TO INVESTIGATE THE EFECTS OF WORKING CAPITAL MANAGEMENT ON CORPORATE PROFITABILITY AMONG FIRMS LISTED AT NAIROBI SECURITES EXCHANGE

By

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DECLARATION

This research project is my original work and has not been presented for a degree award in any other University.

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Martin Thiuru Murega

D61/60425/2011

This research project has been submitted with my approval as the university Supervisor.

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Dedication

I dedicate this work to my dear mother and my wife for the unwavering support and dedication. To Jayden for the joy and happiness that has seen me through.

Abstract

To overcome competition in a very complex environment, few companies have been able to use the optimization of working capital as a real competitive advantage to leverage profit motivated the study with the objective of identifying the variables that most affect profitability through investigating the impact of working Capital Management on firms' performance for non-financial institutions listed in Nairobi Securities Exchange (NSE) for the seven year from 2005 to 2011. The profitability was measured in two different ways: return on sales (ROS) and on asset (ROA). The independent variables used are cash conversion cycle, days of accounts payable, day's receivable and day's inventory. The results were obtained using Correlation Analysis for identifying the relationship between working capital management and firms' performance. Multiple linear regressions has identified that in terms of ROS and ROTA are concerned, to manage working capital properly is relevant. From ANOVA it is evident that days inventory has negative relationship with ROS and ROTA. Days of accounts payable as the variable that influences ROS (positive relationship). These results show that managing working capital properly is important. Moreover, managing inventory as well as cash conversion cycle to an optimum level will yield more profit.

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Abbreviations and Acronyms

ACP Average Collection Period

AIMS Alternative Investment Market Segment

APP Average Payment Period

CCC Cash Conversion Cycle

CMA Capital Markets Authority

CR Current Ratio

DR Debt Ratio

FATA Fixed Financial Assets Ratio

GOP Gross Operating Profit

lTD Inventory Turnover in Days

JSE Johannesburg Stock Exchange

LOS Natural Logarithm of Sales

MIMS Main Investment Market Segment

NSE Nairobi Stock Exchange

NTC Net Trading Cycle

OLS Ordinary Least Squares

ROI Return on Investment

SPSS Statistical Package for Social Sciences

WCM Working Capital Management

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the company. Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004). Financial managers' time and efforts is consumed by identifying the non-optimal levels of current assets and liabilities and bringing them to optimal level, balancing between risk and efficiency requiring continuous monitoring to maintain the optimum level of receivables, inventory and payables is substantially essential (Lamberson, 1995). Working Capital Management is a very sensitive area in the field of financial management that involves the decision of the amount and composition of current assets and the financing of these assets. Current assets include all those assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need (Soenen, 1993). Reducing inventory, payables, and receivables costs requires long-term operational changes that produce permanent cost improvements and thus improve profit.

According to Smith (1980), the importance of the working capital arises from its impact on the profitability and risk level which in turn affects the value of the firm. Managing working capital is crucial for the financial health of the business, liquidity

and overall performance while at same time preserving the liquidity position to meets obligations as and when they fall due. The twin goals of profitability and liquidity are often in conflict and the tradeoff between profit maximization and liquidity effects on firms' profitability, risk and overall value. Shin & Soenen (1998) concurs that working capital management has significant impact on both liquidity and profitability of the firm. The problem statement to be analysed is whether efficient working capital affects corporate profitability.

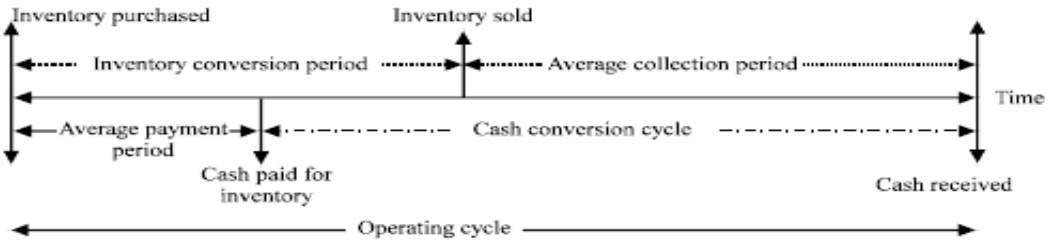
1.1.1 Concepts of Working Capital

Lamberson (1995) defines Gross Working Capital as amounts invested in current assets to meet current operations; Net Working Capital as the excess of current assets over current liabilities and provisions. Current Assets include inventories, debtors, bills receivables, cash and bank balances, short term investments and prepaid expenses. Current Liabilities include creditors, bills payable, and creditors, tax provision and liabilities payable within a year. Permanent working capital or fixed working capital is the minimum amount of investment required in current assets at all times to carry on the day-to-day operation. Temporary working capital or variable working capital or fluctuating working capital is the working capital that varies depending on the seasonal and cyclical changes in demands for a firm's products.

According to Brigham & Davis (2010) working capital management can be measured using cash conversion cycle (CCC) which is the time span between the expenditure for the purchases of raw materials and the collection of sales of finished goods focusing on the length of time taken from when payments are made and cash inflows are received. Components of CCC include inventory conversion period (ICP),

receivable collection period (RCP) and payable deferral period (PDF). ICP is the average time required to convert material into finished goods and sold. RCP is the day's outstanding sale, the average number of days it takes to collect cash from accounts receivable computed by dividing accounts receivable by sales per day. PDF is the number of days from when purchases are made and payments effected. Cash conversion cycle is sum of inventory conversion period plus receivable collection period less payable deferral period as indicated by figure 1.1 below. The principle should be to shorten the CCC without hurting the operations by reducing ICP, RCP and lengthening the PDF.

Figure 1.1: Operating and Cash Conversion Cycle



Source*:* Ross et al (2003)

1.1.2 Profitability

Profitability is the lifeblood and nerve centre of any firm. Measuring the past and current profitability as well as projecting accurately future profit is essential of survival of business. Vishnani & Shah (2007) defines Profitability is the rate of return on firm's investment. Corporate profit measures financial performance using earnings after expenses and other deductions are made, computed as gross profit, net profit or net operating profit after taxes. Gross profit is sales revenue minus cost of goods sold. Earnings before Interest and Taxes (EBIT) or Operating profit surplus generated by operations computed as sales revenue minus cost of goods sold and all expenses except for interest and taxes. Return on sales (ROS) measures the operating

performance of a firm, expressed as a percentage of sales revenue (Net income ÷ Sales revenue) showing how efficiently management uses the sales income, reflecting its ability to manage costs and overhead operating efficiently, withstand adverse conditions such as falling prices, rising costs, or declining sales. Return on equity (ROE) measures the rate of return on the ownership interest (shareholders' equity) of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity (also known as net assets, assets minus liabilities).

Recent literature analyzes the profitability using net operating profitability (NOP) (Raheman et al., 2010); return on total assets (ROTA) (Deloof, 2003); return on invested capital (ROIC), return on assets (ROA) (Narware, 2010). Shin & Soenen (1998) found that efficient working capital management is an integral component of the overall corporate strategy towards creating shareholder value. Van Horne & Wachowicz (2004) point out that excessive level of current assets may have a negative effect of a firm's profitability, whereas a low level of current assets may lead to lowers of liquidity and stock-outs, resulting in difficulties in maintaining smooth operations. Dilemma in working capital management is to achieve desired tradeoff between liquidity and profitability

1.1.3 Effect of working capital management on profitability

Smith (1980) notes that importance of the working capital arises from the fact that it has an impact on the firm profitability and risk level which in turn affects the value of the firm. The objective of working capital management is to increase the profitability of company and ensure availability of sufficient funds to meet short-term obligations as and when they fall due. Profitability is related to the goal of shareholder wealth maximization where investment in current assets is made if acceptable return

attainable, while liquidity is needed for the company to continue in business. The twin goals of profitability and liquidity are often in conflict since liquid assets give the lowest returns. Van Horne & Wachowicz (2004) points out that excessive level of current assets may have a negative effect of a firm's profitability, whereas a low level of current assets may lead to lowers of liquidity and stock-outs, resulting in difficulties in maintaining smooth operations. Dilemma in working capital management is to achieve desired tradeoff between liquidity and profitability Eljelly (2004) observes that planning current assets and liabilities to eliminate the risk of inability to meet obligations and avoid excessive capital tied in these items is critical for efficient working capital management which was acknowledged by Deloof (2003) that profit can potentially be maximized by the way working capital is managed. Maximizing profit and preserving liquidity are equally important for a company but there must be a trade-off between profit and liquidity. If the company neglects profit it cannot survive in the long term while on the hand the company will face risk of insolvency if it has liquidity problems

The rationale for carrying out the study was based on the fact that working capital management is a very important component of corporate finance that directly affects the risk, liquidity and profitability of the firms. A desirable working capital strategy maximizes shareholder interests without compromising the liquidity position as elucidated by Shin and Soenen (1998) using two North American supermarkets, Walmart and Kmart. The two companies had similar capital structures in 1994 in but Kmart had a cash conversion cycle of 61 days while Walmart had 40 days. As result Kmart faced additional financial costs of US$ 200 million per year which was not

sustainable due poor working capital management, eventually contributing to Kmart's bankruptcy.

The study intended to test whether efficient working capital management will contribute positively to the creation of firm's profitability among the two groups of firms. In concurrence with previous studies the study expects negative significant relationship between cash conversion cycle and firm profitability is expected which reveals that reducing cash conversion period results into profitability increase. Deloof (2003), Shin and Soenen (1998), Laziridis and Tryfonidis (2006), Garcia-Teruel and Martinez-Solano (2007), did research in respectively Belgium, USA, Greece, Spain and Turkey all found a negative relation between WCM and firm profitability. Deloof (2003) using Gross Operating Income found negative relation with number of days of Accounts Receivables, number of days of Inventory, number of days of Accounts and number of days of Cash Conversion Cycle while Lazaridis and Tryfonidis (2006) using gross profit found negative relation and Padachi (2006) using return on assets found negative relation.

1.1.4 Nairobi Securities Exchange (NSE)

Wagacha (2001) describes NSE as a market that provides financing through sale of stocks and securities of Public quoted firms and Government to investing public. Nairobi Stock Exchange started dealing in shares and stocks in the 1920's as a voluntary association of stock brokers but trading was not formal. In 2002 the Central Depository and Settlement Corporation (CDSC) was introduced. In July 2011, the Nairobi Stock Exchange Limited changed its name to the Nairobi Securities Exchange Limited reflecting the strategic plan of the Nairobi Securities Exchange to evolve into

a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. In September 2011 the Nairobi Securities Exchange converted to a company limited by shares. Types of Indices used NSE 20 share Index, NSE All Share Index (NASI) and FTSE NSE Indices. By 2011 60 firms were listed at the NSE categorized as main investment segment and alternative segment grouped into sectors of manufacturing and allied, commercial and service, agricultural, construction and allied, energy and petroleum, telecommunication and technology, banking, insurance and investment.

