in a company the more profitable the company will be. On the other hand, an increase in firm size led to a decrease in the firm's profitability, as was showed by a negative beta coefficient of -0.09 . The account receivables days was statistically with a $p=0.286$

Inventory conversion period, as well, had a positive coefficient ($\beta = 0.017$); this meant the longer the firm takes to turn raw material into a finish good and make a sale, the greater is its possibility of it being a profitable firm.

However, account payable days had a negative coefficient, -0.036 . This meant an increase in the time taken by firms to pay their suppliers; the lower will be the firm's profitability. As such firms can increase their profits by paying their suppliers on time and promptly. The results were inconsistent with the findings of (Raheman & Nasr, 2007)

5.2.2 Working capital and Cash flow

The CFFO/TA model 5 had an adjusted R^2 0.393. This means that the CFFO/TA model 39.3% changes can be explained the determinants included in the model. The model had an F statistic values less than 5 which could mean that the model may not be significant in explaining the cash flow.

The account receivables day (p value = 0.000), the inventory conversion period (p value = 0.024) (model 2) and cash conversion cycle (p value = 0.000) in model 4, and account payable days ($p=0.093$) in model 5, were statistically significant. The cash conversion cycle (β coefficient $=-1.007$) (model 4) and receivables days (-0.000) model 5 both had a negative beta

coefficient, meaning an increase in these two variables causes a decrease in the firm's cash flow.

An increase in the days for credit collection from customers would mean a decrease in cash flow position, as the company is transferring its resources to their customers. A decrease in the cash conversion cycle would lead to an increase in the firm's cash flow position. This is true since a higher CCC means more cash being tied down in the working capital thus available cash is thus reduced.

On the other hand, the inventory conversion cycle had a positive beta coefficient ($\beta = 0.011$) meaning an increase in the inventory period leads to an increase in the firm's cash flow. The account payable period had a $p=0.093$ and a positive coefficient which meant it was statistically significant and increase in the number of days payable (delaying paying suppliers) results in an increase in the company's value.

5.2.3 Working capital and market value

The study also sought to determine whether the companies' efficiency in working capital management had any influence on those firms' market value. The results of the regression showed that the account receivables, account payable days and cash conversion cycle and the inventory conversion period were all significant in explaining the firm's market value.

The model had an adjusted R^2 of 31.6%, means that the model can explain 31.6% of changes in the firm's cash flow, a fairly good portion. However, the remaining 68.4 % can be explained by other factors not captured by the model. All the five models were not very statistically significant as shown by their F-values, ($F < 10$), when considered in totality.

The account receivables day ($p=0.068$), cash conversion period ($p=0.081$) and the inventory conversion period ($p=0.057$) were statistically significant in explaining the firm's value. The APP was not statistically significant ($p=0.4211$), p value > 0.1 .

The working capital management thus could be deemed to a significant contributor towards the firm's market value. This is because all the variables were statistically significant, the account payable period, however, was not statistically significant in explaining the firm's value.

5.2.4 Working capital and stock liquidity

The results of the regression models show that model had an adjusted $R^2 = 42$. This meant that 42.8% of stock liquidity could be explained account receivable management, inventory

management and account payable management. This could be explained by the inventory conversion period ($p=0.000$) and ARD ($p=0.035$) and cash conversion cycle ($p=0.099$) all being significant in explaining the firm's stock liquidity.

The ARD had a positive coefficient, $\beta=-0.12$ and -0.15 which implies an increase in collection period results to an increase in the stock liquidity. A similar finding was made on the cash conversion period ($\beta=0.597$) However, ICP had a negative coefficient, -0.608 . This means that a decrease in the ICP will lead to a higher stock liquidity. The account payable period was insignificant in explain the stock liquidity.

5.3 Conclusions

The study found that working capital has significant influence on the firm's financial performances. The management should see how they can be able to negotiate better terms with their suppliers and paying them when the accounts are due. They should maintain good terms with their suppliers by paying early and taking advantage of early settlements discounts that maybe the suppliers are offering. The management of receivables and cash conversion cycle leads to no incremental profits to firms and as such firm's should not overly commit their efforts there.

In relation to the firm's operating cash flows, all the working capital components that do influence the firm's cash flow. Firms should manage all their working capital components properly if they want to be able to generate cash from their operations; but more effort should be put into reducing the cash conversion cycles as they have a negative coefficient and a higher adjusted R^2 , model 4.

Firms can create value to their shareholders by reducing their account receivables collection period, increasing their effort to collect cash from their credit customers. They can also create more firms' value, through appropriate management of their inventory; the more they can get inventory investments, the more value they can create for their shareholders. Cash conversion cycle and inventory conversion period should also be reduced, if firms are to unlock the shareholder's wealth. The firm should thus concentrate more towards cash conversion cycle reduction, as model 4 (cash conversion) had the highest adjusted R^2 of 0.616.

Working capital management on account receivables, inventory and on cash conversion cycle can greatly enhance the firm's stock liquidity. The account payable, however, no significant impact on stock liquidity.

5.4 Contribution to Knowledge

The study did extend the empirical literature done in the developing economies like Kenya on the finance area of working capital. It hopes to help in advancing towards the development of a working capital theory. It hopes to achieve this in two ways; first the study did extend the research scope of the previous empirical research to other finance areas; market values, cash flow and stock liquidity, done which have not been given the required attention in the recent past studies. Secondly, it helps in validating the findings of the recent research papers done in the working capital management areas.

