

**THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT
AND PROFITABILITY OF THE DAIRY INDUSTRY IN KENYA: A CASE
STUDY OF NEW KENYA CO-OPERATIVE CREAMERIES LTD.**

BY

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DECLARATION

STUDENT'S DECLARATION

This research project is my original work and has not been submitted for a degree in any other university.

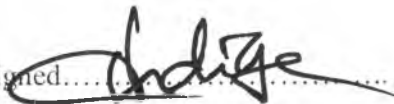
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SUPERVISOR'S DECLARATION

This research project has been submitted for examination with my approval as the candidates University Supervisor.

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DEDICATION

Dedication is to my family who have encouraged and supported me both financially and morally throughout the period of project writing. Without their support, this work would have been much more difficult to accomplish but their roles has been an invaluable asset.

Thank you for always being there.

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ABBREVIATIONS

AROD	Accounts Receivables Outstanding
APOD	Accounts Payable Outstanding Days
CCC	Cash Conversion Cycle
IOD	Inventory Outstanding Days
KCC	Kenya Co-operative Creameries
LR	Liquidity Ratio
WCM	Working Capital Management

ABSTRACT

The objective of this study was to establish the relationship between working capital management and profitability in the dairy industry with a case study of New KCC Ltd. The aim study this was to find out effects of profitability by exploring the major variables that constitute working capital. The key factors explored by the study were: Inventory, debtors, cash and creditors. This was compared to net income which was a measure of profitability. The research study drew its focus into these factors which addressed the research objectives and research questions.

A detailed literature review with theoretical review and critical analysis was presented. Also summary and gaps to be filled had also been identified. The data was derived from the financial statements of New KCC Ltd for a period of four years 2008-2011 to analyse the relationship between working capital variable on the net income a measure of profitability. Pearson correlation and regression analysis were used to analyse data.

There was a positive relationship between net income and accounts payable outstanding days and a negative relationship with inventory outstanding days, accounts receivables outstanding days which in turn influenced the cash conversion cycle. The results proposed optimal inventory levels to be maintained, prompt debt collection measures to be adopted as well as negotiated extended credit facilities with suppliers without compromise of their favourable relationship. This enhanced cash inflows that will provide revenue generation resulting to increased profitability.

It is recommended that training and working capital awareness is vital as it will promote adoption of working capital management practices for the dairy firms staff. Academicians will have useful information critical to financial management especially in the working capital management thus are able to develop more robust working capital models. Policy makers will formulate policies that promote sound business environment especially during economic instabilities. Adoption of sound working capital management practices eventually promote profitability which in turn result to growth and more profitable investments amidst volatile economic market, increased costs of production, challenging weather conditions and a tough competitive regime.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This chapter introduces working capital management and profitability measures as well as the objectives of the study which have emerged from the background of the dairy industry and in addition to the research problem. This research aims to benefit finance managers, the government, inventors and scholars.

1.1.1 Working Capital Management

Horne and Wachowicz (2000) define working capital as the nerve centre and the life blood of any business. A business ought to have adequate working capital as excess capital or inadequate capital both have an adverse effect on the profitability and the liquidity positions. Working capital comprises cash, marketable securities, debtors, creditors and inventories. It is important to retain the right level of working capital as no business can run effectively without sufficient quantity. If the working capital is weak, the business can hardly prosper or survive.

Working capital management is an important area in the field of financial management as it involves making decisions on the amount and composition of the current assets and the financing of these assets. Current assets involve those assets that which return cash to the firm in the normal course of business and in a short period of time that is within a year and a temporary investment that can be readily converted into cash when needed, Joshi (1994).

A firm's main objective is profit maximization. Another important aspect is reserving the firm's liquidity to avoid solvency and bankruptcy. Therefore, there must be a tradeoff between profit maximization objective and that of liquidity. A firm's survival relies on the profitability and increasing profit at the cost of liquidity yields problems to the firm, Mwangi (2010). Maintaining an adequate working capital is not only important in the short run, but also in ensuring survival in the long run postulates Battacharya (2001).

According to Ross, et al (1990), working capital is the amount readily available in a firm being the difference of current assets and current liabilities and these funds are used to finance the conversion operating cycle from the delivery of the raw materials to the paying of the invoices. The higher the figure the more liquid are the milk processing firms and the higher is their ability to pay its debt.

1.1.2 Profitability Measures

Nyaga (2007) observes that one of the two most important requirements of liquidity is profitability. According Pyle (1981), Profitability ratios measure how well a company is performing by analyzing how profit was earned relative to sales, total assets and net worth. Financial business ratios are used to measure a company's efficiency. Profitability ratios measure the firm's use of its assets and control of its expenses to generate an acceptable rate of return. In addition, these ratios are used to assess a business' ability to generate earnings as compared to expenses over a specified time period.

Return on Sales (Profit Margin) Ratio – This ratio measures the profits after taxes on the year's sales. The higher this ratio, the better prepared the business is to handle downturns brought on by adverse conditions. The profit margin ratio provides clues to the company's pricing, cost structure and production efficiency. The profit margin ratio is a good ratio to benchmark against competitors. A low profit margin ratio indicates that low amount of earnings, required to pay fixed costs and profits, is generated from revenues. This indicates that the business is unable to control its production costs.

Return on Assets (ROA) Ratio – This ratio shows the after tax earnings of assets and is an indicator of how profitable a company is. Return on assets ratio is the key indicator of the profitability of a company. It matches net profits after taxes with the assets used to earn such profits. A high percentage rate will tell you the company is well run and has a healthy return on assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings.

Return on Net Worth Ratio – This ratio measures the ability of a company's management to realize an adequate return on the capital invested by the owners in the company. It measures a company's profitability and it reveals how much profit a company generates with the money that the equity shareholders have invested. Therefore, it is also called 'Return on Equity' (ROE). This ratio is useful for comparing the profitability of a company to that of other firms in the same industry.