1.2 Statement of the Problem

This study was motivated by the fact that differing and contradicting result have been found from previous studies and it would be important to assess if the study proposed will yield conclusive results in Kenya. Over the years numerous articles have been written on the importance of working capital management in relation to profitability of firm which has found mixed results (Shin and Soenen, 1998; Deloof, 2003; Garcia-Tereul and Martinez- Solano, 2007; Raheman and Nasr, 2007; Mathuva, 2009; Dong and Su, 2010). The study expected negative relationship between profitability and working capital management in concurrence with the findings of previous studies by Deloof (2003) using Gross Operating Income as profitability measure found negative relation with number of days of Accounts Receivables, number of days of Inventory, number of days of Accounts and number of days of Cash Conversion Cycle while Lazaridis and Tryfonidis (2006) using gross profit found negative relation and Padachi (2006) using return on assets found negative relation. Findings indicated negative relationship between the number of days Accounts receivable and profitability implying the longer collection period from customers the lower the

profits but Sharma and Kumar (2011) who conducted their research in India found a positive relationship implying that firms can improve the profitability by lengthening the credit period for their customers with the rationale being the need grant longer credit periods in order to sustain their market and respond to competition.

Most researchers found a negative relationship between the number of days of inventories and the profitability because less profitable firms tend to keep their stocks low in times of falling sales and as a consequence declining profits (Garcia-Tereul and Martinez-Solano, 2007), Mathuva (2009) found a positive relationship and suggests that by having high inventory levels firms reduce bottlenecks in the production process and the loss of business due to deficiency of products, reduce supply costs of products and protects the firm from possible price fluctuation. Mathuva (2009) and Nobanee (2009) found a positive relationship between the number of days Accounts payable and profitability contemplating the reason why firms wait longer to pay the bill to suppliers is to have a better cash flow position and a higher profitability. Mathuva (2009) argues that the positive relationship means firms wait longer to pay their bills in order benefit from cash available for working capital needs and longer delays in payments result in higher levels of working capital levels that can be used to increase the profitability. Sharma and Kumar (2011) revealed a negative relationship between the accounts payable and profitability and stated that the number of days to pay bills to suppliers depends on the profitability of the firm. Most researchers found negative relationship between number of days Cash Conversion Cycle and profitability, but in recent years some researchers such as Sharma and Kumar (2011) and Gill et al (2010) have found in contrary a positive relationship but Sharma and also state that this positive relationship not significant.

The second reason that motivated the study arose from the importance of proper working capital management especially in developing countries like Kenya where major investments are in current assets, financing is done using short term loans, capital markets are not fully developed, bulk of the transactions are done in cash and trade credit hence the way working capital is managed becomes a crucial in efficiency and profit maximization. Financial manger spends large time making decisions on the amount of current assets needed for efficient operations and on how to finance working capital, inadequacy or mismanagement of Working Capital can cause business failures. The working capital management is a very important component of corporate finance that directly affects the risk, liquidity and profitability. A working capital strategy is desirable if it maximizes shareholder interests without compromising the liquidity position as elucidated by Shin and Soenen (1998) using two North American supermarkets, Walmart and Kmart. The two firms had similar capital structures in 1994 in but Kmart had a cash conversion cycle of 61 days while Walmart had 40 days. As result Kmart faced additional financial costs of US$ 200 million per year which was not sustainable due poor working capital management, eventually contributing to Kmart's bankruptcy.

The third reason was that previous studies targeted one independent variable of profitability hence the study is interested in assessing if the relationship arrived on previous studies would hold true for the separate groups of firms under study. The study differs from previous related papers done in Kenya by Kithii (2008) Mathuva (2009), Kimani (2009), Mutungi (2010) and Kimula (2011) which investigated only one sample of companies and measure profitability using one independent variable by proposing to use two dependent variables of return on sale (ROS) and return on total assets (ROTA) as measure of profitability among two separate groups of firms

categorized as fixed capital intensive and working capital intensive groups. This study differs from previous related papers in that: it investigates two separate groups of companies (working capital intensive and fixed capital intensive) and measures profitability in two different ways (return on sales ROS and return on total asset ROA). The study also investigates whether there is any difference between corporate profitability and working capital management in these two groups. The previous papers investigate only one sample of companies and measure profitability in terms of ROTA or ROS. While in line with previous studies propose to use Cash Conversion Cycle; Receivables Conversion Period; Inventory Conversion Period; Accounts Payable Period as Independent variables while Firm Size; Financial Debt Ratio and Growth as control variables

1.3 Research question of the study

The question of study was whether profitability is affected significantly by working capital management components among firms listed at NSE, incorporating the limitation that listed firms are in diverse business, not similar to the other and profitability is influenced by external environmental, political, economical, social, technological, ecological and legal forces beyond control of the firms

1.4 Objective of the Study

The objective of the study was to analyze the relationship of different components of working capital management on profitability, investigate if there was significant difference between corporate profitability and working capital management in firms listed at NSE form 2005 to 2011.

1.5 Significance of the study

To the investors and management of quoted companies:

The study would provide managers with better insights on how working capital affects profitability and how to create efficient working capital management practices, maximize value building investors' confidence.

To the government and regulating agencies:

This study would also assist policy-makers to implement new sets of policies regarding the working capital market to ensure continuous economic growth. Capital Market Authority as regulator of listed firms should ensure that good corporate governance maintained to promote the value and interest of stakeholders ensuring that full disclosure and compliance with international financial standards adopted by the country.

To the academics:

The information generated should help in understanding the relevance of working capital management and provide knowledge base upon which further studies and research can be undertaken to explain phenomena and create model and theories that can adequately account for business operations in global dynamic competitive environment

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section covered working capital management, profitability, the theoretical review, conceptual framework and empirical framework in relation to the study.

2.2 Working Capital Management

The paradigm every company needs working capital is being put on the spot in a time when global competition erodes prices, margins are low, companies need cash to expand internally or invest in new technologies and products and pay down debt, turning to working capital as a source of cash represents a tactical managerial tool. There are a growing number of companies acknowledging working capital management as a true competitive advantage in the profit enhancement. Reducing inventory, payables, and receivables costs require long-term operational changes that produce permanent cost improvements and thus improve profit. Dell Computer Company derives cost advantage in three areas: component purchase costs, selling and administrative costs and inventory and working capital costs. In 1998, Dell had thirty six days in account receivable, seven days in inventory, but fifty-one days in accounts payable (Govindarajan & Gupta, 2001). Working capital management is concerned with administration of the current assets and current liabilities representing funds required to meet short-term commercial operation and associated basically with determining the optimal levels of investment in various current assets to ensure that neither excessive nor under estimate working capital forecast. Working capital forecast is the process of determining an optimum level of investment in working

capital which involves estimation of current assets and current liabilities. Management will use a combination of policies and techniques for the management of working capital.

Cash management deals with identify the cash balance which allows for the business to meet day to day expenses, but reduces cash holding costs. Managing cash collections and receivables to enhance the efficiency of cash management, collections and disbursements require speedy collection of receivables from customers and slowing disbursements as well as developing strategies for handling the excess cash balance. Cash and marketable securities is the most liquid of all the current assets. Unless cash is invested, it does not earn an explicit rate of return (Weston and Brigham, 1992). Marketable securities which are highly liquid, short term interest bearing government and non-government money market investments enable a return to be earned on temporarily idle money (Gitman, 1997). Businesses are obliged to hold cash and marketable securities because of the need to satisfy financial agreements (contractual motive), make planned expenditure (transactions motive), protect the business against unexpected short term cash demands (safety motive), and, invest in unexpected short-term opportunities that may arise (speculative motive). Traditional approach to cash management stresses that idle cash is necessary to prevent liquidity problems in contrast while contemporary approach contends that the investment in cash should be subject to the same criteria as investments in other types of assets the required rate of return (Gitman, 1997).

Inventory management deals the level of inventory which allows for uninterrupted production but reduces the investment in raw materials, minimizes reordering costs

and hence increases cash flow. Inventory comprises goods held for resale, goods in the process of production, or goods used as raw materials in the production process. A variety of motives are argued to exist for the holding of inventory, viz. contractual, speculative, precautionary and transactions motives, with the advent of just-in-time the emphasis has changed substantially focusing on developing good supplier relations, logistics and delivery systems so as to minimize the investment in inventory. The decision to hold a target level of inventory will be determined by a range of factors such as the pattern of sales, type of business (manufacturing, wholesaling or retailing), length of the production process, dependability of supply sources, seasonality of sales, predictability of sales, economic, political, and other macroeconomic factors, the opportunity costs of finance, ordering, transport, storage, insurance, obsolescence, spoilage, theft and the opportunity cost of tying up funds in inventory . Besides this, the lead times in production should be lowered to reduce Work in Process, the Finished Goods should be kept on as low level as possible to avoid over production using Just in Time (JIT); Economic order quantity (EOQ); Economic quantity. Inventory management is essential to avoid over investment and under investment in inventories and provide the right quantity of goods of right quality at proper time and at proper value is equally essential.

Managing the receivable is concerned with maintaining the receivables at the optimum level and review the credit policy and producers accordingly. Debtors management target the appropriate credit policy which will attract customers, such that any impact on cash flows and the cash conversion cycle will be offset by increased revenue and hence Return on Capital. Short term financing target the appropriate source of financing, given the cash conversion cycle, the inventory is

ideally financed by credit granted by the supplier but it may be necessary to utilize a bank loan (or overdraft), or to convert debtors to cash through factoring. Accounts Receivables result from inventory that has been sold but for which payment has not been received and must be financed by the business (Gitman, 1997). The accounts receivable balances are a function of the level of sales and the credit policy of the business. Where credit sales rather than cash sales are the norm, accounts receivable can form a large portion of current assets of a business, and have a notable impact on the its cash flow and level of working capital. Credit sales may constitute an attempt at stimulating sales and hence market share, which will have an impact on capacity utilization, and may entail an attempt to restructure the ratio of inventory to accounts receivable.

2.2.1 Determinants of working capital

Numerous factors influence the size and need of working capital, no set rule or formula can be framed. The optimum level of current assets depends on many determinants. Nature of business: Trading and industrial concerns require more funds for working capital than concerns engaged in public utility services. The investment varies from concern to concern, depending upon the size of business, the nature of the product, and the production technique. Conditions of supply: If the supply of inventory is prompt and adequate less funds are be needed while if the supply is seasonal or unpredictable more funds will be invested in inventory. Credit policy and credit period; longer credit period requires more investment in debtors and hence more working capital is needed. Conditions of supply of inputs; Potential growth or expansion of business; when adopting expansionist policy more working capital needed (Brigham & Davis,2010).

2.2.2 Approaches and Principles of Working Capital Management

Conventional Method of matching of cash inflows and outflows but ignores time value of money. Operating Cycle Method combines debtors + stock - creditors taking into Account length of time taken to convert cash into resources, resources to final product, final product to debtors and debtors to cash again. Cash Cost Technique where working capital forecast is done on Cost Basis (taking P&L items into account). Balance Sheet Method where working capital forecast is done on various Assets & Liabilities (taking B/S items into account) as articulated by Brigham & Davis (2010).