The study hopes to contribute towards the advancement policy setting by the market regulators like the Capital Market Authority. The threat of delisting of firms from the NSE will thus be guided from a more informed point of view, knowing clearly what are some of the red flags that the regulators should be constantly checking on the firms. This will help the regulator to achieve their core objectives of safeguarding the investment environment in the market. The study could have been one of the few researches done on working capital management and stock liquidity. It opens the door towards more researches to be done in future on that area.

The study on stock liquidity had little empirical literature to refer to during the study. The study has made way for other researchers on the area of stock liquidity and working capital. The researcher hopes that the future researchers can give the area the required focus it does require.

5.5 Recommendations

5.5.1 Recommendations for Policy

The study established that working capital management has a significant influence on the firm's profitability, with the firm's that have better working capital management technique experiences higher profitability. The study recommends to the regulator on strict guidelines to the listed companies they should adhere to in relation to their working capital management practices. Profitable companies will be an attraction to the investors in an economy.

Investors can also be making an assessment of firm's working capital practices before making an investment decision since working capital do influence the value of their investment.

5.5.2 Managerial Recommendations

The management can enhance the shareholders' value through efficient management of working capital. They can create value to the shareholders' by keeping their working capital at optimal; collecting credit due from customers on time and quickly. One of the way, they can

achieve this having a strict policies regarding cash collection from customers and refusing to deal with previous defaulters and they may go the extent of reporting the defaulters to the Credit Referencing Bureau (CRB). Converting the raw material to finished goods quickly can enhance their profitability. This could be achieved through the use of more advanced production technology. Firms in the agricultural sectors had the highest ICP; they can reduce this through the use of appropriate crop genotypes (Sakadevan & Nguyen, 2010). Delaying paying the suppliers can also enhance the firm's value and its profitability but caution should exercise not to hurt further relations with the suppliers.

5.6 Suggestions for Further Research

Further studies can be done on the stock liquidity and working capital adding more variables to assess the true variables that do influence the stock liquidity.

The study was carried out over a period of 2007 – 2017; a study over an extended period of time could enhance the models.

5.7 Limitations of the Research

The study also eliminated a number of firms. The study was carried out on non-financial and non-investment firms as well as all the firms that had been threatened by the Capital Market Authority of them being delisted due to their poor working capital management. This could have resulted to survivorship bias in the study.

The study did not consider the effects of financial constraints on the firms' working capital management efficiency. The inclusion of the financial constraints in the study could have helped in determine the extent of it in influence the firm's performance and its profitability.

The study also relied on the data mainly from annual financial statements, triangulated against data received from questionnaires issued to the managers of the listed companies. The primary data was not readily available, with some companies reluctant to fill them up. The data from the annual reports was also not readily available for some companies especially for the earlier (2007-2010) years of study.

Appendix 1: Recommendation Letter



Strathmore University

School of Graduate Studies

25 March 2019,

TO WHOM IT MAY CONCERN

ASSISTANCE IN DATA COLLECTION FOR MASTERS' STUDIES BY MAINA DOMINIC GACHIRA (STUDENT NO. 051233)

This is to confirm that the above named student is undertaking his Masters' Studies at Strathmore University.

He is conducting a research study entitled "*The Economic Consequences of Working Capital Management a Study of Manufacturing and Commercial Firms Listed at the Nairobi Securities Exchange*".

As part of his research, he needs to collect data from accounting/finance department employees of manufacturing companies listed at the Nairobi Stock Exchange. The student will ensure that all data and information he collects is treated with utmost confidentiality and only used for academic purposes.

Any assistance accorded to him will be highly appreciated.

Sincerely,

A handwritten signature in blue ink that reads 'Ruth Kiraka'.

Prof. Ruth Kiraka
Dean
School of Graduate Studies

Appendix 2: Questionnaire

Part A: General Information

1. : Name of the company

2. Position held at the firm

3. Length of experience in this position

less than 1 year

Between 1-5 years

Between 5 -10 years

Over 10 years

4. What professional and academic qualifications do you hold?

PART B: WORKING CAPITAL MANAGEMENT PRACTICES

(The purpose of this section is to examine the working capital management practices that are employed by the Manufacturing firms in Kenya)

1.

	1	2	3
	Least important	Important	Very important
How important is working capital management to your firm?			

2. what is your average payment period (creditors)?

less than 30 days

31 – 60 days

61 – 90 days

- 91-120 days
- Greater than 120 days

3. what is your average collection period (debtors)?

- less than 30 days
- 31 – 60 days
- 61 – 90 days
- 91-120 days
- Greater than 120 days

4. How long does the firm take to sell its inventory?

- less than 30 days
- 31 – 60 days
- 61 – 90 days
- 91-120 days
- Greater than 120 days

5. Do have a policy document that dictates how working capital should be managed in the firm? YES

No

6. If a working capital policy documentation exists, how often is it reviewed?

- Monthly
- Quartely
- Yearly
- It has never been reviewed.