Net Profit Margin - The profit margin shows the relationship between net income (profit) and sales. It is a percentage of revenue remaining after all operating expenses, interest, taxes and preferred stock dividends (but not common stock dividends) have been deducted from a company's total revenue. Shareholders look at net profit margin closely because it shows how good a company is at converting revenue into profits available for shareholders.

Basic Earning Power Ratio -- The basic earning power ratio (or BEP ratio) compares earnings apart from the influence of taxes or financial leverage, to the assets of the company. This ratio is useful for comparing firms in different tax situations and with different degrees of financial leverage. This ratio is often used as a measure of the effectiveness of operations. Basic Earning Power measures the basic profitability of Assets because it excludes consideration of interest and tax

Earnings Per Share - Earnings per share (EPS) is the amount of earnings per each outstanding share of a company's stock. It relates income to ownership on a per share basis, and is used in evaluating share price. Earnings per share is generally considered to be the single most important variable in determining a share's price. It is also a major component used to calculate the price-to-earnings valuation ratio.

Gross Profit Ratio - The gross profit ratio indicates how much of sales is available to meet expenses and profits after merely paying for the goods that were sold.

1.1.3 Relationship between Working Capital Management and Profitability

According to Eljelly (2004), for a company to improve its performance and hence profitability, enforcement of an effective working capital management is indispensable. Working capital management involves an analysis of key performance ratios and the management of the individual components of working capital. Financial ratio analysis leads the company management in identifying areas of focus such as management of inventories, cash, accounts receivables and accounts payable.

The main objective working capital on business profitability has to do with maintenance of working capital at appropriate level, and availing enough funds as and when they are needed. To accomplish these two objectives, the management has to consider the composition of current assets pool. The working capital position sets the various policies in the business with respect to general operations like purchasing, financing, expansion and dividend .The subsidiary objective of Working Capital Management is to provide adequate support for the smooth functioning of the normal business operations of a company based on liquidity and profitability. Profitability relies on the total amount of financial resources at the disposal of a company which is often limited. This depends on the alternative uses of these resources; the larger the amount of investment in current assets, the smaller will be the amount available for investment in other profitable avenues according to the conservative approach. Tradeoff between liquidity and profits is a very critical aspect that management needs to frequently address as the firms survival relies on the profitability. Bankruptcy and solvency issues are brought about by the poor liquidity and a good liquidity promotes the firm's ability to meet its shorter objectives as and when they fall due. This issues influence the performance of the firm in the industry, Deloof (2003)

An efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates a firms inability to meet the short term obligations as and when they fall due on one hand and avoid excessive investments

on the other hand, Eljelly (2004). Working capital management is one of the most important issues that finance executives strive to identify the basic working capital drivers and appropriate level of working capital, Lamberson (1995).

Historically, according to Winraub and Vissicher (1998), working capital management passed through control, optimization and value measurement stages. Working capital management originally started as a systematic approach of controlling the incoming, outgoing, remaining cash, receivables and inventories. At the control stage, the main objective is that the working capital is not misappropriated for personal benefits of those entrusted in its management. Practitioners developed various control measures over the receipts and collection of cash, receipt and issuance of inventory, increasing receivables through credit sales, and decrease in receivables through cash collection. At optimality management phase, the main focus was on the physical safety of the working capital assets items, minimization of related costs and maximization of related income. At this stage models were developed to ensure that firms do not get problems due to liquidity issues or holding excessive working capital. Under the control and optimality approaches, the profit aspect is taken care of as a main measure of managerial efficiency.

Lamberson (1995), in addition says the value measurement approach of working capital management concentrates on how to help managers in creation and measurement of value without disregarding the control and optimality objective. Companies focusing on cash management, are larger but younger, and face less cash sales, seasonal activities and cash flow problems. Companies focusing more on inventory management are smaller and younger and have more outsourcing and longer production cycles. Companies focusing on credit management methods have less profitability and are interested in growth; moreover they benefit from less credit purchase and cash sales. Lazaridis and Tryfonidis (2006) have suggested that for growth, companies should use credit policies for customers and invest more in inventories

According to Murali (2000), working capital management involves the relationship between firm's short term assets and its shorter liabilities. The goal of working capital management are to enable the firm continue with its operations and that it sufficient ability to satisfy maturity, shorter debts and upcoming operational expenses. An optimal level of working capital is the one which a balance is achieved between risk and efficiency. It requires a continuous monitoring to maintain the proper level in various components of working capital- trade receivables, inventory, trade payables, working in progress, cash in hand, cash at bank, provision for the payment of the taxes, bad debts written off, adverse fluctuation of exchange rates and trade advances.

1.1.4 Dairy Industry in Kenya

Agribusiness firms such as the dairy firms need to particularly control and monitor their working capital. This is because they are generally associated with a higher proportion of current assets (up to 60%) relative to large firms, less liquidity, volatile cash flows, and a reliance on short-term debt, Peel et al. (2000).

Although dairy farming in the semi-arid region of Kenya is largely subsistence, the trend is gravitating towards commercialization. A recent study indicates that close to 15% of dairy cattle farmers produce between 11 - 20 litres of milk/day Njarui *et al* (2009) implying that there is surplus milk available for direct sale and for processing into other milk derivatives. Further the study revealed that 43% were unable to sell their milk during the milk glut period particularly in January and February.