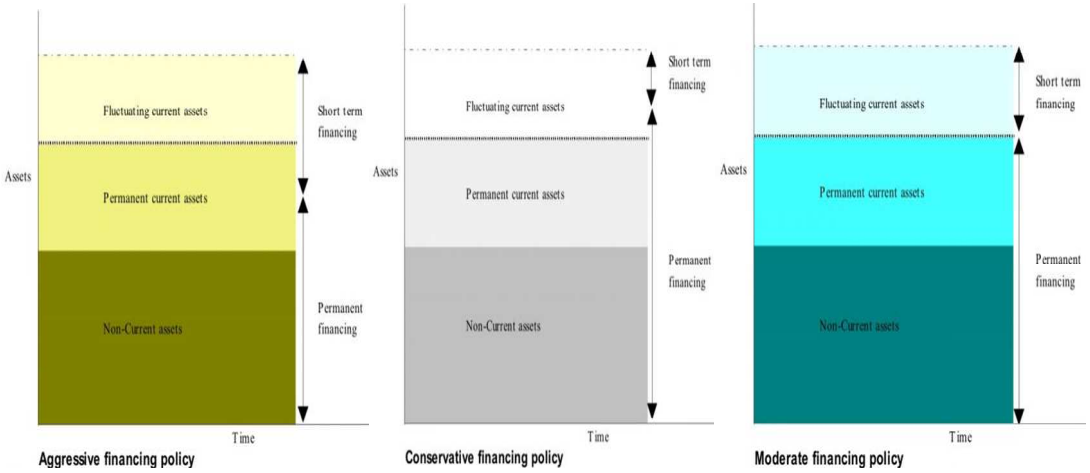
The principles of working capital management include Principles of the risk variation: Risk refers to the inability of firm to maintain sufficient current assets to pay its obligations. If working capital is varied relative to sales, the amount of risk that a firm assumes is also varied and the opportunity for gain or loss is increased. There is a definite relationship between the degree of risk and the rate of return. As a firm assumes more risk, the opportunity for gain or loss increases. If the level of working capital goes up, amount of risk goes down, the opportunity for gain is like-wise adversely affected. Principle of equity position: The amount of working capital invested in each component should be adequately justified by a firm's equity position contributing to the net worth of the firm. Principle of cost of capital: Different sources of finance have different cost of capital, cost of capital moves inversely with risk. Principle of maturity of payment: A company should make every effort to relate maturity of payments to its flow of internally generated funds creating a disparity between the maturities of a firm's short-term debt instruments and its flow of internally generated funds, because a greater risk is generated with greater disparity.

2.2.3 Financing working capital

The trade-off between risk and return which occurs in policy decisions regarding the level of investment in current assets is a policy decision on the choice between short and long-term funds to finance the working capital (Brigham & Davis ,2010). Aggressive working capital policy, organization holds a minimal level of inventory, minimize costs, finance part of its permanent asset base with short term debt, but the organization may not be able to respond rapidly to increases in demand because of the low stocks.

A large inventory is maintained under the conservative policy and therefore the return is lower than under an aggressive policy. Under a conservative working capital financing policy, the organization's non-current assets, permanent current assets as well as a part of the fluctuating current assets are financed with permanent financing (equity and long term debt). Therefore the conservative financing policy is the least risky policy but it gives lowest return to the company as there is less reliance on short-term funding. In terms of risk and return, a moderate policy falls somewhere between the two extremes. With a moderate working capital financing policy, non-current assets and permanent current assets are financed with permanent finance and only the fluctuating current assets are financed with short term debt as shown in figure 2.1 below

Figure 2.1: Financing policy of working capital



Source: Brigham & Earnhardt (2010)

2.3 Theoretical review

The theory of working capital management describes how working capital should be managed and demonstrates the benefits in terms of liquidity, solvency, efficiency, profitability, and shareholder wealth maximization which accrue to the company from appropriately managing working capital (Brigham, et al. 1999). The interaction between current assets and current liabilities is the main theme of the theory of working capital management. Working capital management is concerned with the problem that arises in attempting to manage the current assets, the current liabilities and the inter-relationship that exist between them. The goal of working capital management is to manage current assets and current liabilities in such a way that a satisfactory level of working capital is maintained.

2.3.1 Walker's Approach

In 1964 Ernest W. Walker postulated that a firm's profitability is determined in part by the way its working capital is managed. When the working capital is varied relative to sales without a corresponding change in production, the profit position is

affected. Walker laid down the four principles with respect to working capital investment. First principle: This is concerned with the relation between the levels of working capital and sales. if working capital is varied relative to sales, the amount of risk that a firm assumes is also varied and the opportunity for gain or loss is increased which implies a definite relationship exists between the degree of risk that management assumes and the rate of return, the more the risk that a firm assumes, the greater is the opportunity for gain or loss. Second principle: Capital should be invested in each component of working capital as long as the equity position of the firm increases. This principle is based on the concept that each amount invested in fixed or working capital should contribute to the net worth of the firm. Third principle: The type of capital used to finance working capital directly affects the amount of risk that a firm assumes as well as the opportunity for gain or loss and cost of capital. Different types of capital possess varying degrees of risk. Investors relate the price for which they are willing to sell their capital to this risk. Fourth principle: The greater the disparity between the maturities of a firm's short-term debt instruments and its flow of internally generated funds, the greater the risk and vice-versa. This principle is based on the analogy that the use of debt is recommended and the amount to be used is determined by the level of risk, management wishes to assume.

2.3.2 Trade off Approach

All decisions of the financial manager are assumed to be geared to maximization of shareholders wealth, and working capital decisions are no exception. There are two types of risks inherent in working capital management, namely, liquidity risk and opportunity loss risk. Liquidity risk is the non-availability of cash to pay a liability

that falls due. The other is the risk of opportunity loss like the risk of having too little inventory to maintain production and sales, or the risk of not granting adequate credit for realising the achievable level of sales.

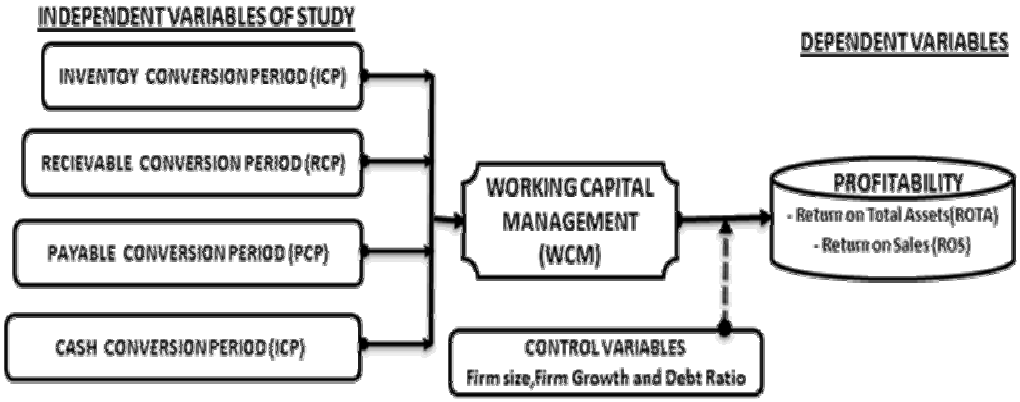
2.4 Conceptual framework

The goal of working capital management is to manage the current assets and determining the level of working capital to be maintained and decision on financing of current assets. Profitability is measured using return on sales and assets while working capital measured using components of cash conversion cycle (CCC) Components of CCC include inventory conversion period (ICP), receivable collection period (RCP) and payable deferral period (PDF). ICP is the average time required to convert material into finished goods and sold. RCP is the day's outstanding sale, the average number of days it takes to collect cash from accounts receivable computed by dividing accounts receivable by sales per day. PDF is the number of days from when purchases are made and payments effected. Cash conversion cycle is sum of inventory conversion period plus receivable collection period less payable deferral period. The principle should be to shorten the CCC without hurting the operations by reducing ICP, RCP and lengthening the PDF.

Dependent variable: profitability of firms measured using return on total assets and return on sales, while Independent variables: Average collection period (ACP) as proxy for the collection policy of the firms; Inventory turnover period (ITP) as proxy for the inventory policy; Average payment period (APP) as proxy for payment policy and Cash conversion cycle (CCC) sum of average collection period and inventory turnover period less average payment period. Control variables: according to Eljelly(2004) control variable that also affect profitability include; Current

ratio(CR),Debt ratio(DR) as proxy for leverage, Size of firm represented by natural log of sales(LOS) and financial assets to total assets(FATA) as indicated in figure 2.2 below

Figure 2.2: Conceptual framework of effect of working capital on profitability



2.5 Empirical framework

The corporate finance literature has traditionally focused on the study of long-term financial decisions particularly investments, capital structure, dividends or company valuation decisions but on similar equal importance short-term assets and liabilities are important components of total assets and their management warrants a careful investigation since the working capital management plays an important role for firm's profitability and risk as well as its value (Smith, 1980). Many previous researches have indicated the relations between working capital management and profitability of a company in different environments.

Shin and Soenen (1998) researched the relationship between working capital management and value creation of American firms from 1975 to1994 with 59,985 firm years' observations. Profitability measured by return on assets (ROA) and return on sales (ROS) and cash conversion cycle and net-trade cycle (NTC) as standard

measure for working capital management using correlation and regression analysis, by industry, and working capital intensity found strong evidence of Significant negative relationship between the length of the firm's net-trade cycle and its profitability concluding that that shorter the days of working capital higher the profitability

Deloof (2003) studied the relationship between profitability and management of working capital for 1,009 Belgian firms from 1992 to1996 using regression and correlation analysis found that most of companies had invested huge amount of cash in their working capital, inventory period and collection period had negative relationship with profits while payment period had positive relationship with profitability, concluding that managers can add value to wealth of shareholders by reducing receivable period and inventory period and cash conversion cycle.

Lazaridis and Tryfonidis (2006) undertook a cross sectional study on sample of 131firms listed on Athens Stock Exchange from 2001 to 2004 using correlation and regression tests found statistically significant negative relationship between cash conversion cycle, financial debt and profitability, while fixed financial assets have a positive coefficient concluding that managers can create profits for their companies by correctly handling the cash conversion cycle and by keeping component of conversion cycle at an optimum level.

Ching, Novazzi and Gerab (2011) Investigated the relationship between working capital management and profitability using two samples of working capital intensive and fixed capital intensive from sample of 16 Brazilian listed companies from 2005 to

2009 with profitability measured by return on sales (ROS), on asset (ROA) and on equity (ROE) and independent variables being cash conversion efficiency, debt ratio, days of working capital, days receivable and days inventory. Multiple linear regression and ANOVA revealed that day's inventory has negative relationship with ROS and ROA but has no statistical evidence in ROE improvement in working capital regardless the type of company whether working capital or fixed capital intensive managing working capital properly is equally important.

Mathuva (2009) examined the influence of working capital management components on corporate profitability on a sample of 30 firms listed on Nairobi Stock Exchange from 1993 to 2008 using Pearson and Spearman's correlations, the pooled ordinary least squares and regression models to conduct data analysis, found highly significant negative relationship between CCC and profitability, highly significant positive relationship between the period taken to convert ICP and profitability and highly significant positive relationship between PCP and profitability.

Michael Nwidobie Barine (2012), investigated Working capital management efficiency and corporate profitability from quoted firms in Nigeria using 22 quoted firms from Nigerian Stock Exchange for the year 2010 increasing a firm's working capital reduces risk of illiquidity and increases overall profitability concluding that proper management requires trade-off of risks of and returns for financial efficiency of firm's operation.