7. Is there a risk analysis done on customers done before extending credit to them?

YES No

8. What are some of those factors you consider in assessing the customer's credit worthiness?

1	
2	
3	

9. What credit collection procedures do you use on overdue accounts?

1	
2	
3	

10. Do you have a production scheduling at your firm? **YES** [] **No** []

11. Do you firm have an inventory management policy? **YES** [] **No** []

12. Which inventory management method do you firm use?

1. Economic Order Quantity (EOQ)	
2. Safety stock method	
3. Anticipation of demand	

Any other:

Part C: Financing working capital and Cash Management

1. Have you experienced working capital shortages? **YES** [] **No** []

2. If yes, how did you firm find a solution?

1	
2	

3. How often (within a time span of 6 months) do your firm source for external financing from the following sources?

	1	2	3
	Rarely	Often	Very often
Bank overdraft			
Long term loan			

Any other source (specify)			
-------------------------------	--	--	--

4. Do you have any challenges in obtaining the above credit?

YES [] **No** []

5. What were the challenges?

1	
2	
3	

6. Do you have a cash management policy? **YES** [] **No** []

7. If yes, what are the factors that you firm use to determine the cash balances?

1	
2	
3	

8. Is a person responsible for cash management and what is their title in the firm?

YES [] **No** []

--

9. In one paragraph summarize the challenges that you face when it comes to working capital management?

.....

.....

.....

C3: To what extent does your firm employ any of the following working capital management tools?

	1	2	3
	Never	Sometimes	Always
Cash budgeting			

Negotiating credit terms with suppliers			
Maintaining buffer inventory			
Invoice discounting and financing			
Setting credit limits			
Aggressive credit collection			
Aging of debtors			
Extending credit payments to buyers			
Any other (specify)			

Part D: Measuring operational performance

Which ratio does the firm employ when measuring its operational performance?

- Gross profit
- Net operating profit
- Return on assets

Any other ratio? (specify)

.....

.....

...

Part E:

Any other information you would want to share on working capital management and profitability in your firm?

.....

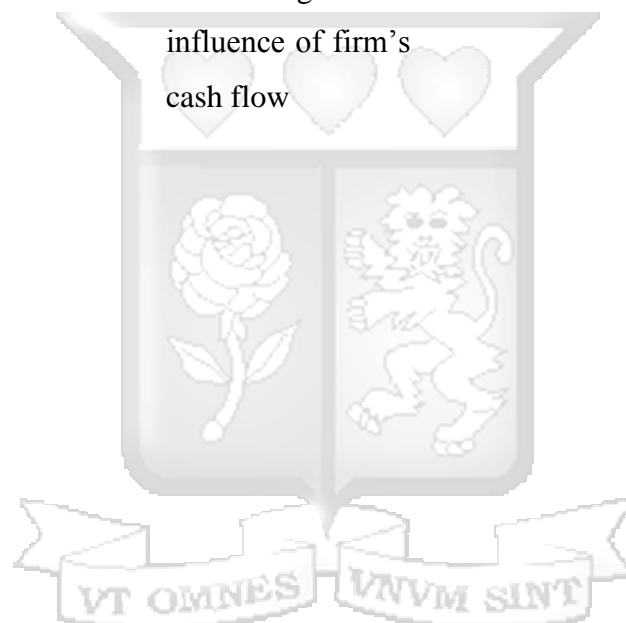
Thank you for your time.

God Bless You.

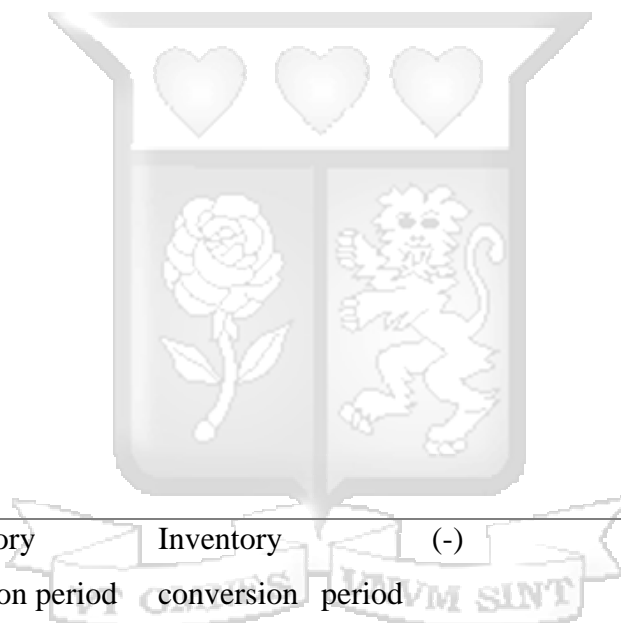
Appendix 3: Hypothesis testing

Objective	Variable	Hypothesis	Predicted sign	Regression results	Status of the hypothesis
Objective 1: To establish the influence of working capital management efficiency on firm's financial performance	1. Account receivables days	Account receivable days has a significant influence of firm's financial performance	(+)	NS	H ₀ not supported
	2. Inventory conversion period	Inventory conversion period has a significant influence of firm's financial performance	(-)	(-)*	H ₀ supported
	3. Account payable period	Account payable days has a significant influence of firm's financial performance	(-)	(-)*	H ₀ supported

	4.cash conversion period	Cash conversion cycle has a significant influence of firm's financial performance	(-)	NS	H ₀ not supported
Objective	Variable	Hypothesis	Predicted sign	Regression results	Status of the hypothesis
Objective 2: To establish the influence of working capital management efficiency on firm's cash flow	1. Account receivables days	Account receivable days has a significant influence of firm's cash flow	(-)	-	H ₀ supported
	2.Inventory conversion period	Inventory conversion period has a significant influence of firm's cash flow	(-)	+*	H ₀ supported
	3.Account payable period	Account payable days has a significant influence of firm's cash flow	(+)	NS	H ₀ not supported