Processing and marketing of milk are important levels of dairy development and growth of the industry. Kenya has one of the largest dairy industries in sub-Saharan Africa with a milk market share of 24% in the region, Karanja (2003). By the end of 2007, there were 52 licensed processors with an inbuilt capacity of 2.9 million litres a day but only 25 were active MoLD (2008). They process a wide range of products including fluid, cultured and solid milk products such as cheese, ghee, condensed and evaporated milk, ice-cream and frozen desserts (EPZ 2005). On the other hand, marketing is important

because it links consumers to the products. However, in spite of expanding dairy farming and improved milk production in the semi-arid Kenya, there is not even a single large commercial processor based in the region. The large milk processors are concentrated in Nairobi and the traditionally dairy regions of central highlands and Rift Valley region. As a result most of the milk products requirements for semi-arid are imported from these regions.

There is good market opportunity for different milk products due to expanding population and improved income in the rural urban trading centers within the region. In order to improve smallholder dairy production in the region, milk production must be accompanied by processing to produce a variety of products to meet market opportunities. Further milk is highly perishable thus there is need to process into products that have a longer self-life, easier to handle and transport to long distance market outlets. Processed milk products can also be stored and offloaded into the market when demand arises, Karanja (2003).

Information on functioning of the milk processing and marketing and linkages along the dairy cattle value chain is not available because no study has been carried out previously in the region. This can be achieved by obtaining baseline information on the level of processing and marketing in the region and constraints and opportunities for improvements.

1.2 Statement of the Problem

Dairy firms generally need to particularly control and monitor their working capital. This is because they are generally associated with a higher proportion of current assets (up to 60%) relative to large firms, less liquidity, volatile cash flows, and a reliance on short-term debt, (Peel et al. 2000). Evidence suggests that mostly these firms practice adhoc or subjective working capital decision-making rather than modern approach for creating the value for the firm Nayak and Greenfield (1994);Khoury et al. (1999). Peel and Wilson (1996) assert that these firms should adopt proper working capital management practices

in order to reduce the probability of business closure, as well as to enhance business performance.

Viqar (2009) addresses major constraints with the dairy firms which are lack of managerial power, knowledge, experience and expertise to take decision at all the fronts, lack of investment options available, financing sources, labor. This constrains the achievement of dairy firm's objectives. Dairy firms are excessively investing in current assets. They keep cash and inventory only for transaction purposes with an emphasis on the control aspect. Credit policy is also critical in all the firms in the real business sense. With the dairy firms, the level of receivables is not controlled mainly due to untimely payment by the related enterprises. Moreover, the inventory balance is also wanting in terms of control because of inability to balance increase in sales along with the increase in production. The cumulative effect of this is the increase of both bank overdrafts and creditors. Working capital levels are increasing because management has no opportunity or motive for investing working capital or minimizing its holding costs. Such positions result to the inability to maintain sufficient liquidity, to increased inventory and receivables and this affects suppliers and customers

Knowledge and understanding of the working capital management practices of dairy firms is currently inadequate. Research in this area is determined by absence of an agreed framework for model development and hypothesis formulation. Little theoretical justification has been provided for the lower take-up of working capital management practices by dairy firms Pike and Pass (1987); Mitchell et al. (1998).

This study will therefore focus on the New KCC Ltd which has operated in Kenya since 1925. This makes the New KCC the oldest dairy processor in the Kenya. New KCC has operated in an economic environment characterized by rising costs of production, volatile economic market, challenging weather conditions, milk gluts and a tougher competitive regime. Despite encountering these challenges, New KCC has been resilient and has continually delivered an exceptional performance and increased shareholders value yet it

had collapsed and was revived. Since its re-emergence in the dairy market in 2003, this resulted to the stability of an increasingly liberalized dairy sector and has been to internally generates funds to embark on its growth strategy which increases the producers and consumer base and has once again produced record levels of revenue and profits. It has also managed to adapt in spite of Management of working capital will stabilize the price fluctuations in the milk industry, deal with excessive milk production and milk shortages which are frequent in the country.

In Kenya, Ngaba (1990), studied working capital management practices in Kenyan secondary schools, case study of Kikuyu Division, Kiambu County. Nyakundi (2003) did a survey of working capital management policies among public companies in Kenya. In addition, Kiithi (2008) carried out a study on the relationship between working capital management and profitability of listed companies in NSE .It is therefore evident that no study has been done on the relationship between working capital management and profitability of the dairy industry in Kenya making this area to remain unexplored. This current study seeks to bridge this gap.

The research questions that will be of help in addressing the research problems outline above therefore include:

- i. What does the dairy industry use as measures of working capital management and profitability?
- ii. What is the significance of working capital management and profitability in the dairy industry?

1.3 Objectives of the Study

- i. To establish the working capital and profitability measures in the New KCC.
- ii. Establish the relationship between working capital management and profitability in the New KCC

1.4 Importance of the Study

The study seeks to be of benefit to the following with its findings

Finance Managers of dairy industry will be able to foresee financial challenges and opportunities thus act promptly and appropriately. This will help them maintain a favorable working capital level that will make the firm have an improved performance as well as increase in profit which is their main objectives.

The Government will use this knowledge acquired from the economic planners to formulate policies that promote sound business environment especially during economic instabilities.

Potential investors will be able to assign more realistic values in the milk processing firms by evaluating the underlying opportunities and threats faced by the prevailing milk processors.

Scholars and Researchers will use the study to obtain useful information critical to financial management especially in the working capital management thus are able to develop more robust working capital models.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

To conceptualize the principles of working capital in view of the research problem and objective, this section looks at various working capital concepts and the underlying theories and practices specifically the following will be discussed: Theoretical framework, empirical findings by scholars on working capital management practices and finally the conclusion.