Other studies in Kenya include; Kithii (2008) using a sample of 24 companies listed on the (NSE) for a period of six (6) years from 2001 – 2006, Pearson's correlation and

regression analysis (pooled least squares) for analysis found statistical significant negative relationship between variables of working capital management and the profitability except for the average payment period which showed a positive relationship. Kamula (2011) analyzed the effects of working capital management on the firm's profitability for cement companies in five years (2006 – 2010). Profitability measured by operating income + depreciation)/total asset and cash conversion cycle for working capital management Spearman's Correlation analysis findings indicated that working capital management increases profitability confirming negative relationship between the working capital management and profitability. Kweri,(2011) using a sample of 17 firms at NSE, Pearson's correlation and regression analysis confirmed strong negative relationship between average collection period, inventory holding period and cash conversion cycle.

2.6 Conclusion

From the above discussion it was evident that working capital is closely related to a business's performance, and because of its close relationship with production and output it has been argued that the purpose of working capital is to ensure the effective and efficient utilization of the investment in fixed assets. Working capital is intertwined with key areas of financial management, such as the capital investment and financing decisions, as well as liquidity, solvency, efficiency, profitability, and shareholder wealth maximization. Therefore an investigation into the effects of working capital management on profitability of firms listed on NSE from 2005 to 2011 is the fundamental objective of this proposal. Given that a business has to continually adapt to the changing external environment, and determine the appropriate level and mix of the investment in current assets and the financing of the current

assets, the conservative, aggressive and moderate approaches are useful in the management of working capital which provides an inspiration to undertake the proposed study.

From the reviewed studies it is evident that they present some differences and similarities. The term profitability is measured in different ways by the authors. It can be measured as being gross operating profit, net operating profit, return on investment, income to total asset (IA) and income to sales (IS). Although the majority of authors found evidence that cash conversion cycle has negative relationship with profitability, for Ganesan (2007) it has no association to IA. He also indicates that working capital variables do not have much impact on both IA and IS. For Deloof (2003) these variables present negative relationship, while for Lazaridis and Tryfonidis (2006) accounts payable has positive relationship. No conflict between the authors regarding leverage and/or debt financing with negative relationship. These studies also provide a solid base for understanding the relationship between corporate profitability and working capital management. It is on the basis of these researches conducted in different countries that this proposal was developed for Kenyan listed companies.

The main objective of working capital management is to maintain an optimal balance between each of the working capital components. Business success heavily depends on the ability of manager to effectively manage receivables, inventory, and payables. Firms can reduce their financing costs and/or increase the funds available for expansion projects by minimizing the amount of investment tied up in current assets.

An optimal level of working capital would be the one in which a balance is achieved between risk and efficiency.

Most researchers found a negative relationship between the number of days of inventories and the profitability because less profitable firms tend to keep their stocks low in times of falling sales and as a consequence declining profits (Garcia-Tereul and Martinez-Solano, 2007), Mathuva (2009) found a positive relationship and suggests that by having high inventory levels firms reduce bottlenecks in the production process and the loss of business due to deficiency of products, reduce supply costs of products and protects the firm from possible price fluctuation. Mathuva (2009) and Nobanee (2009) found a positive relationship between the number of days Accounts payable and profitability contemplating the reason why firms wait longer to pay the bill to suppliers is to have a better cash flow position and a higher profitability. Mathuva (2009) argues that the positive relationship means firms wait longer to pay their bills in order benefit from cash available for working capital needs and longer delays in payments result in higher levels of working capital levels that can be used to increase the profitability. Sharma and Kumar (2011) revealed a negative relationship between the accounts payable and profitability. Most researchers found negative relationship between number of days Cash Conversion Cycle and profitability, but in recent years some researchers such as Sharma and Kumar (2011) and Gill et al (2010) have found in contrary a positive relationship but Sharma and also state that this positive relationship not significant.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter covered the research design, the population, sample size and sampling procedure, data collection, data analysis, validity and reliability.

3.2 Research design

The study used quantitative research to explain phenomena by collecting numerical data which will be analysed using mathematically based methods to describe variables, examine relationships among variables and to determine cause-and-effect interactions between variables. The data collected will be subjected to panel analysis as used by Shin and Soenen (1998) and Deloof (2003). Panel data contain observations on multiple phenomena observed over multiple time periods for the same firms over time. The data set will be obtained from secondary sources namely audited financial reports of firms quoted at Nairobi Securities Exchange of Kenya for seven years from year 2005 to 2011.

3.3 Population of the study

The study was designed to target quoted companies at the Nairobi Securities Exchange from the year 2005 to 2011. During this period there were 60 listed companies at Nairobi Securities Exchange (Full list shown in appendix I). To make the study more feasible population data was be grouped into strata or segments based on the nature of their business: manufacturing and allied, commercial and service,

agricultural, construction and allied, automobile and accessories, energy and petroleum, telecommunication and technology, banking, insurance, and investment segments (shown in appendix I).

3.4 Sample and sampling method

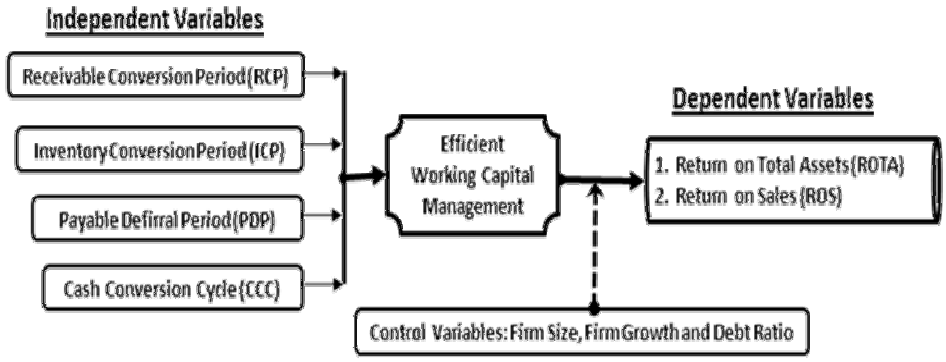
The study used stratified method of sampling which is a probability sampling technique where the researcher divides the entire target population into different subgroups, or strata, and then randomly selects the final subjects proportionally from the different strata. The stratified sample incorporated different sectors or segments of the economy as represented at NSE (listed in appendix II) but because of the specific nature of their business, banking, insurance, and investment will be excluded from study leaving a target population of 40 firms out of 60 (listed in Appendix II). Proportionate sampling was then be used to determine the proportion of elements from each stratum to be included in the study as listed in Appendix II.

The sample size: Sample size refers the number of entities, subjects or observations in a subset of a population selected for analysis. The size of the sample and the way in which it has been drawn from the population are critical issues in any statistical study. This study used simple random sampling method to obtain sample size. Out of the target population of 40 firms, a sample of 30 firms was selected based on a 95% confidence level, 5% confidence interval, and 90% accurate response representing 75% of the population separated into two groups of working and fixed capital intensive firms.

3.5 Data collection

Information will be extracted from secondary data (audited financial reports) include sales, cost of sales, total assets, financial assets, current assets, current liabilities, account receivable, account payable and capital employed (full list shown in appendix III). Variables for analysis will include as shown in figure 3.1 below;

Figure 3.1: Variables of the Study



The computation of variables will be done as shown in table 3.1 below

Table 3.1: Dependent, Independent and Control Variables of the Study

Variables Type	Variables	Abbr'	Measure	Unit
Dependent Variable	Return on Total Assets	ROTA	Net Profit before Intrest and Tax/Total Assets	%
	Return on Sales	ROS	Net Profit after Tax/Net Sales	%
Indipendent Variabes (Working Capital Management componets)	Receivable Conversion Period	RCP	Average Receivable/ Turnover X365	Days
	Inventory Conversion Period	ICP	Average Inventory/ Cost of Sales X365	Days
	Payabe Deferral Period	PDP	Average Payable / Cost of Sales X366	Days
	Cash Conversion Cycle	CCC	Receivable + Inventory - Payabe	Days
Control Variables	Financial Debt Ratio	FDR	(Short-Term+Long-Term Loans)/Total Assets	%
	Growth ot the Firm	FG	$(Sales_t - Sales_{t-1})/Sales_{t-1}$	%
	Size of the Firm	FS	Natural Logarithim of Sales	Lns

The dependent variable: Padachi (2006), Sharma and Kumar (2011) used return on assets (ROA) to measure profitability. Thair and Imad (2012) used Return on Total Assets *(ROTA)* and Net Operating Profitability (NOP) to represents the ratio of how much a firm has earned on its asset base. Hong, Novazzi and Gerab (2011) study of Brazilian firms measured profitability using return on sales (ROS), on asset (ROA) and on equity (ROE).

Return on Total Assets (ROTA) best captures profitability reflecting return generated on the total funds invested. The ratio brings the firms with different asset bases and earnings on the same platform making them comparable and computed as earnings before interest and taxes (EBIT) against its total assets reflecting how efficiently and effectively the assets are used to generate earnings.

Return on Sales (ROS) measures operating performance, expressed as a percentage of net income to sales revenue (Net income ÷ Sales revenue)

The control variables

The firm size was determined by the natural logarithm of salesto have normalized the sales value (ln of sales). Researchers like Deloof, (2003); Padachi, (2006); Lazaridis and Tryfonidis (2006) and Dong and Su (2010) used as a control variable because large companies have bargaining strength to obtain more favorable, can purchase larger quantities of products or get extended credit terms from suppliers.

Financial Debt Ratio (leverage) shows the how much assets are financed by external debt and computed by (Short-Term Loans + Long-Term Loans) / Total Assets. The

control variable has been used in Studies by Deloof, 2003; Lazaridis and Tryfonidis (2006) and Dong and Su, 2010.

Firm Growth as a control variable was calculated by deducting from current year sales the previous year's sales divided by previous year's sales. The control variable has been used by Shin and Soenen (1998); Deloof (2003) and Sharma and Kumar (2011) in previous studies

The independent variable: include The Cash Conversion Cycle (CCC), Receivables Conversion Period (RCP), Inventory Conversion Period (ICP) and Accounts Payable Period (APP)

Cash Conversion Cycle is a comprehensive measure of working capital to show the time lag between expenditure for the purchases of raw materials and the collection of sales of finished goods. Cash Conversion Cycle = (Number of Days Accounts Receivable + Number of Days Inventory) – Number of Days Accounts Payable.

Receivables Conversion Period (RCP) used as proxy for the collection policy was calculated by dividing account receivable by sales and multiplying the result by 365 days showing on average the time required to change the receivables into cash. Studies found a negative relation between the number of days accounts receivables and a firm's profitability, with the exception of Sharma and Kumar (2011), Deloof(2003), Laziridis and Tryfonidis(2006), Raheman and Nasr(2007) and Mathuva(2010).