	4.cash conversion period	Cash conversion cycle has a significant influence on firm's cash flow	(-)	-*	H ₀ supported
Objective 3: To establish the influence of working capital management efficiency on firm's market value	1. Account receivables days	Account receivable days has a significant influence of firm's market value	(-)	-*	H ₀ supports
	2.Inventory conversion period	Inventory conversion period has a significant negative influence of firm's market value	(-)	+	H ₀ supports
	3.Account payable period	Account payable days has a significant influence of firm's market value	(+)	NS	H ₀ not supports
	4.cash conversion period	Cash conversion cycle has a	(-)	NS	H ₀ not supports



			significant influence on firm's market value			
Objective 4: To establish the influence of working capital management efficiency on firm's stock liquidity	1. Account receivables days	Account receivable days has a significant influence of firm's stock liquidity	(-)	+		H ₀ supported
	2. Inventory conversion period	Inventory conversion period has a significant influence of firm's liquidity	(-)	-*		H ₀ supports
	3. Account payable period	Account payable days has a significant influence of firm's stock liquidity	(+)	NS		H ₀ not supports
	4. cash conversion period	Cash conversion cycle has a significant influence on firm's stock liquidity	(-)	NS		H ₀ not supports

*-Significant at the 0.1 level, NS- not significant



References

- Acemoglu, D., Johnson, S., Robinson, J., & Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: volatility, crises and growth. *Journal of Monetary Economics*, 50(1), 49–123. [https://doi.org/10.1016/S0304-3932\(02\)00208-8](https://doi.org/10.1016/S0304-3932(02)00208-8)
- Ademola, O. J. (2014). Working Capital Management and Profitability of Selected Quoted Food and Beverages Manufacturing Firms in Nigeria. *European Journal of Accounting Auditing and Finance Research*, 2(3), 12.
- Afrifa, G. A., & Padachi, K. (2016). Working capital level influence on SME profitability. *Journal of Small Business and Enterprise Development*, 23(1), 44–63. <https://doi.org/10.1108/JSBED-01-2014-0014>
- Afza, T., & Nazir, M. S. (2007). *Is it Better to be Agressive or Conservative in Managing Working Capital?* 12.
- Amadeo, K. (2018). Gross Domestic Product: Understanding What a Country Produces. Retrieved December 14, 2018, from The Balance website: <https://www.thebalance.com/what-is-gdp-definition-of-gross-domestic-product-3306038>
- Anser, R., & Malik, A. (2013). Cash Conversion Cycle and Firms' Profitability – A Study of Listed Manufacturing Companies of Pakistan. *IOSR Journal of Business and Management*, 8(2), 83–87. <https://doi.org/10.9790/487X-0828387>
- Anyanzwa, J. (2018, June). Troubled NSE-listed firms now put on watchlist, risk suspension from trading. Retrieved March 22, 2019, from AFRICAN MARKETS website: <https://www.african-markets.com/en/stock-markets/nse/troubled-nse-listed-firms-now-put-on-watchlist-risk-suspension-from-trading>
- Anyanzwa, J. (2019, March). Troubled firms risk being delisted from NSE. Retrieved March 22, 2019, from The East African website: <https://www.theeastafrican.co.ke/business/Troubled-firms-risk-being-delisted-from-NSE/2560-4817044-t5912r/index.html>
- Arnold, G. (2013). *Corporate financial management* (5. ed). Harlow: Pearson.
- Auken, H. E. V., & Neeley, L. (1996). Evidence of Bootstrap Financing among Small Start-Up Firms. *The Journal of Entrepreneurial Finance*, 5(3), 16.
- Babbie, E. (2013). *The Basics of Social Research*. Wadsworth: Cengage Learnin.
- Balance Scorecard Institute. (2018). What is the Balanced Scorecard? Retrieved December 10, 2018, from <https://www.balancedscorecard.org/BSC-Basics/About-the-Balanced-Scorecard>