2.2 Theoretical Review

According to McInnes (2000), the theories of working capital management contends that if working capital is managed according to the prescriptive theories then it would be expected that businesses would invest in working capital, finance working capital, monitor factors that influence working capital, manage cash, accounts receivable, inventory, accounts payable, the cash conversion cycle (aggregative approach), and measure and analyze performance to ensure that the long term (fixed) assets are utilized effectively and efficiently. Theories of working capital management are:

2.2.1 Baumol Inventory Model

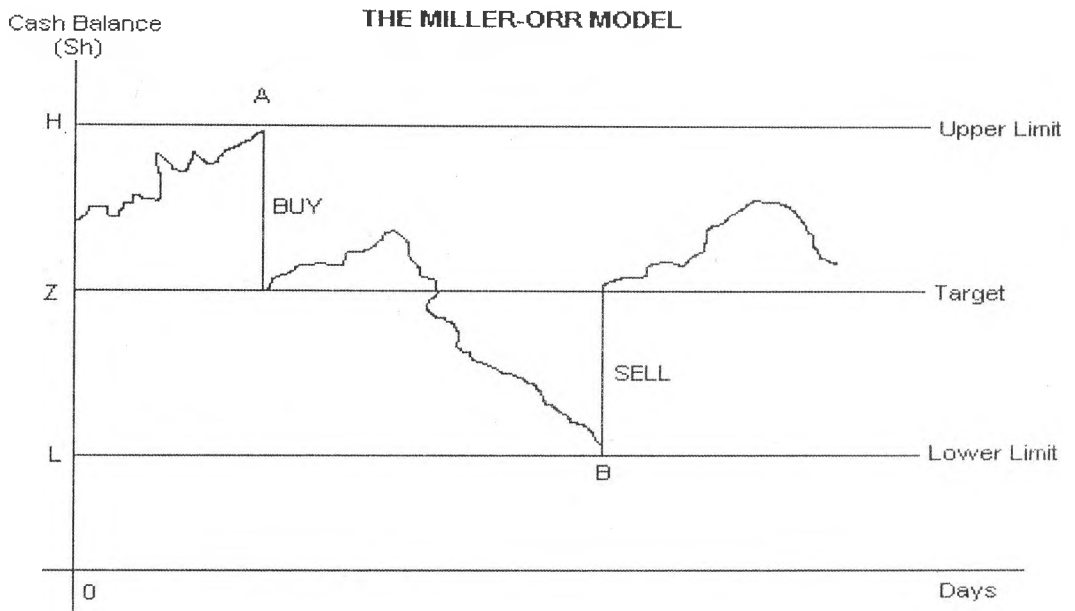
Baumol (1952), developed an inventory model based on the Economic Order Quantity with an objective of determining the optimal cash balance. He made assumptions such as the firm's ability to forecast its cash requirements with certainty, receive specific amount at regular intervals, cash payments occur uniformly over a period of time, steady rate of cash outflow, opportunity cost of holding cash is known and does not change over time, cash holdings incur an opportunity cost in the form of opportunity foregone, the firm incur the same transaction costs whenever it converts securities to cash. However Baumol model had limitations for instance assuming a constant disbursement rate, cash flows in reality occur at different times, different due dates; assumes no cash receipt during projected period, no safety stock is allowed for, reason being it only takes a short time to sell marketable securities. Most firms try to minimise the sum of the cost of holding cash

and the cost of converting marketable securities to cash. Baumol's cash management model helps in determining a firm's optimum cash balance under certainty.

Inventories are stocks of products a company is manufacturing for sale and components that make up the final product. Inventories constitute the most significant assets of a large majority of the companies in Kenya. According to Nyakundi (2003) average inventories constitute 60% of current assets in public companies listed at the Nairobi Securities Exchange. According to Ochieng (2007), large considerable amount of funds is required to maintain the large size of inventories. It's therefore absolutely imperative to manage inventories effectively and efficiently by adopting working capital management policies to avoid unnecessary investment in them. Neglecting working capital policies jeopardizes the long run profitability of a firm which would result to a firm failing ultimately.

2.2.2 Miller's and Orr's Cash Management Model

Miller and Orr (1966), came up with a cash management model which lets a company move its cash balance within two limits that is the upper and the lower limits. The company buys and sells the marketable securities if only the cash balance is equal to any of these. When the cash balance of a company touches the upper limit, it can purchase a number of saleable securities thus it returns to the desired level. If it however reaches the lower limit, the company trades its saleable securities and thus gathers enough cash to fix the problem. The assumptions are that in such cases, the average value of the distribution of the net cash flow is zero and the distribution of the net



Source: Finance.mapsofworld.com(2012)

2.3 Detailed Discussion of Concepts

According to Block and Hirt (1992), financial managers measure their performance based on the compliance and non compliance to the desirable administrative and operational practices based on their review on the working capital management approaches which are regarded as the best approaches designed to enable organizations maximize their value. Key working capital ratios are reviewed in comparison to the policy declaration and budgetary framework. The ratios include average collection period, cash conversion cycle, day's inventory outstanding, day's payable outstanding, day's sales outstanding and working capital ratios.

Schein (2010) found that the cash conversion cycle is important because it represents a number of days a firm's cash remains tied up within the operations of the business. It is also a powerful tool for assessing how well a company is managing its capital. A low cash conversion cycle depicts a healthy company. A cash flow crunch is got or is evident if when the results of the cycle are compared over time and a rising trend is noted.

Working capital can be measured by obtaining a relationship between current assets and fixed assets where fixed assets is a constant. Current assets are divided with fixed assets higher ratio indicates a conservative policy while a lower ratio reflects an aggressive current asset policy, Horne (1970).

Pandey, (2005) describes that estimating working capital needs of a firm may require a review of the concept of the operating cycle. This could be done either by estimating the average holding period for current assets and relating them to companies based on the past experiences or estimating the working capital requirements as a ratio of sales or estimating the working capital requirements as a fraction of fixed investments. A number of factors influence the choice of the method to be used. Seasonal variations in operations, accuracy of sales forecast, variability in sales price and investment cost would be considered. Production cycle, credit and collection policies of the firms are likely to impact on working capital needs. These variables should therefore be given appropriate weight in projecting working capital requirements.