Inventory Conversion Period (ICP) used as proxy for the inventory policy calculated by dividing inventory by sales and multiplying the result by 365 days showing average time required to change the materials into finished product and then sell the goods. Studies by Deloof (2003), Laziridis and Tryfonidis (2006), Raheman

and Nasr (2007), Mathuva (2010) and Sharma and Kumar (2011) found Inventory Conversion Period has negative effect on a firm's profitability

Accounts Payable Period (APP) used as proxy for payment policy obtained by dividing accounts payable by cost of sale and multiplied by 365days. Mathuva (2009) found positive relationship between the number of days Accounts payable and profitability contemplating the reason why firms wait longer to pay the bill to suppliers is to have a better cash flow position and a higher profitability. Mathuva (2009) argues that the positive relationship means firms wait longer to pay their bills in order benefit from cash available for working capital needs and longer delays in payments result in higher levels of working capital levels that can be used to increase the profitability.

3.6 Data analysis

Model Specifications: The study used regression analysis of cross-sectional and time series data (pooled regression panel data analysis) where the firm cross section data and time series data are pooled together in a single column assuming that there is no significant cross section or temporal effects and with both intercepts and slopes constant,. The model to evaluate the relationship between corporate profitably and efficient working capital will take the form: $Y = f(x) = a + k_1x_1 + k_2x_2 + k_3x_3 + k_4x_4 + k_5x_5$, where, Y is the dependent variable, Corporate profitability that is affected by independent variables $X_{1,2\ldots.n}$; a is the constant (Y intercept).

The general form of model is: $\boldsymbol{Y_{it} = \beta_0 + \sum_{All}^{n} \beta_i X_{it} + \varepsilon,}$ *Where* $\boldsymbol{Y}$ *is the Dependent variable at time t, for firms i;* $\boldsymbol{X_{it}}$ *: Independent variables for working capital*

Management of firm i at time t; ***t :*** *Time = 1, 2,……,7 years;* β_0 *:The intercept of equation;*β_i ***:****Coefficients of X it variables and* ε*: The error term*

Specific model is:

$$ROS_{it} = \beta_0 + \beta_1 (RCP_{it}) + \beta_2 (ICD_{it}) + \beta_3 (PCP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (FS_{it}) + \beta_6 (FG_{it}) + \beta_7 (FDR_{it}) + \varepsilon$$

$$ROTA_{it} = \beta_0 + \beta_1 (RCP_{it}) + \beta_2 (ICD_{it}) + \beta_3 (PCP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (FS_{it}) + \beta_6 (FG_{it}) + \beta_7 (FDR_{it}) + \varepsilon$$

Where: ***ROS:*** *Return on Sales;* ***ROTA:*** *Return on Total Assets;* ***RCP****: Receivables Collection Period;* ***ICD:*** *Inventory Conversion Period;* ***PCP:*** *Payable Conversion Period****; CCC****: Cash Conversion Cycle;* ***FS:*** *Firm Size;* ***FG:*** *Firm Growth;* ***FDR:*** *Financial External Debt to Total Assets and* ε*: The error term.*

To determine the relationship between working capital management and profitability of firms listed at Nairobi Securities Exchange the analysis will include; Descriptive analysis of the working capital management in terms of mean, median and standard deviation using the statistical package for social sciences (SPSS) software Quantitative analysis to identify the degree of association among the variables using correlation coefficient, regression analysis, Pearson and Spearman's Correlations, Regression Model.

Descriptive analysis shows the average, median, standard deviation and the maximum and minimum values of the different variables. multiple regression analysis will be use to explore the impact of independent variables on profitability variables and whether there is any difference between corporate

profitability and working capital management in the two different groups of companies.

Reliability (consistency) and validity (accuracy):

Validity of an assessment is the degree to which it measures what it is supposed to measure while reliability is the extent to which a measurement gives results that are consistent. Reliability **is** a measure of the internal consistency and stability of a measuring device. Reliability is measured with a reliability coefficient (a correlation between sets of scores). The internal validity of a test is the extent to which it measures what it is supposed to measure. The external validity of a test refers to how well it can be generalized to others in the population for which it was developed. Validity gives an indication of whether the measuring device measures what it claims to. Internal consistency is the degree in which the items or questions on the measure consistently assess the same construct. Internal consistency is often measured using Cronbach's Alpha (a super-correlation of all the items on the scale). If the score is .70 or higher the measurement is acceptable.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents the analysis and interpretation of data obtained from the financial statements of the sample companies. The results from the regression and correlation analysis are represented in tables and discussed.

4.2. Descriptive statistics

Table 1 provides descriptive statistics of the collected dependent and independent variables of all listed firms over the 5-year period. To make the analysis and interpretation more precise and accurate, the values of maximum, minimum, mean and standard deviation have been computed.

Table 4.1: Descriptive statistics

		Kolmogorov–Smirnov[a]			**Shapiro–Wilks'**		
	Variables Details	**Skewness**	**Kurtosis**	**Stat.**	**Sig.**	**Stat.**	**Sig.**
1	Receivables Collection Period (RCP_{it})	0.688	-0.325	0.178	0.000	0.920	0.002
2	Inventory Conversion Period (ICP_{it})	0.410	-0.619	0.108	0.200*	0.955	0.056
3	Payable Conversion Period (PCP_{it})	2.273	4.140	0.287	0.000	0.600	0.000
4	Cash Conversion Cycle (CCC_{it})	0.170	-0.797	0.112	0.160	0.968	0.200
5	Firm Size (FS_{it})	2.454	6.143	0.362	0.000	0.623	0.000
6	Firm Growth (FG_{it})	1.167	1.628	0.139	0.017	0.913	0.001
7	Financial External Debt to Total Assets (FDR_{it})	-0.374	-0.807	0.110	0.183	0.950	0.033

* This is a lower bound of the true significance. [a] Lilliefors Significance Correction.

Table 4.2: Descriptive statistics results for all variables tested for all firms over the 5 year period.

Variable	Details	N	Maximum	Minimum	Mean	Std. Dev.
1	Receivables Collection Period (RCP_{it})	30	8.71	2.99	5.64	1.45
2	Inventory Conversion Period (ICP_{it})	30	8.11	1.97	4.78	1.66
3	Payable Conversion Period (PCP_{it})	30	4.18	0.01	0.63	1.09
4	Cash Conversion Cycle (CCC_{it})	30	172.22	21.29	72.07	36.62
5	Firm Size (FS_{it})	30	32.12	1.79	6.47	6.65
6	Firm Growth (FG_{it})	30	11.67	2.98	6.01	1.89
7	Financial External Debt to Total Assets (FDR_{it})	30	36.62	6.66	22.47	8.39

The inventory Conversion period of the companies was at an average of 4.78 times with standard deviation of 1.66, maximum of 8.11 times and minimum of 1.97 times, which were considered to be satisfactory. So, even if the inventory conversion period comes down by, say, three or four days the levels of profits will not be adversely affected.

The results of descriptive statistics show that the average Payable Conversion Period was 63 days with a standard deviation of 1. 09. The maximum Payable Conversion Period used by a company was 4.18 days which was unusual but might be possible if the equity of the company was negative. The minimum level of the Payable Conversion period was 1 day.

CCC used to check the efficacy in working capital management was on average 72 days and standard deviation was about 37 days. The selected companies take an

average of 6 days to sell inventory with standard deviation of 1–2 days. Here, maximum time taken by a company was 9 days, while minimum time was only 3 days. This is considered to be a fairly good time period in terms of converting inventory into sales.

The companies receive payment from debtors after an average of 8-9 days, the standard deviation for receivables collection period was 8.71. Minimum time taken by a company to collect cash from debtors was 2 days while the maximum time taken for this purpose was 32 days. Companies usually take an average 6 days to pay their creditors with standard deviation of only 3 days. Here, minimum time taken by a company was 3 days and maximum time taken for this purpose is 12 days. The mean value of return on total assets was 22.47% with standard deviation of 8.39%. It means that the profitability can deviate from mean to both sides by 8.39%. The maximum value of ROTA was 36.62% while the minimum was 6.66%.

4.3 Regression statistics

The following two specific models have been used in this analysis:

Specific model is:

$$ROS_{it} = \beta_0 + \beta_1 (RCP_{it}) + \beta_2 (ICD_{it}) + \beta_3 (PCP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (FS_{it}) + \beta_6 (FG_{it}) + \beta_7 (FDR_{it}) + \varepsilon$$

$$ROTA_{it} = \beta_0 + \beta_1 (RCP_{it}) + \beta_2 (ICD_{it}) + \beta_3 (PCP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (FS_{it}) + \beta_6 (FG_{it}) + \beta_7 (FDR_{it}) + \varepsilon$$

Where: ***ROS:*** *Return on Sales;* ***ROTA:*** *Return on Total Assets;* ***RCP****: Receivables Collection Period;* ***ICD:*** *Inventory Conversion Period;* ***PCP:*** *Payable Conversion*

*Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total Assets and ε: The error term.*

In the case of first model, stepwise regressions have been done and on this way AI_{it}, AD_{it} and AC_{it} have been removed from the final equation. The strength of the relationship between the dependent variable, ROA and all the independent variables taken together of all firms and the impact of these independent variables on the profitability are given in Table 7. As of our expectation, it was observed that an increase in DER by one unit; the ROA decreased by 4.480 units that were statistically significant at 1 per cent level and when CCC increased by one unit, the ROA of the company decreased by 0.043 units. However, when ICR increased by one unit, the ROA also increased by 1.653 units, which was statistically significant at 1 per cent level. Coefficient for the constant is high, which indicates that there are other explanatory variables—such as asset management and financing of WC (CL/TA).

4.4 Strength of the model

Analysis in table 1 shows that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R^2 equals 0.843, that is, **RCP**: Receivables Collection Period; **ICD:** Inventory Conversion Period; **PCP:** Payable Conversion Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total, leaving only 15.7 percent unexplained. The P- value of 0.001 (Less than 0.05) implies that the model of profitability of the listed companies is significant at 5 percent significance level.

Table 4.3: Model Summary

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.144	4	23.286	79.730	.000[a]
	Residual	53.739	56	.292		
	Total	146.884	60			

a. Predictors: (Constant),**RCP**: Receivables Collection Period; **ICD:** Inventory Conversion Period; **PCP:** Payable Conversion Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total

b. Dependent Variable: ROS

The regression sum of squares tells us how much variability is accounted for by the regression model, which is the fitting of the least-squares line. The residual sum of squares tells us how much variability (again, not variance yet) is unaccounted for by the regression model. The total variability is the sum of both regression and residual variability. The extent to which the regression sum of squares is large relative to the residual sum of squares is the extent to which more variability than not is accounted for by the model.

ANOVA findings (P- value of 0.001) in table 4.3 show that there is correlation between the predictor's variables (**RCP**: Receivables Collection Period; **ICD:** Inventory Conversion Period; **PCP:** Payable Conversion Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total) and response variable (ROS). An F ratio was calculated which represented the variance between the groups, divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups (caused by the independent variable) than there is within each group, referred to as the error term.

4.5 Interpretation of the Regression Model

Table 4.4 : Multivariate Regression Analysis models (for all years tested for all firms).