- Baños- Caballero, S., García- Teruel, P. J., & Martínez- Solano, P. (2010). Working capital management in SMEs. *Accounting & Finance*, 50(3), 511–527. <https://doi.org/10.1111/j.1467-629X.2009.00331.x>
- Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009a). Why Do U.S. Firms Hold So Much More Cash than They Used To? *The Journal of Finance*, 64(5), 1985–2021. <https://doi.org/10.1111/j.1540-6261.2009.01492.x>
- Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009b). Why Do U.S. Firms Hold So Much More Cash than They Used To? *The Journal of Finance*, 64(5), 1985–2021. <https://doi.org/10.1111/j.1540-6261.2009.01492.x>
- Baumol, W. J. (1952). The Transactions Demand for Cash: An Inventory Theoretic Approach. *The Quarterly Journal of Economics*, 66(4), 545–556. <https://doi.org/10.2307/1882104>
- Becker- Blease, J. R., & Paul, D. L. (2006). Stock Liquidity and Investment Opportunities: Evidence from Index Additions. *Financial Management*, 35(3), 35–51. <https://doi.org/10.1111/j.1755-053X.2006.tb00146.x>
- Chang, H.-J., & Dye, C.-Y. (1999). An EOQ model for deteriorating items with time varying demand and partial backlogging. *Journal of the Operational Research Society*, 50(11), 1176–1182. <https://doi.org/10.1057/palgrave.jors.2600801>
- Chauhan, G. S., & Banerjee, P. (2017). Financial constraints and optimal working capital – evidence from an emerging market. *International Journal of Managerial Finance*, 14(1), 37–53. <https://doi.org/10.1108/IJMF-07-2016-0131>
- Chen, N. (2009). *Corporate Liquidity in Emerging Markets: A Retrospect of Asian Financial Crisis* (SSRN Scholarly Paper No. ID 1594625). Retrieved from Social Science Research Network website: <https://papers.ssrn.com/abstract=1594625>
- Choi, J. Y., Salandro, D., & Shastri, K. (1988). On the Estimation of Bid-Ask Spreads: Theory and Evidence. *Journal of Financial and Quantitative Analysis*, 23(2), 219–230. <https://doi.org/10.2307/2330882>
- Chung, K. H., & Pruitt, S. W. (1994). A Simple Approximation of Tobin's q. *Financial Management*, 23(3), 70–74. <https://doi.org/10.2307/3665623>
- Cleary, S. (1999). The Relationship between Firm Investment and Financial Status. *The Journal of Finance*, 54(2), 673–692. <https://doi.org/10.1111/0022-1082.00121>
- Cooper, K. S., Groth, J. C., & Avera, W. E. (1985). Liquidity, exchange listing, and common stock performance. *Journal of Economics and Business*, 37(1), 19–33. [https://doi.org/10.1016/0148-6195\(85\)90003-7](https://doi.org/10.1016/0148-6195(85)90003-7)
- Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms?

- Journal of Business Finance & Accounting*, 30(3–4), 573–588.
<https://doi.org/10.1111/1468-5957.00008>
- Ding, S., Guariglia, A., & Knight, J. (2013). Investment and financing constraints in China: Does working capital management make a difference? *Journal of Banking & Finance*, 37(5), 1490–1507. <https://doi.org/10.1016/j.jbankfin.2012.03.025>
- Eckbo, B. E. (2011). *Handbook of Empirical Corporate Finance: Empirical Corporate Finance*. Elsevier.
- Eljelly, A. M. A. (2004). Liquidity - profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48–61. <https://doi.org/10.1108/10569210480000179>
- 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(3), 73–84. <https://doi.org/10.3923/rjbm.2009.73.84>
- Fama, E. F., & French, K. R. (1998). Taxes, Financing Decisions, and Firm Value. *The Journal of Finance*, 53(3), 819–843. <https://doi.org/10.1111/0022-1082.00036>
- Fang, V. W., Tian, X., & Tice, S. (2014). Does Stock Liquidity Enhance or Impede Firm Innovation? *The Journal of Finance*, 69(5), 2085–2125. <https://doi.org/10.1111/jofi.12187>
- Faulkender, M., & Wang, R. (2006). Corporate Financial Policy and the Value of Cash. *The Journal of Finance*, 61(4), 1957–1990. <https://doi.org/10.1111/j.1540-6261.2006.00894.x>
- Fazzari, S. M., Hubbard, R. G., Petersen, B. C., Blinder, A. S., & Poterba, J. M. (1988). Financing Constraints and Corporate Investment. *Brookings Papers on Economic Activity*, 1988(1), 141–206. <https://doi.org/10.2307/2534426>
- Fazzari, S., & Petersen, B. (1993). Working capital and fixed investment: new evidence on financing constraints. *RAND Journal of Economics*, 24(3), 328–342.
- Fazzari, Steven, Hubbard, G. R., & Petersen, B. C. (1987). Financing Constraints and Corporate Investments. *Working Paper No. 2387*, 2387. Cambridge, MA 02138: NATIONAL BUREAU OF ECONOMIC RESEARCH.
- Financial Times. (2018). Tobin’s Q Ratio Definition from Financial Times Lexicon. Retrieved December 10, 2018, from <http://lexicon.ft.com/Term?term=Tobin%27s-q-ratio>
 website: <http://lexicon.ft.com/Term?term=Tobin%27s-q-ratio>
- Gama, P. M., & Pais, M. A. (2015). Working capital management and SMEs profitability:

- Portuguese evidence. *International Journal of Managerial Finance*, 11(3), 341–358.
<https://doi.org/10.1108/IJMF-11-2014-0170>
- Ganesan, V. (2007). Analysis of Working Capital Management Efficiency in Telecommunication Equipment Industry. *Rivier Academic Journal*, 3(2), 10.
- García- Teruel, P., & Martínez- Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, 3(2), 164–177.
<https://doi.org/10.1108/17439130710738718>
- Gentry, J. A., Vaidyanathan, R., & Lee, H. W. (1990). A Weighted Cash Conversion Cycle. *Financial Management*, 19(1), 90–99. <https://doi.org/10.2307/3666040>
- Gertler, M. (1988). Financial Structure and Aggregate Economic Activity: An Overview. *Journal of Money, Credit and Banking*, 20(3), 559–588.
- Ghalayini, A. M., & Noble, J. S. (1996). The changing basis of performance measurement. *International Journal of Operations & Production Management*, 16(8), 63–80.
<https://doi.org/10.1108/01443579610125787>
- Gill, A., & Biger, N. (2013). The impact of corporate governance on working capital management efficiency of American manufacturing firms. *Managerial Finance*, 39(2), 116–132. <https://doi.org/10.1108/03074351311293981>
- Gill, A., Biger, N., & Mathur, N. (2010). *The Relationship Between Working Capital Management And Profitability: Evidence From The United States*. 9.
- Gill, A., & Mathur, N. (2011). The Impact of Board Size, CEO Duality, and Corporate Liquidity on the Profitability of Canadian Service Firms. *Journal of Applied Finance & Banking*, 1(3), 13.
- Gitman, L. J., & Goodwin, M. D. (1979). An Assessment of Marketable Securities Management Practices. *Journal of Financial Research*, 2(2), 161–169.
<https://doi.org/10.1111/j.1475-6803.1979.tb00028.x>
- Glosten, L. R., & Harris, L. (1988). *Estimating the Components of the Bid/Ask Spread*. *Journal of Financial Economics*(21), 20.
- Graham, M. H. (2003). Confronting multicollinearity in ecological multiple regression. *Ecology*, 84(11), 2809–2815. <https://doi.org/10.1890/02-3114>
- Greenwald, Bruce, Joseph, E., Stiglitz, & Weiss, A. (1984). Informational Imperfections in the Capital Market and Macroeconomic Fluctuations. *American Economic Review*, 74, 194–200.
- Harford, J., Mansi, S. A., & Maxwell, W. F. (2008). Corporate governance and firm cash holdings in the US. *Journal of Financial Economics*, 87(3), 535–555.