2.4 Relationship between Working Capital Management and Profitability

Nyakundi (2003), says high rate of return with reference to the choice of working capital financing is associated with low liquidity hence he notes that low profitability would be expected to be associated with high liquidity. In the event of low or no profitability, Nairobi Securities Exchange listed firms investors would lose confidence and may engage in a run the firm. This eventually results to failure since inappropriate working capital management policies would further result to inability to take advantage of discounted loans and other opportunities, lower profitability, delay collection of interest and principal payment for creditors and damage customer's relationships.

Shin and Soenen (1998) highlighted that efficient Working Capital Management (WCM) was very important for creating value for the shareholders. The way working capital was managed had a significant impact on both profitability and liquidity. The relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock

return was examined using correlation and regression analysis, by industry and capital intensity. They found a strong negative relationship between lengths of the firm's net trading cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns.

According to Viqar (2009), if a firm has inadequate working capital – the money necessary to keep your business running – the firm is doomed to fail. Many firms, that are profitable on paper, are enforced to “close their doors” due to their helplessness to meet short-term debts when they come due. However, by implementing sound working capital management strategies, your enterprise can flourish; in other words, assets are working for the firm. The objective of Working Capital Management is to make certain that the firm is able to carry on its operations and that it has enough cash flow to satisfy both maturing short-term debt and upcoming operational expenses. In order to improve the working capital management practices, it is essential for the finance managers to adopt a proper approach of working capital decisions making to drive their respective firms towards success in order to generate the value for the shareholders. In addition to the proper approach, there may be some other factors that may prove to be important while dealing with working capital decision making and certainly these factors may include ownership, government regulation, managerial empowerment and cultural factors.

According to Adina (2010), the management of operating cycle is the most important section of the company's financial management. The objective of operating cycle's management is that of any capital investment: the most efficient allocation of capital in terms of risk decrease. The amortization of risk-profitability relation is mostly achieved within the balance between the need of circulating assets and sources mobilized for its funding. To meet the need for profitability, the management of circulating assets aims at achieving the operating cycle with a minimum level of circulating assets, and the management of circulating liabilities aims at the lowest cost of procuring the necessary capital. In order to meet the need for risk decrease, the management of circulating assets aims at eliminating the stock rupture, the lack of liquidities; a concern accompanied by

higher operating costs and reduced profitability. Respect to circulating liabilities, the financing sources constant, the financial autonomy of the operating cycle, preoccupations accompanied by increases in the cost of purchasing the necessary capital, are explored.

2.5 Empirical Review

Among the studies of the relationship of working capital and profitability in Kenya, Ochieng (2006) on his study on the effect of the relationship between working capital management of firms listed at Nairobi Securities Exchange and the economic activity in Kenya found that liquidity of the firms as measured by current and quick ratios increases with economic expansion and decreases during economic shut downs. He however says that liquidity positions reacted differently to various economic indicators such as inflation and lending rates. With inflation, Ochieng study showed that for most firms' inflation was not significant. He says a massive 83% of firms did not find inflation significant meaning working capital policy decisions are indifferent to the fluctuations of inflation. With lending rates however, he found that lending rates indeed affect the working capital policy of a firm.

A study undertaken by Nyaga (2007) concluded that performance of manufacturing firms listed in the Nairobi Securities Exchange relied heavily on shorter sources of financing citing an urgent need of being liquid. He observed that the firms compromised liquidity at the expense of profitability. It could be true that overreliance on the needs to be liquid could lead to low profitability and this calls for a proper working capital management policy which has positive impact on a firm's profitability.

Nyakundi (2003) observed that aggressive working capital management policy is the most predominant among public companies in Kenya and this is partly due to the high cost of long term funds in Kenya which for most part of the research period which was five years. He also noted that there was no significant difference between working capital management policies across the five sectors listed at the Nairobi Securities Exchange. He noted that working capital management policy among the public companies in Kenya is

yet to be documented yet under an aggressive policy the firm finances a part of its permanent current assets with short term financing. In fact, some extremely aggressive firms even finance a part of their fixed assets with shorter financing.

A survey conducted by Kamath, *et al* (1985) indicated that most large firms invest surplus cash in money markets instruments, commercial papers, certificates of deposit, repurchase agreement, treasury securities, and banker's acceptance as a means of managing their extra surplus.

According to Afza and Nazir (2009), the present study investigates the relationship between the aggressive/conservative working capital asset management and financing policies and its impact on profitability of 204 Pakistani firms divided into 16 industrial groups by KSE for the period 1998-2005. The impact of aggressive/conservative working capital investment and the financing policies has been examined using panel data regression models between working capital policies and profitability. The study finds a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies. The firms report negative returns if they follow an aggressive working capital policy. These results were further validated by examining the impact of aggressive working capital policies on market measures of profitability, which was not tested before. The results of Tobin's were in line of the accounting measures of profitability and produced almost similar results for working capital investment policy. However, investors were found giving more value to those firms that are more aggressive in managing their current liabilities.

A study done by Lyroudi and Lazaridis (2000) examined cash conversion cycle of food industry and compared the results with the respective underlying current ratio and quick ratios and their significance on the profitability and firm size. They found a positive relationship between the cash conversion cycle and the current and quick ratio liquidity parameters. In addition the cash conversion cycle, return on assets, net profit margin and times interest earned ratios were also positively related. However, the current and quick

ratios were inversely related to the debt equity ratio. Overall, the study also found no difference between large and small firms in terms of their liquidity ratios.

Pandey and Parera (1997) studied working capital management policies and practices among private sector manufacturing companies in Srilanka. They collected information through questionnaires and direct interviews with the chief financial officers of a sample of manufacturing companies listed in Columbus stock exchange. The study concludes that most companies in Srilanka follow informal working capital policies whose nature and approach is affected by the size and profitability of a company.