Coefficients for ROS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Beta	Std. Error	Beta		
1	**(Constant)**	.328	1.234		.930	.354
	RCP	.604	.0456	.297	3.798	.000
	ICD	.482	.724	.188	3.290	.001
	PCP	.345	.456	.013	.215	.001
	CCC	.673	.453	.002	1.078	.004
	FS	.583	.423	.009	1.005	.002
	FG	.567	.077	.406	5.445	.000
	FDR	.334	.308	.001	.021	.000
	Error term	.012	.000	.000	.000	.00

Dependent Variable: ROS

Predictors: (Constant),**RCP**: Receivables Collection Period; **ICD:** Inventory Conversion Period; **PCP:** Payable Conversion Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total Assets

Significance level: $p < 0.001$; N =30

Overall model: $F = 79.730$; $p < 0.001$; $R^2 = 0.843$; Adjusted $R^2 = 0.798$

Table 5 presents the measures the proportion of the variance in the dependent variable (*Corporate Profitability*) that was explained by variations in the independent variables. In this analysis, the "Adjusted R-Square" shows that 79.8% of the variance was explained. The t ratios show the reliability of the estimate of the individual regression coefficients, in this case all the coefficients are reliable since it is a one-tailed test (at 95% confidence level).

Interpretation of the regression results for ROS

Constant = 0.328, shows that if Receivables Collection Period; Inventory Conversion Period; Payable Conversion Period**;** Cash Conversion Cycle; Firm Size; Firm Growth; Financial External Debt to Total the level of ROS would be at a rate of 24%

β_1 = 0.604, shows that one unit change RCP results in 60.4% improvement in ROS

β_2= 0.482, shows that one unit change in ICD results in 48.2% improvement in ROS

β_3= 0.345, shows that one unit change in PCP results in 34.5% increase in ROS

β_4= 0.673, shows that one unit change in CCC results in 67.3% improvement in ROS

β_5=0.583, shows that one unit change in FS results in 58.3 % improvement in ROS

β_6=0.567, shows that one unit change in FG results in 56.7% improvement in ROS

β_7= 0.334, shows that one unit change in FDR results in 33.4% improvement in ROS

Table 4.5: Predictors of ROA, Model Summary

Model	R	R^2	Adjusted R^2
1	0.612[a]	.675	0.501

Table 4.6: Coefficients for ROA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.240	.258		.745	.354
	RCP	.494	.077	.312	3.567	.000
	ICD	.530	.070	.450	2.123	.001
	PCP	.613	.062	.034	.324	.001
	CCC	.489	.021	.019	1.046	.000
	FS	.545	.034	.567	2.234	.001
	FG	.421	.077	.406	4.145	.000
	FDR	.434	.001	.001	.234	.000
	Error term	.012	.000	.000	.000	.00

Dependent Variable: ROA

Predictors: (Constant),**RCP**: Receivables Collection Period; **ICD:** Inventory Conversion Period; **PCP:** Payable Conversion Period**; CCC**: Cash Conversion Cycle; **FS:** Firm Size; **FG:** Firm Growth; **FDR:** Financial External Debt to Total Assets

Significance level: $p < 0.001$; N =30

Overall model: $p < 0.001$; $R^2 = 0.501$; Adjusted $R^2 = 0.675$

In the above model, t value for RCP is highly significant at 1 percent level. It indicates that with increasing level of RCP, ROA will be increased.

Interpretation of regression results for ROTA

Constant = 0.240, shows that if Receivables Collection Period; Inventory Conversion Period; Payable Conversion Period**;** Cash Conversion Cycle; Firm Size; Firm Growth; Financial External Debt to Total the level of ROTA would be at a rate of 24%

β_1 = 0.494, shows that one unit change RCP results in 49.4% improvement in ROTA

β_2= 0.530, shows that one unit change in ICD results in 53% improvement in ROTA

β_3= 0.494, shows that one unit change in PCP results in 49.4% increase in ROTA

β_4= 0.530, shows one unit change in CCC results in 53.0% improvement in ROTA

β_5=0.613, shows that one unit change in FS results in 61.3 % improvement in ROTA

β_6=0.421, shows that one unit change in FG results in 42.1% improvement in ROTA

β_7= 0.434, shows that one unit change in FDR results in 43.4% improvement in ROTA

4.6 Correlation statistics

Table 4.7: Pearson correlations for all variables tested for all firms over the 5-year period.

Variables	**RCP_{it}**	**ICD_{it}**	**PCP_{it}**	**CCC_{it}**	**FS_{it}**	**FG_{it}**	**FDR_{it}**	**ROA_{it}**
RCP_{it}	1							
ICD_{it}	-0.043 (0.768)	1						
PCP_{it}	0.290* (0.041)	-0.246 (0.085)	1					
CCC_{it}	0.196 (0.174)	0.373** (0.008)	-0.349* (0.013)	1				
FS_{it}	0.345* (0.014)	-0.217 (0.130)	0.646** (0.000)	-0.253 (0.076)	1			
FG_{it}	0.178 (0.217)	-0.406** (0.003)	0.549** (0.000)	-0.228 (0.110)	0.686** (0.000)	1		
FDR_{it}	-0.892* (0.0121)	0.142** (0.032)	-0.932 (0.230)	0.481 (0.004)	-0.123 (0.003)	-0.563* (0.021)	1	
ROA_{it}	-0.370** (0.008)	0.480** (0.000)	-0.719** (0.000)	0.399** (0.004)	-0.561** (0.000)	-0.456** (0.001)	-0.456** (0.001)	1

Figures in parentheses indicate significance.

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

**Correlation is significant at the 0.01 level (2-tailed).

Correlation coefficient is computed from selected working capital management and profitability ratios derived from ten-year financial statements of the selected quoted companies. The coefficient gives an insight into the nature and extent of the relationship. Pearson product–moment correlation coefficient or "Pearson's correlation" is obtained by dividing the covariance of the two variables by the product of their standard deviations. The

Pearson's Correlation coefficient "r" is defined as:

$$r = \text{Karl Pearson's correlation formula } \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{(N\Sigma x2 - (\Sigma x)2)(N\Sigma y2 - (\Sigma y)2)}}$$

The Pearson's Correlation is defined only if both of the standard deviations are finite and both of them are nonzero. It is a corollary of the Cauchy–Schwarz inequality that the correlation cannot exceed 1 in absolute value.

Interpretation of the results

Multiple regression analysis was performed to investigate the impact of working management on profitability which the model used for the study. The WCM (RCP; ICD; PCP,CCC,FS,FG and FDR) in the model for ROA revealed the ability to predict ROA ($R^2 = 0.375$). In this model value of R2 denotes that 37.5 percent of the ob-served variability in ROA can be explained by the different in activities of WCM namely RCP; ICD; PCP,CCC,FS,FG and FDR. This variance is highly significant as indicated by the F value (F=45.431 and P = 0.000) and an examination of the model summary in conjunction with ANOVA indicates that the model explains the most possible combination of predictor variables that could contribute to the relationship with the dependent variable. The multiple correlation coefficients between the dependent variable ROA and the independent variables taken together was 0.804. It

indicates that the profitability was highly responded by its working capital management indicators. It is also evident from the value of R^2 that 64.7 per cent of variation in ROA was accounted by the joint variation in FDR, ICD and CCC. The Durbin-Watson value of 1.097 shows that there is presence of positive correlation among the variables.

The multiple correlation coefficient between the dependent variable ROA and the independent variable FS was 0.561. R^2-value shows that 31.5 per cent of variation in ROA was accounted by the variation in FS. Durbin-Watson statistic is quite low, suggesting that perhaps there is autocorrelation and/or spatial correlation in the data.

Pearson's Correlation analysis has been used to see the relationship between working capital management and profitability. If efficient working capital management increases profitability, one should expect a negative relationship between the measures of working capital management and profitability variable and vice versa.

However, care must be exercised while interpreting the Pearson correlation coefficients because they cannot provide a reliable indicator of association in a manner which controls for additional explanatory variables. Examining simple bivariate correlation in a conventional matrix does not take account of each variable's correlation with all other explanatory variables. The main analysis will be derived from appropriate multivariate model, estimated using pooled OLS. Results in Table 4.7 reveal Pearson's Correlation analysis among all variables under investigation. As shown, profitability has an inverse relationship with the FDR, CCC and the components of this cycle; namely, Age of Debtors and Age of Creditors. The results imply that the firm's profitability is inversely related to the components of the CCC, which is consistent with the expectations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter of the study the researcher concludes what has been studied, about effect of working capital policies management on profitability of companies listed NSE. In addition, based on the conclusions drawn, the researcher also forwards certain recommendations.

5.2 Summary and conclusion

From the analysis that has made in chapter four, the researcher draws the conclusion as follows:-

As findings from descriptive statics reveals, the profitability positions of companies listed in NSE, as measured by their return on assets, return on equity and operating profit margin, are on average around 7.80 percent, 3.42 percent and 1.04 percent respectively. Whilst, their liquidity positions, as measured by the current and quick ratios, are on average around 7.08 and 4.04 respectively. Similarly, the average accounts receivable period, inventory holding period and accounts payable period are around 134 days, 134 days and 98 days respectively. On the other hand, cash conversion cycle and current assets to total assets ratio, the two comprehensive measures of working capital investment policy, are on average 275 days and 59.7 percent respectively. Current liability to total assets ratio, used as measure of working capital financing policy, is around 33.5 percent on average.

The financial leverage of the firms, as measured by total liabilities to total assets ratio, is approximate to 71.77 percent on average. From the Correlations Analysis, there exist moderately strong negative relationships between profitability measures and account receivable period, inventory holding period and cash conversion cycle of companies in NSE. Likewise, Account Receivables Period of the firms in NSE weakly and negatively related with the three measures of profitability.

Current assets to total assets ratio of companies listed in NSE is weakly and positively relationship with return on assets return on equity and operating profit margin. Therefore, there is weak negative relationship between aggressiveness in working

capital investment policy and firms profitability. As current assets to total assets ratio increases, the degree of aggressiveness in working capital investment policy decreases (working capital investment is considered to be aggressive when investment in current asses is low) and profitability of firms increases.

Similarly, there is weak positive relationship between current liabilities to total assets ratio and profitability measures of the sampled companies. Therefore, it indicates that there exists a positive relationship between degree of aggressiveness in working capital financing policy and profitability among companies listed in the NSE. A firm is said to be aggressive in working capital financing policy when it uses large amounts of current liabilities relative to total sources of funds. The higher the current liabilities to total assets ratio, the higher is the degree of aggressiveness in working capital financing policy, and so is the corresponding level of profitability.

From the correlation analysis also, there is weak negative association between the two traditional measures of liquidity (Current asset and Quick asset ratios) and profitability measures of the companies.

From the regression analysis, inventory holding period of the companies is negatively and significantly affects their profitability, as measured by return on assets, return on equity and operating profit margin. The implication is that the increase or decrease in inventory holding period will significantly and negatively affect profitability of the firms. This means that the shorter the firm s inventory holding period, the higher will be the profitability and vice versa. It can also be interpreted as, if the inventory takes more time to sell, it will adversely affect profitability.

The cash conversion cycle of the companies is negatively and significantly affects their profitability. The implication is that the increase or decrease in cash conversion cycle will significantly and negatively affect profitability of the firms. It means that the shorter the firm's cash conversion cycle, the higher will be the profitability and vice versa. Thus, the companies can increase their profitability by making their cash conversion cycle shorter to the optimal level.