<https://doi.org/10.1016/j.jfineco.2007.04.002>

- Harris, L. (1990). Statistical Properties of the Roll Serial Covariance Bid/Ask Spread Estimator. *The Journal of Finance*, 45(2), 579–590. <https://doi.org/10.1111/j.1540-6261.1990.tb03704.x>
- Heikal, M., Khaddafi, M., & Ummah, A. (2014). Influence Analysis of Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), Debt To Equity Ratio (DER), and current ratio (CR), Against Corporate Profit Growth In Automotive In Indonesia Stock Exchange. *International Journal of Academic Research in Business and Social Sciences*, 4(12). <https://doi.org/10.6007/IJARBSS/v4-i12/1331>
- Hill, C. W. L. (1990). Cooperation, Opportunism, and the Invisible Hand: Implications for Transaction Cost Theory. *Academy of Management Review*, 15(3), 500–513. <https://doi.org/10.5465/amr.1990.4309111>
- Hill, M. D., Kelly, G. W., & Highfield, M. J. (2010). Net Operating Working Capital Behavior: A First Look. *Financial Management*, 39(2), 783–805. <https://doi.org/10.1111/j.1755-053X.2010.01092.x>
- Huang, R. D., & Stoll, H. R. (1997). The Components of the Bid-Ask Spread: A General Approach. *The Review of Financial Studies*, 10(4), 995–1034. <https://doi.org/10.1093/rfs/10.4.995>
- Investopedia, I. (2018). Q Ratio (Tobin's Q Ratio). Retrieved December 10, 2018, from Investopedia website: <https://www.investopedia.com/terms/q/qratio.asp>
- Isshaq, Z., Bokpin, G. A., & Mensah Onumah, J. (2009). Corporate governance, ownership structure, cash holdings, and firm value on the Ghana Stock Exchange. *The Journal of Risk Finance*, 10(5), 488–499. <https://doi.org/10.1108/15265940911001394>
- Jarvis, R., Kitching, J., & Lightfoot, G. (1996). The Financial Management of Small Firms: An Alternative Perspective. *ACCA Research Report*, 49.
- Kalcheva, I., & Lins, K. V. (2007). International Evidence on Cash Holdings and Expected Managerial Agency Problems. *The Review of Financial Studies*, 20(4), 1087–1112. <https://doi.org/10.1093/rfs/hhm023>
- Kang, M., Khaksari, S., & Nam, K. (2018). Corporate investment, short-term return reversal, and stock liquidity. *Journal of Financial Markets*, 39, 68–83. <https://doi.org/10.1016/j.finmar.2018.02.001>
- Kaplan, R. S., & Norton, D. P. (1996). Using the Balanced Scorecard as a Strategic Management System. *Harvard Business Review*, 14.
- Kenton, W. (2018). Gross Domestic Product - GDP. Retrieved December 14, 2018, from

- Investopedia website: <https://www.investopedia.com/terms/g/gdp.asp>
- Keynes, J. M. (1937). The General Theory of Employment. *The Quarterly Journal of Economics*, 51(2), 209. <https://doi.org/10.2307/1882087>
- Keynes, J. M. (n.d.). General Theory of Employment | The Quarterly Journal of Economics | Oxford Academic. Retrieved May 31, 2019, from <https://academic.oup.com/qje/article-abstract/51/2/209/1939387>
- Kiptum, B. (2018, March). SMEs battle for survival in late payments crisis. Retrieved December 7, 2018, from Business Daily website: <https://www.businessdailyafrica.com/corporate/SMEs-battle-for-survival-in-late-payments-crisis/539550-4343372-r89q3pz/index.html>
- Kothare, M. (1997). The effects of equity issues on ownership structure and stock liquidity: A comparison of rights and public offerings. *Journal of Financial Economics*, 43(1), 131–148. [https://doi.org/10.1016/S0304-405X\(96\)00892-6](https://doi.org/10.1016/S0304-405X(96)00892-6)
- Lazaridis, I., & Tryfonidis, D. (2006). *Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange* (SSRN Scholarly Paper No. ID 931591). Retrieved from Social Science Research Network website: <https://papers.ssrn.com/abstract=931591>
- Le, B. (2019). Working capital management and firm's valuation, profitability and risk: Evidence from a developing market. *International Journal of Managerial Finance*, 15(2), 191–204. <https://doi.org/10.1108/IJMF-01-2018-0012>
- Liquidity Preference Theory. (2018, February 14). Retrieved May 31, 2019, from Intelligent Economist website: <https://www.intelligenteconomist.com/liquidity-preference-theory/>
- Listed Companies - Nairobi Securities Exchange (NSE). (2018). Retrieved November 28, 2018, from <https://www.nse.co.ke/listed-companies/list.html?start=50>
- Listed Companies - Nairobi Securities Exchange (NSE). (n.d.). Retrieved from <https://www.nse.co.ke/listed-companies/list.html?start=50>
- Luo, Q., & Hachiya, T. (2005). Corporate Governance, Cash Holdings, and Firm Value: Evidence from Japan. *Review of Pacific Basin Financial Markets and Policies*, 08(04), 613–636. <https://doi.org/10.1142/S0219091505000580>
- Mathuva, D. (2010). The Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenyan Listed Firms. *Research Journal of Business Management*, 4(1), 1–11.
- McLaney, E. J. (2003). *Business finance: theory and practice* (6. ed). London [u.a]: Pearson