Lamberson (1995) analyzed how small firms changed their working capital structures in response to changing economic activities. He found little or no relationship in them. Working capital was measured using current ratio, current assets to total assets ratio and inventory to total assets ratio. Economic activity was measured using annual average economic indicator index.

Afza and Nazir (2007) investigated the relationship between aggressive and conservatism working capital policies for 17 industrial groups and a large sample of 263 public limited companies listed in Karachi stock exchange for a period of 1998-2003. Using ANOVA and LSD tests, the study found significant differences among their working capital investment and financing policies across different industries. Moreover, rank order correlation confirmed that these significant differences were remarkably stable over the period of 6 years of study. Finally, ordinary least regression analysis found a negative relationship between the profitability measures of the firms and degree of aggressiveness of working capital investment and financing policies.

Chiou and Cheng (2006) analyzed the determinants of working capital management. The paper explored how working capital management of a firm is influenced by the different variables like business indicators, industry effect, operating cash flows, growth opportunity for a firm, firm performance and the size of the firm. The study provided

consistent results of the leverage and operating cash flow for both net liquid balance and working capital requirements. However, variable like business indicators, industry effect, growth opportunity, performance of firm, size of the firm were unable to produce consistent conclusions for net liquid balance and working capital requirements of firms.

Ghosh and Maji (2003) in this paper made an attempt to examine the efficiency of working capital management of the Indian cement companies during 1992 – 1993 to 2001 – 2002. For measuring the efficiency of working capital management, performance, utilization, and overall efficiency indices were calculated instead of using some common working capital management ratios. Setting industry norms as target-efficiency levels of the individual firms, this paper also tested the speed of achieving that target level of efficiency by an individual firm during the period of study. Findings of the study indicated that the Indian Cement Industry as a whole did not perform remarkably well during this period.

Smith and Begemann (1997) emphasized that those who promoted working capital theory shared that profitability and liquidity comprised the salient goals of working capital management. The problem arose because the maximization of the firm's returns could seriously threaten its liquidity, and the pursuit of liquidity had a tendency to dilute returns. This article evaluated the association between traditional and alternative working capital measures and return on investment (ROI), specifically in industrial firms listed on the Johannesburg Stock Exchange (JSE). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved association with return on investment to that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression corroborated that total current liabilities divided by funds flow accounted for most of the variability in Return on Investment (ROI). The statistical test results showed that a traditional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest associations with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant associations whilst

only one of the newer working capital concepts, the comprehensive liquidity index, indicated significant associations with return on investment.

It has been showed that by minimizing the amount of funds tied up in current assets; firms can reduce financing costs and/or increase the funds available for expansion. But most firms may not realize that instantly. According to Wilner (2000) most firms extensively use trade credit despite its apparent greater cost, and trade credit interest rates commonly exceed 18 percent and Deloof (2003) also found that according to National Bank statistics during 1997, Belgian companies had accounts payable of only 13% of the total asset and accounts receivable and Inventory of 17% and 10% of the total asset respectively. Even in the UK corporate sector more than 80% of daily business transactions are on credit terms as found by Summers and Wilson (2000).

Siddiquee and Khan (2009), has observed that, firms which are better at managing working capital are found to be able to make counter cyclical moves to build competitive advantage. And they are also better at generating fund internally and also face lesser trouble while seeking external sources of financing. According to Raheman and Nasr (2007) Pakistani firms' performance showed a significant relationship with the working capital management. The influence of working capital efficiency also applies to e-business. And that is the reason Hoyer, Janner, Mayer, Raus and Schroth (2006) found that the cash conversion cycle is useful for e-businesses as well and that it meshes well with the balanced scorecard approach to quality management currently in vogue

Khalid, *et al* (2011) examined the relationship between working capital management and firm's profitability of fourteen firms listed at Karachi Stock Exchange. The main objective of the study was to find whether financial ratios affect the performance of the firms in the special context of cement industry in Pakistan. The result concludes that there is a moderate relationship between working capital management and firm's profitability. Future research should investigate generalization of the findings beyond the Pakistan manufacturing sector. The scope of further research may be extended to the

working capital components management including cash, marketable securities, receivables, and inventory management.

2.6 Conclusion

Working capital is critical for the survival and prosperity of all businesses. The theories define how financial actors should behave if they hope to effectively manage volatile resources. Empirical studies reviewed so far have confirmed that companies that are more aggressive in managing working capital are generally profitable compared to their counterparts who have less aggressive policies and practices.

Working capital is highly important in firms as its used to generate further returns for shareholders. If improperly managed, allocating more than enough renders management non efficient and reduces the benefit of short term investments. If working capital is too low, the company misses a lot of profitable investment opportunities or suffer shorter liquidity crisis leading to degradation of the company credit, inability to respond effectively to temporary capital requirements

The above studies provide solid base and important aspects regarding working capital management. They also provide results and conclusions of researches done on working capital management. Given the purpose of this study is to examine the nature of working capital in milk processing firms and the impact of their composition and management efficiency on performance in view of known sound management practices and standards referred under theoretical framework and tested empirical studies. It is hoped the study will provide answers to the objectives of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology focused on research design, population study, data collection procedures and data analysis.

3.2 Research Design

This research was conducted using case study research in which the relationship between working capital management practices and profitability as well as performance of milk processing firms was evaluated by analyzing New KCC Ltd. This mode of research was chosen because New KCC Ltd has operated in Kenya since 1925. This makes the New KCC Ltd the oldest dairy processor in the Kenya and is still in operation even after its revival. It quickly acquired more market share and withstands stiff competition from emerging dairy processors.