Current liabilities to total assets ratio of is positively and significantly influences their profitability, measured by their return on assets, return on equity and operating profit margin. The implication is that the increase or decrease in current liabilities to total

assets ratio will significantly and positively affect profitability of the firms listed in the NSE. It means that the higher the amount of current liabilities the firm uses to finance its working capital assets, the more profitable it will be. This implies that there is strong positive relationship between aggressiveness in working capital financing and the firms profitability.

From the coefficients of the regressions, profitability variables of the firms listed in NSE are strongly related with working capital financing policy, as measured by current liabilities to total assets ratio, than working capital investment policy. It means that working capital financing policy affects firms profitability strongly than working capital investment policy. firms therefore, can increase profitability by using more aggressive way of financing for their working capital requirements.

At last, both traditional measures of liquidity (current ratio and quick ratio) of firms are significantly and negatively associated with measures of profitability (Return on asset, Return on Equity and operating profit margin). The listed companies can increase profitability by reducing their liquidity position at least to the standard level (2 for current ratio and 1 for quick ratio)

Likewise, all the three indicators of profitability- return on assets, return on equity and operating profit margin for the companies are negatively and significantly affected by accounts receivable period. The implication is that the increase or decrease in accounts receivable period will significantly and negatively affect profitability of the firms. This means that the shorter the firms accounts receivable period, the higher will be their profitability and vice versa. Thus, this result communicates that managers can increase the profitability of firms by reducing the accounts receivable period to the possible minimum level.

Accounts payable period of the firms has a negative effect on the firms' profitability. This result, however, is not significant. Therefore, profitability of the companies does not depend upon accounts payable period. The significant negative relationship between accounts payable period and profitability is consistent with the view that speeding up payments to suppliers might increase profitability of firms due to substantial discounts for quick payment.

5.3. Recommendations

Based on the conclusions drawn above, the researcher forwards the following recommendations:

Since, it is possible to maximize the profitability of firms by speeding the inventory turnover. The finance managers of the firms listed in the NSE should speed up the inventory turnover rate, so that they can reduce the inventory holding period to its optimum point.

The accounts receivable period of the firms is relatively long. Therefore, firms could administer different mechanisms to reduce their accounts receivable period as minimum as possible.

In a condition where there is a higher discount for early payments, managers should consider maximizing profitability of the firm through reduction of accounts payable period. However, the amount of the discount should be large enough to cover the opportunity cost of early payment and to make some profits.

As it is concluded above, there is negative relationship between Accounts Payable Period and Profitably of firm's measured by return on asset, return on equity and operating profit margin. To reap the advantage of maintaining high account payable period, as it is mentioned in different books, the cause of this negative relationship should be further investigated.

The average cash conversion cycle of firms listed in NSE is high; it is about 275 days on average. Thus, it is recommended that, companies should devise a mechanism that enables them to shorten their cash conversion cycle.

Due to the fact that, profitability variables are strongly related with working capital financing policy, firms should use more aggressive way of financing such as trade credit and short term bank loan for their working capital requirements.

Finally, Managers should strive to increase firms' profitability by improving the efficiency of management of working capital investment and financing policies while, also keeping in view of the trade-off between liquidity and profitability.

5.4 Limitations of the study

The study is limited to the small sample of companies listed in the NSE, so the results of the study are only indicative and not conclusive. Moreover, financial statements used in the study were taken from NSE data base and therefore they might have had some errors.

5.5 Areas for future study

A study should be done that focuses on only companies in one sector or industry, for example the companies in the manufacturing sector should be analyzed at micro level for efficient working capital management so it can be understand that which factors affects the working capital management more and how can working capital management can increase profitability.

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APPENDICES

Appendix I: Companies listed on the NSE as at 20011

Agriculture

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi Ltd
4. Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd

Commercial and Services

1. Express Ltd
2. Kenya Airways Ltd
3. Nation Media Group
4. Standard Group Ltd
5. TPS Eastern Africa (Serena) Ltd
6. Scangroup Ltd
7. Uchumi Supermarket Ltd
8. Hutchings Biemer Ltd
9. Longhorn Kenya Ltd

Manufacturing and Allied

1. B.O.C Kenya Ltd
2. British American Tobacco Kenya Ltd
3. Carbacid Investments Ltd
4. East African Breweries Ltd
5. Mumias Sugar Co. Ltd
6. Unga Group Ltd
7. Eveready East Africa Ltd
8. Kenya Orchards Ltd
9. A.Baumann CO Ltd

Banking

1. Barclays Bank Ltd
2. CFC Stanbic Holdings Ltd
3. Diamond Trust Bank Kenya Ltd
4. Housing Finance Co Ltd
5. Kenya Commercial Bank Ltd
6. National Bank of Kenya Ltd
7. NIC Bank Ltd
8. Standard Chartered Bank Ltd
9. Equity Bank Ltd
10. The Co-operative Bank of Kenya Ltd

Insurance

1. Jubilee Holdings Ltd
2. Pan Africa Insurance Holdings Ltd
3. Kenya Re-Insurance Corporation Ltd
4. CFC Insurance Holdings
5. British-American Investments Company (Kenya) Ltd

Investments

1. City Trust Ltd
2. Olympia Capital Holdings ltd
3. Centum Investment Co Ltd
4. Trans-Century Ltd

CONSTRUCTION AND ALLIED

1. Athi River Mining
2. Bamburi Cement Ltd
3. Crown Berger Ltd
4. E.A.Cables Ltd
5. E.A.Portland Cement Ltd

ENERGY AND PETROLEUM

1. KenolKobil Ltd
2. Total Kenya Ltd
3. KenGen Ltd
4. Kenya Power & Lighting
5. E.A.Portland Cement Ltd

TELECOMMUNICATION AND TECHNOLOGY

1. AccessKenya Group Ltd
2. Safaricom Ltd

AUTOMOBILES AND ACCESSORIES

1. Car and General (K) Ltd
2. CMC Holdings Ltd
3. Sameer Africa Ltd
4. Marshalls (E.A.) Ltd

Appendix II: Summary of the sectors as listed at NSE and Sample using proportionate sampling

Segments	Companies Listed		Included in the sample		% segment included
	Number	Percentage	Number	Percentage	
Manufacturing and Allied	9	23%	7	23%	78%
Commercial and services	9	23%	6	20%	67%
Agricultural	7	18%	5	17%	71%
Construction and Allied	5	13%	4	13%	80%
Automobile and Accessories	4	10%	3	10%	75%
Energy and Petroleum	4	10%	3	10%	75%
Telecomunication and Technology	2	5%	2	7%	100%
Total number of firms used for study	40	100%	30	100%	75%

Appendix III: Financial data to be collected for every firm from audited reports (Data collection forms)

COMPANY NAME:	2005 '000	2006 '000	2007 '000	2008 '000	2009 '000	2010 '000	2011 '000	TOTAL '000	AVERAGE '000
TURNOVER									
COST OF SALES									
PROFIT BEFORE TAXATION									
Finance costs									
Profit before Tax and interest									
Non-current assets									
Inventories									
Trade and other receivables									
Trade receivables									
Current assets									
Total equity									
Long term Borrowings									
Short term Borrowings									
Trade and other payables									
Trade payables									
Receivable Collection Period									
Accout Payable Period									
Inventory Conversion Period									
Cash Conversion Cycle									
Firm Size									
Firm Growth									
Financial Debt Ratio									
Return on Sales									
Return on Total Asset									
Current assets to Total assets									
Fixed Asset to Total asset									

Appendix IV: Variable computation

Variables Type	Variables	Abbr'	Measure	Unit
Dependent Variable	Return on Total Assets	ROTA	Net Profit before Intrest and Tax/Total Assets	%
	Return on Sales	ROS	Net Profit after Tax/Net Sales	%
Indipendent Variabes (Working Capital Management componets)	Receivable Conversion Period	RCP	Average Receivable/ Turnover X365	Days
	Inventory Conversion Period	ICP	Average Inventory/ Cost of Sales X365	Days
	Payabe Deferral Period	PDP	Average Payable / Cost of Sales X366	Days
	Cash Conversion Cycle	CCC	Receivable + Inventory - Payabe	Days
Control Variables	Financial Debt Ratio	FDR	(Short-Term+Long-Term Loans)/Total Assets	%
	Growth ot the Firm	FG	$(Sales_t - Sales_{t-1})/Sales_{t-1}$	%
	Size of the Firm	FS	Natural Logarithim of Sales	Lns

Variable analysis for the study

COMPANY	YEAR	Independent Variables				Control Variable			Dependent Variable		C/ Assets to Total assets	F/Asset to Total Asset
		RCP(Days)	ICP (Days)	PDP (Days	CCC (Days	SIZE (LN)	GROWTH (%	FDR (%)	ROS (%)	ROTA (%)		
SASINI TEA	2011	45.6159	76.7156	92.0390	53.5099	14.7960	0.1380	0.0199	0.1689	0.1097	13.296%	86.704%
SASINI TEA	2010	46.8933	66.0307	84.2816	53.7105	14.6475	0.0504	0.0593	0.4324	0.1598	13.296%	86.704%
SASINI TEA	2009	45.2961	68.1076	74.1402	63.1998	14.5958	0.3329	0.0156	0.2443	0.1039	13.296%	86.704%
SASINI TEA	2008	65.0848	93.2484	91.8998	81.1028	14.1909	0.0895	0.0894	0.8700	0.1952	13.296%	86.704%
SASINI TEA	2007	58.2997	63.5134	79.1370	63.0448	14.0972	0.0426	0.0029	-0.0534	-0.0165	13.296%	86.704%
SASINI TEA	2006	41.4438	57.2237	99.8873	55.0404	14.0537	0.2659	0.0000	0.1894	0.0922	13.296%	86.704%
SASINI TEA	2005	44.5503	51.9078	106.6984	47.0395	13.7446	0.0000	0.0000	-0.3928	-0.1521	13.296%	86.704%

	YEAR	Indipendent Variables				Control Variable			Dependent Variable	
		RCP(Days)	ICP (Days)	PDP (Days)	CCC (Days)	SIZE (LN)	GROWTH (%)	FDR (%)	ROS (%)	ROTA (%)
Nation Media Group Limited	**2011**	109.1173	60.4666	315.8570	(146.2732)	16.2355	17.113%	1.667%	17.845%	32.020%
Nation Media Group Limited	**2010**	114.2655	64.3886	369.3307	(190.6765)	16.0775	17.250%	0.267%	16.021%	26.937%
Nation Media Group Limited	**2009**	135.5691	75.4797	339.7638	(128.7149)	15.9184	-0.748%	1.258%	13.666%	25.376%
Nation Media Group Limited	**2008**	143.9522	68.4969	432.5967	(220.1475)	15.9259	7.363%	2.050%	15.705%	28.818%
Nation Media Group Limited	**2007**	106.5881	53.7484	356.4994	(196.1629)	15.8549	21.239%	4.857%	14.005%	27.968%
Nation Media Group Limited	**2006**	126.3068	52.5661	323.8275	(144.9546)	15.6623	13.259%	6.693%	11.787%	22.058%
Nation Media Group Limited	**2005**	116.3744	56.2652	316.1424	(143.5027)	15.5378	-13.091%	0.000%	12.310%	23.060%
TOTAL KENYA	**2011**	44.7750	34.3139	34.7329	44.3560	18.3431	43.773%	41.825%	-0.077%	4.688%
TOTAL KENYA	**2010**	53.7611	56.0507	56.3079	53.5039	17.9800	96.963%	31.612%	1.424%	7.787%
TOTAL KENYA	**2009**	72.8824	96.6154	72.1274	97.3704	17.3022	-26.669%	43.963%	1.477%	3.997%
TOTAL KENYA	**2008**	32.8074	43.1718	35.9082	40.0711	17.6124	28.204%	34.705%	1.580%	9.587%
TOTAL KENYA	**2007**	53.5743	50.2802	57.2775	46.5770	17.3639	13.360%	22.190%	1.508%	7.676%
TOTAL KENYA	**2006**	57.5115	46.2390	44.0081	59.7424	17.2385	-8.608%	33.025%	1.585%	7.020%
TOTAL KENYA	**2005**	34.1267	34.9229	17.2950	51.7546	17.3285	-13.091%	39.353%	1.584%	10.047%