Education.

- Megna, P., & Klock, M. (1993). The Impact of Intangible Capital on Tobin's q in the Semiconductor Industry. *The American Economic Review*, 83(2), 265–269.
- Miller, M. H., & Orr, D. (1966). A Model of the Demand for Money by Firms. *The Quarterly Journal of Economics*, 80(3), 413. <https://doi.org/10.2307/1880728>
- Mohamed, A. (2015). Blueprint to revive industrial, manufacturing sectors - Capital Business. Retrieved December 19, 2018, from CapitalFM website: <https://www.capitalfm.co.ke/business/2015/09/blueprint-to-revive-industrial-manufacturing-sectors/>
- Muchina, S., & Kiano, E. (2011). *International Business Management*, 5(5), 279–286.
- Myers, S. C. (1984). The Capital Structure Puzzle. *The Journal of Finance*, 39(3), 574–592. <https://doi.org/10.1111/j.1540-6261.1984.tb03646.x>
- Nairobi Securities Exchange. (2018). Nairobi Securities Exchange - NSE Kenya. Retrieved December 11, 2018, from <https://www.nse.co.ke/>
- Nairobi Securities Exchange - NSE Kenya. (n.d.). Retrieved from <https://www.nse.co.ke/>
- Nazir, M. S., & Afza, T. (2009). *Impact of Aggressive Working Capital Management Policy on Firms' Profitability*. 15(8), 14.
- Niskanen, J., & Niskanen, M. (2006). The Determinants of Corporate Trade Credit Policies in a Bank-dominated Financial Environment: the Case of Finnish Small Firms. *European Financial Management*, 12(1), 81–102. <https://doi.org/10.1111/j.1354-7798.2006.00311.x>
- Öhman, P., & Yazdanfar, D. (2014). The impact of cash conversion cycle on firm profitability: An empirical study based on Swedish data. *International Journal of Managerial Finance*, 10(4), 442–452. <https://doi.org/10.1108/IJMF-12-2013-0137>
- Oseifuah, E. K., & Gyekye, A. (2017). Cash Conversion Cycle Theory and Corporate Profitability: Evidence from Non-Financial Firms Listed on the Johannesburg Stock Exchange. *The Journal of Accounting and Management*, 6(3). Retrieved from <http://www.journals.univ-danubius.ro/index.php/jam/article/view/3814>
- Owele, M. L. (2013). Working capital management approaches and the financial performance of agricultural companies listed at the Nairobi securities exchange. *University of Nairobi Repository*, 68.
- 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), 15.

- Pandey, A. (n.d.). *A cash conversion cycle approach on Working Capital Management of firm*. Retrieved from https://www.academia.edu/1951294/A_cash_conversion_cycle_approach_on_Working_Capital_Management_of_firm
- Petersen, M. A., & Schoeman, D. I. (2008). *Modeling of Banking Profit via Return-on-Assets and Return-on-Equity*. 6.
- Pinkowitz, L., Stulz, R., & Williamson, R. (2006). Does the Contribution of Corporate Cash Holdings and Dividends to Firm Value Depend on Governance? A Cross-country Analysis. *The Journal of Finance*, 61(6), 2725–2751. <https://doi.org/10.1111/j.1540-6261.2006.01003.x>
- Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). *Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan*. (47), 14.
- Raheman, A., & Nasr, M. (2007). Working Capital Management And Profitability – Case Of Pakistani Firms. *International Review of Business Research Papers*, 3(1), 22.
- Richards, W. G., Clarkson, R., & Ganellin, C. R. (1975). Molecule--receptor specificity. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 272(915), 75–85. <https://doi.org/10.1098/rstb.1975.0071>
- Robins, J. A. (1987). Organizational Economics: Notes on the Use of Transaction-Cost Theory in the Study of Organizations. *Administrative Science Quarterly*, 32(1), 68–86. <https://doi.org/10.2307/2392743>
- Roll, R. (1984). A Simple Implicit Measure of the Effective Bid-Ask Spread in an Efficient Market. *The Journal of Finance*, 39(4), 1127–1139. <https://doi.org/10.1111/j.1540-6261.1984.tb03897.x>
- Roychowdhury, S. (2003). *Management of earnings through the manipulation of real activities that affect cash flow from operations*. Working paper, Sloan School of Management, MIT. Sloan School of Management MIT.
- Sakadevan, K., & Nguyen, M.-L. (2010). Chapter two - Extent, Impact, and Response to Soil and Water Salinity in Arid and Semiarid Regions. In D. L. Sparks (Ed.), *Advances in Agronomy* (Vol. 109, pp. 55–74). <https://doi.org/10.1016/B978-0-12-385040-9.00002-5>
- Samiloglu, F., & Demirgunes, K. (2008). The Effect of Working Capital Management on Firm Profitability: Evidence from Turkey. *The International Journal of Applied Economics and Finance*, 2(1), 44–50. <https://doi.org/10.3923/ijaef.2008.44.50>
- Sarin, A., Shastri, K., & Shastri, K. (1996). *Ownership Structure and Stock Market Liquidity*