3.3 Population

Population is defined as the total collection of elements about which we wish to make some inference. According to Cooper and Schindler (2003) a population element is the subject such as a person, an organization, customer database, amount of quantitative data on which measurement is being taken. New KCC Ltd will be used as a representative of the dairy firm since it is the oldest milk processing firm and it managed to competitively stabilize amidst its few years after revival.

3.4 Data Collection Technique

Data that was used in this study was secondary data from the audited financial statements of New KCC Ltd. The specific data required was net income, purchases, current assets (inventory, accounts receivable, cash, and bank), current liabilities (accounts payable) and sales. Taking audited financial data of four consecutive years (2008-2011) had the advantage of unbiased selectivity by both researcher and provider and was easily accessible.

3.5 Data Analysis

Quantitative data analysis which refers to the analysis of working capital decisions using financial performance ratios was used. This study aimed at establishing the working capital practices in the milk processing firms in Kenya through a case study of New KCC Ltd and its effect on profitability. To attain this, the firm's statistical measures on working capital management policy and profitability were computed. Data was analyzed to determine the most prevailing working capital practices in the milk processing firms in Kenya. The working capital ratios spread for four years were calculated from year 2008 to year 2011.

To study the relationship between working capital management and profitability, Pearson correlation and regression analysis were used. For the purpose use of the money for longer of simplicity and easy identification of each variables. The regression analysis considered profitability ratios as dependent variable and various working capital ratios and liquidity ratios as independent variables.

Dependent variable		
Net Income	Income available to common stock holders	NI
Independent variables		
Inventory Outstanding Days	Describes the average number of days taken by accompany to convert its inventories into sales	IOD
Accounts Receivables Outstanding Days	Describes the average number of days taken by a company to collect its outstanding days	AROD
Accounts Payable Outstanding Days	Describes the average number of days a company pays off its accounts payable during a year	APOD
Cash Conversion Cycle	Describe the ratio of current assets to total sales revenue.	CCC

Here, cash conversion cycle is used to measure the performance of working capital management the way we found in Lazaridis and Tryfonidis (2006), Raheman and Nasr (2007). In order to gauge profitability, Net Income (NI) was taken. Besides Net Income

(NI), all other variables are independent variables. Variables chosen and their methods used for calculation are given in the above table.

These independent variables listed above are the very basic measures of working capital efficiency and liquidity of a firm. All the variables in the mentioned above are expressed as ratios or proportions. To analyze the nature and extent of the relationships, correlation and regression test will be conducted. The dependent variables have been regressed against each independent variable. And the results have been expressed in the form of regression equation as below. Significance of beta values at 5% will be interpreted using the t-test of significance

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + U_{it}$$

Where,

Y_{it} represents Net Income (NI) for New KCC firm at time t .

X_{1it} represents Inventory Outstanding Days (IOD) for New KCC firm at time t .

X_{2it} represents Accounts Receivables Outstanding Days (AROD) for New KCC firm at time t .

X_{3it} represents Accounts Payable Outstanding Days (APOD) for New KCC firm at time t .

X_{4it} represents Cash Conversion Cycle (CCC) for New KCC firm at time t .

$i = 1$ firm

$t = 2008-2011$

u_{it} = Error term

β = Change in estimated Y

β_0 = Estimated value of Y when all variables = 0

CHAPTER FOUR.

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter addressed data analysis and research findings on the relationship between working capital management and profitability. Data was collected from secondary data which was financial statements of New KCC from year 2008-2011. Data was analyzed using both descriptive and quantitative analysis by use of Microsoft excel and SPSS. The

4.2 Variables

Tables and figures in this chapter are derived from the findings of the study. Instruments used in this study were derived using formulas from secondary data obtained from the New KCC financial books. Their accuracy, validity and reliability were assumed on the authority of the auditors' declaration in each of the annual financial reports.

Table 1: Variables Analysis

Variable	Year			
	2008	2009	2010	2011
Net Income(NI)	374,605,619.00	389,094,751.00	95,105,671.00	492,880,390.00
Inventory Outstanding Days(IOD)	62.91	41.13	118.89	110.90
Accounts Receivables Outstanding Days(AROD)	41.11	49.34	48.10	48.69
Accounts Payable Outstanding Days(APOD)	52.94	48.80	83.54	82.75
Cash Conversion Cycle(CCC)	51.08	41.67	83.45	76.83

Source: Research Findings

The time series data for the financial data calculated from available information on the financial books in the review period are as shown in the table above

4.3 Descriptive Statistics

Table 2: Descriptive Statistics of Variables

	Mean	Median	Standard Deviation	Sample Variance	Range	Minimum	Maximum
<i>NI</i>	337,921,607.75	381,850,185.00	170,231,421.51	28,978,736,869,219,400.00	397,774,719.00	95,105,671.00	492,880,390.00
<i>IOD</i>	83.46	86.90	37.52	1,407.62	77.77	41.13	118.89
<i>AROD</i>	46.81	48.40	3.83	14.69	8.23	41.11	49.34
<i>APOD</i>	67.01	67.85	18.71	350.19	34.74	48.80	83.46
<i>CCC</i>	63.26	63.95	20.05	402.18	41.78	41.67	83.46

Source: Research Findings

The table above presents the descriptive statistics of New KCC for four years. The mean of NI was 337,921,607.75 of the total assets and standard deviation of 170,231,421.51. This means NI can deviate from the mean both sides by 170,231,421.51. The maximum value of NI was 492,880,390.00 as well as the minimum being 95,105,671.00.

The mean of IOD was 83.46 days with a minimum of 41.13 days and a maximum of 118.89 days. The standard deviation was 37.52. This means the company took an average of 83.46 days to turn inventory held into sales.