Scangroup Limited	**2011**	2.0950	151.7193	173.5041	(19.6899)	16.2805	3.518%	3.974%	7.745%	15.078%
Scangroup Limited	**2010**	1.8941	116.9666	114.3151	4.5457	16.2459	91.956%	2.342%	5.637%	10.543%
Scangroup Limited	**2009**	3.5810	148.7793	128.4943	23.8661	15.5938	2.250%	0.717%	6.776%	13.857%
Scangroup Limited	**2008**	3.2533	123.5378	111.3842	15.4069	15.5716	21.291%	0.239%	5.454%	12.143%
Scangroup Limited	**2007**	2.8891	96.6810	95.3612	4.2088	15.3786	58.456%	0.000%	5.121%	21.121%
Scangroup Limited	**2006**	3.0939	106.6881	111.9955	(2.2135)	14.9183	249.414%	0.084%	6.491%	22.726%
Scangroup Limited	**2005**	2.8777	332.7006	340.8664	(5.2882)	13.6672	-13.091%	17.306%	11.770%	13.393%
Eveready East Africa Limited	**2011**	197.0796	57.3512	73.4941	180.9366	14.1339	-15.917%	13.205%	-9.019%	-4.324%
Eveready East Africa Limited	**2010**	174.2299	52.1061	57.5072	168.8289	14.3072	-0.613%	15.319%	0.532%	6.074%
Eveready East Africa Limited	**2009**	138.1238	45.8026	53.1344	130.7920	14.3134	-7.296%	36.357%	1.718%	6.841%
Eveready East Africa Limited	**2008**	162.9915	37.4872	56.2465	144.2322	14.3891	-20.495%	23.346%	1.005%	8.959%
Eveready East Africa Limited	**2007**	141.5135	27.6515	46.9922	122.1728	14.6185	9.987%	16.436%	5.663%	15.805%
Eveready East Africa Limited	**2006**	127.0421	29.1290	45.9885	110.1827	14.5233	-9.586%	20.866%	8.158%	27.405%
Eveready East Africa Limited	**2005**	117.6013	26.0973	37.9194	105.7791	14.6241	-13.091%	17.723%	8.328%	34.180%
Sameer Africa Limited	**2011**	124.6918	105.3336	38.3507	191.6747	15.1171	9.876%	14.526%	2.222%	8.337%
Sameer Africa Limited	**2010**	136.4539	99.1008	40.1446	195.4101	15.0229	2.037%	14.038%	0.740%	3.780%
Sameer Africa Limited	**2009**	169.8817	87.7051	35.6927	221.8941	15.0028	8.305%	12.347%	4.820%	8.896%
Sameer Africa Limited	**2008**	180.2222	105.6408	46.1732	239.6899	14.9230	-12.756%	18.216%	4.984%	9.844%

Sameer Africa Limited	**2007**	143.8096	87.0291	42.5106	188.3281	15.0595	17.647%	22.865%	3.419%	7.199%
Sameer Africa Limited	**2006**	169.1878	102.3872	50.0125	221.5625	14.8969	17.647%	22.865%	3.419%	7.199%
Sameer Africa Limited	**2005**	77.7349	47.0428	22.9787	101.7990	14.7344	4.887%	22.865%	3.419%	7.199%
East African Breweries Limited	**2011**	499.43	51.46	1,509.99	(959.10)	17.6198	18.253%	164.723%	0.182%	8.337%
East African Breweries Limited	**2010**	504.65	46.89	1,289.48	(737.94)	17.4522	10.340%	36.630%	0.065%	3.780%
East African Breweries Limited	**2009**	591.38	43.88	1,302.98	(667.72)	17.3538	5.909%	34.162%	0.459%	8.896%
East African Breweries Limited	**2008**	744.16	47.97	1,237.83	(445.70)	17.2964	25.579%	35.664%	0.464%	9.844%
East African Breweries Limited	**2007**	646.37	47.85	531.29	162.93	17.0686	23.742%	33.700%	0.458%	7.199%
East African Breweries Limited	**2006**	696.27	43.28	103.54	636.01	16.8556	8.967%	19.251%	0.482%	7.199%
East African Breweries Limited	**2005**	314.52	20.87	54.75	280.64	16.7697	2.736%	25.413%	0.447%	7.199%
SASINI TEA LIMITED AND SUBSIDIARIES	**2011**	45.6159	76.7156	92.0390	53.5099	14.7960	0.1380	0.0199	0.1689	0.1097
SASINI TEA LIMITED AND SUBSIDIARIES	**2010**	46.8933	66.0307	84.2816	53.7105	14.6475	0.0504	0.0593	0.4324	0.1598
SASINI TEA LIMITED AND SUBSIDIARIES	**2009**	45.2961	68.1076	74.1402	63.1998	14.5958	0.3329	0.0156	0.2443	0.1039
SASINI TEA LIMITED AND SUBSIDIARIES	**2008**	65.0848	93.2484	91.8998	81.1028	14.1909	0.0895	0.0894	0.8700	0.1952
SASINI TEA LIMITED AND SUBSIDIARIES	**2007**	58.2997	63.5134	79.1370	63.0448	14.0972	0.0426	0.0029	-0.0534	-0.0165
SASINI TEA LIMITED AND SUBSIDIARIES	**2006**	41.4438	57.2237	99.8873	55.0404	14.0537	0.2659	0.0000	0.1894	0.0922
SASINI TEA LIMITED AND SUBSIDIARIES	**2005**	44.5503	51.9078	106.6984	47.0395	13.7446	0.0000	0.0000	-0.3928	-0.1521
Bamburi Cement Ltd	**2011**	55.1161	16.0255	65.4451	5.6965	17.3958	27.815%	3.695%	16.328%	26.386%

Bamburi Cement Ltd	**2010**	77.7284	23.9541	90.9781	10.7044	17.1504	-6.398%	6.407%	18.874%	22.984%
Bamburi Cement Ltd	**2009**	88.8663	29.2849	76.9052	41.2461	17.2165	9.200%	19.936%	23.238%	29.927%
Bamburi Cement Ltd	**2008**	104.0305	39.9657	85.2360	58.7602	17.1285	24.223%	24.157%	12.422%	17.912%
Bamburi Cement Ltd	**2007**	91.2810	35.8050	78.4248	48.6613	16.9116	32.219%	0.000%	17.231%	26.607%
Bamburi Cement Ltd	**2006**	95.5262	21.7171	72.6406	44.6027	16.6323	15.061%	0.000%	16.737%	21.536%
Bamburi Cement Ltd	**2005**	101.9365	21.4218	58.7379	64.6204	16.4920	-13.091%	0.000%	14.827%	21.745%
Athi River Mining Limited	**2011**	74.7117	49.8568	63.1891	61.3795	15.9173	37.157%	42.619%	14.063%	10.622%
Athi River Mining Limited	**2010**	99.1097	77.8934	97.8154	79.1877	15.6014	15.935%	45.365%	13.278%	9.504%
Athi River Mining Limited	**2009**	103.8071	82.6705	105.9261	80.5515	15.4535	11.372%	29.676%	12.552%	8.444%
Athi River Mining Limited	**2008**	83.3081	53.8249	76.0099	61.1230	15.3458	19.005%	42.042%	10.899%	15.256%
Athi River Mining Limited	**2007**	63.7239	49.1852	69.9579	42.9512	15.1718	49.009%	15.739%	10.863%	16.982%
Athi River Mining Limited	**2006**	64.2682	77.7114	65.3529	76.6268	14.7730	17.943%	45.139%	10.156%	9.805%
Athi River Mining Limited	**2005**	69.9177	78.2615	22.3769	125.8024	14.6079	-13.091%	42.575%	9.033%	9.822%
REA VIPINGO PLANTATIONS LIMITED	**2011**	148.7114	46.5828	54.6622	140.6320	14.5649	46.748%	12.044%	22.083%	75.484%
REA VIPINGO PLANTATIONS LIMITED	**2010**	122.5933	50.2836	52.4627	120.4143	14.1813	5.148%	17.396%	4.672%	58.713%
REA VIPINGO PLANTATIONS LIMITED	**2009**	140.1546	57.5945	52.2455	145.5035	14.1311	1.081%	9.317%	10.864%	73.192%
REA VIPINGO PLANTATIONS LIMITED	**2008**	149.0455	63.1215	55.7137	156.4532	14.1204	10.012%	27.500%	12.397%	58.899%
REA VIPINGO PLANTATIONS LIMITED	**2007**	127.0568	52.6596	52.5445	127.1719	14.0249	4.383%	17.700%	9.351%	70.398%

REA VIPINGO PLANTATIONS LIMITED	**2006**	137.0034	43.2953	49.8299	130.4689	13.9820	6.958%	18.124%	9.531%	75.033%
REA VIPINGO PLANTATIONS LIMITED	**2005**	187.5609	43.9935	60.3024	171.2520	13.9148	-13.091%	18.929%	11.270%	69.325%
Kenya Electricity Generating Company	**2011**	164.8641	204.8467	403.6726	(33.9618)	16.5383	32.246%	42.640%	13.665%	3.508%
Kenya Electricity Generating Company	**2010**	149.6897	212.8288	387.4649	(24.9464)	16.2588	-15.112%	40.854%	28.552%	2.143%
Kenya Electricity Generating Company	**2009**	134.0205	149.8180	635.8998	(352.0613)	16.4226	14.057%	25.039%	15.273%	4.892%
Kenya Electricity Generating Company	**2008**	166.0404	180.9709	728.8515	(381.8401)	16.2911	-18.302%	19.625%	49.602%	3.623%
Kenya Electricity Generating Company	**2007**	111.5558	134.8009	304.4173	(58.0606)	16.4932	1.760%	16.735%	16.807%	5.171%
Kenya Electricity Generating Company	**2006**	58.2160	103.2566	117.9941	43.4785	16.4758	17.647%	28.459%	26.356%	6.738%
Kenya Electricity Generating Company	**2005**	62.9362	111.6288	127.5612	47.0038	16.3133	-13.091%	28.459%	26.356%	6.738%