- (SSRN Scholarly Paper No. ID 2652). Retrieved from Social Science Research Network website: <https://papers.ssrn.com/abstract=2652>
- Schneier, C. E., Shaw, D. G., Beatty, R. W., & Baird, L. S. (1995). *Performance Measurement, Management, and Appraisal Sourcebook*. Human Resource Development.
- 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. <https://doi.org/10.1177/097215091001200110>
- Shoham, A. (1998). Export Performance: A Conceptualization and Empirical Assessment. *Journal of International Marketing*, 6(3), 59–81. Retrieved from JSTOR.
- Simmons, J. e. l., Wongrassamee, S., & Gardiner, P. d. (2003). Performance measurement tools: the Balanced Scorecard and the EFQM Excellence Model. *Measuring Business Excellence*, 7(1), 14–29. <https://doi.org/10.1108/13683040310466690>
- Simpson, W. G., & Kohers, T. (2002). The Link Between Corporate Social and Financial Performance: Evidence from the Banking Industry. *Journal of Business Ethics*, 13.
- Solano, P., & García, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, 3(2), 164–177. <https://doi.org/10.1108/17439130710738718>
- State Department for Trade. (2017). *Study on Kenya Retail Sector Prompt Payment*. Retrieved from MINISTRY OF INDUSTRY, TRADE AND COOPERATIVES website: http://www.trade.go.ke/sites/default/files/Study%20on%20Kenya%20Retail%20Trade%20Sector%20Prompt%20Payment%2C%20June%202017_0.pdf
- Stiglitz, J. E., & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *American Economic Review*, 71, 393–410.
- Stoll, H. R. (1989). Inferring the Components of the Bid- Ask Spread: Theory and Empirical Tests. *The Journal of Finance*, 44(1), 115–134. <https://doi.org/10.1111/j.1540-6261.1989.tb02407.x>
- Summers, B., & Wilson, N. (2000). Trade Credit Management and the Decision to Use Factoring: An Empirical Study. *Journal of Business Finance & Accounting*, 27(1–2), 37–68. <https://doi.org/10.1111/1468-5957.00305>
- Tobin, J. (1958). Liquidity Preference as Behavior Towards Risk. *The Review of Economic Studies*, 25(2), 65–86. <https://doi.org/10.2307/2296205>
- Tong, G., & Green, C. J. (2005). Pecking order or trade-off hypothesis? Evidence on the capital structure of Chinese companies. *Applied Economics*, 37(19), 2179–2189. <https://doi.org/10.1080/00036840500319873>

- Tripathi, N. N., & Ahamed, N. (2017). Time Taken to Reach the Performance Summit: Nature of Relation between Working Capital Management and Firm Performance in the Indian Context. *International Journal of Economics and Financial Issues*, 7(4), 530–536.
- Uyar, A. (2009). *The Relationship of Cash Conversion Cycle with Firm Size and Profitability: An Empirical Investigation in Turkey*. (24), 9.
- Walker, D. A. (1991). An Empirical Analysis of Financing the Small Firm. In R. Yazdipour (Ed.), *Advances in Small Business Finance* (pp. 47–61). https://doi.org/10.1007/978-94-011-3462-0_4
- Wang, Y.-J. (2002). Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, 12(2), 159–169. [https://doi.org/10.1016/S1042-444X\(01\)00047-0](https://doi.org/10.1016/S1042-444X(01)00047-0)
- Wasiuzzaman, S. (2015a). Working capital and firm value in an emerging market. *International Journal of Managerial Finance*, 11(1), 60–79. <https://doi.org/10.1108/IJMF-01-2013-0016>
- Wasiuzzaman, S. (2015b). Working Capital and Profitability in Manufacturing Firms in Malaysia: An Empirical Study. *Global Business Review*, 16(4), 545–556. <https://doi.org/10.1177/0972150915581098>
- Wernerfelt, B., & Montgomery, C. A. (1988). Tobin's q and the Importance of Focus in Firm Performance. *The American Economic Review*, 78(1), 246–250.
- Williamson, O. E. (1979). Transaction-Cost Economics: The Governance of Contractual Relations. *The Journal of Law and Economics*, 22(2), 233–261. <https://doi.org/10.1086/466942>
- Williamson, O. E. (1998). Transaction Cost Economics: How It Works; Where It is Headed. *De Economist*, 146(1), 23–58. <https://doi.org/10.1023/A:1003263908567>
- Wolfe, J., & Sauaia, A. C. A. (2003). *The Tobin Q as a Company Performance Indicator*. 30, 5.