AROD had a mean of 46.81 days with a minimum of 41.11 days and a maximum of 49.34 days. The standard deviation was 3.83 days. On average it took 46.81 to collect the outstanding debts.

APOD had a mean of 67.01 days with a min of 48.80 days and a maximum of 83.54 days. The standard deviation was 18.71. On average it took 67.01 days to pay off its creditors. From analysis, it took more days to convert inventory to sale where the mean days were 83.46 as compared to their average debt collection days of 46.81 days. The company was able to collect outstanding debts faster than they would offset its debts or converted their inventories into sales.

4.4 Quantitative Analysis

4.4.1 Pearson's Correlation Analysis

Pearson's Correlation analysis was used to determine the relationship between working capital variables and profitability. If efficient, working capital management increases profitability then a negative relationship between the measures of working capital management and profitability will be expected. **Table 3: Pearson's Correlation Coefficients**

Table 4.2: Pearson Correlations					
	Net Income (NI)	Inventory Outstanding Days(IOD)	Accounts Receivables Outstanding Days(AROD)	Accounts Payable Outstanding Days(APOD)	Cash Conversion Cycle(CCC)
Net Income(NI)	1	-.379	-.052	-.316	-.425
Inventory Outstanding Days(IOD)	-.379	1	.249	.986*	.998**
Accounts Receivables Outstanding Days(AROD)	-.052	.249	1	.395	.288
Accounts Payable Outstanding Days(APOD)	-.316	.986*	.395	1	.988
Cash Conversion Cycle(CCC)	-.425	.998**	.288	.988	1
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Research Findings

When the variables were run against the dependent variable net income (NI) and against each other, the resulting correlation co-efficient (Pearson) were as shown above.

Against the net income (NI), the three variables individually; IOD, AROD, APOD and CCC show a certain association with NI albeit being a relatively weak negative correlation. These four predictor variables (IOD, AROD, APOD and CCC) however return significant Pearson correlation co-efficient indicative of quite a strong positive correlation between themselves with values ranging from 0.249 to as high as 0.998 at both 95% and 99% confidence level.

These results for association between NI and the supposed four predictors; IOD, AROD, APOD and CCC therefore necessitate further investigation for correlation and co-linearity using advanced regression analysis.

The table above shows the results of correlation co-efficient between variables. There was a negative relationship between IOD, AROD, APOD and CCC with NI. This means there was an increase in profitability with a decrease in IOD, AROD, APOD and CCC therefore the finance managers can increase profits by reducing the days needed to convert inventory to sales, reduce credit sales which results to increase in debtors, days needed to convert inventory, debtors and creditors to cash.

4.4.2 Regression Analysis

The relationship between working capital management and profitability can be elaborated further through regression analysis model as expressed below through SPSS software. The regression analysis for the data above returns the following results;

Table 4: Regression Model for IOD,AROD,APOD,CCC

Table 4.3.1: Model Summary (Included Variables)						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	1.000 ^a	1.000				
a. Predictors: (Constant), Cash Conversion Cycle(CCC), Accounts Receivables Outstanding Days(AROD), Accounts Payable Outstanding Days(APOD) b. Dependent Variable: Net Income(NI)						
Table 4.3.2: Excluded Variables ^b						
Model		Beta In	t	Sig.	Partial Correlation	Co linearity Statistics
						Tolerance
1	Inventory Outstanding Days(IOD) ^b					.000
b. Excluded Predictors in the Model: Inventory Outstanding Days (IOD)						

Source: Research Findings

Out of the four predictor variables; cash conversion cycle (CCC), accounts receivables outstanding days (AROD), accounts payable outstanding days (APOD) and inventory outstanding days (IOD), three returned significant coefficients to model a regression equation. The only predictor the model rejects is IOD as shown above.

The R and R-square value indicate a perfect relationship between NI and the three included predictor variables perhaps due to the three variables being a function of net income (NI).

The coefficients table returned by running the data through analysis software (IBM SPSS 20) is as illustrated below;

Table 5: Regression Coefficients

Table 4.4: Coefficients ^a				
Model	Un-standardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	1,736,159,087.692	0.000		0.0000
Accounts Receivables Outstanding Days(AROD)	-42,676,264.972	0.000	-.961	0.0000
Accounts Payable Outstanding Days(APOD)	78,053,889.694	0.000	8.580	0.0000
Cash Conversion Cycle(CCC)	-73,204,877.370	0.000	-8.623	0.0000

a. Dependent Variable: Net Income(NI)

Source: Research Findings

Using the regression model below;

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + U_{it}$$

Where,

Y_{it} represents Net Income (NI) for firm i at time t .

X_{1it} represents Inventory Outstanding Days (IOD) for firm i at time t .

X_{2it} represents Accounts Receivables Outstanding Days (AROD) for firm i at time t .

X_3 represents Accounts Payable Outstanding Days (APOD) for firm i at time t .

X_4 represents Cash Conversion Cycle (CCC) for firm i at time t .

$i = 1$ firm

$t = 2008-2011$

u_{it} = Error term

β = Change in estimated Y

β_0 = Estimated value of Y when all variables = 0

The regression model equation therefore becomes;

$$NI = 1,736,159,087.6 + (-42,676,264.9) AROD + (78,053,889.6) APOD + (-73,204,877.3) CCC$$

Explanation;

AROD; a 42,676,264.9 decrease in AROD results in unit increase in NI

APOD; a 78,053,889.6 increase in APOD results in a unit increase in NI

CCC; a 73,204,877.3 decrease in CCC results in a unit increase in NI

Constant (Intercept); in any year NI is 1,736,159,087.6 when all other variables are equal to zero.

4.5 Interpretation of Findings

New KCC Ltd converted its inventories into cash for an average period of 83.46 days, its accounts receivables 46.81 days and paid its creditors within an average of 67.01 days. This resulted to its cash conversion cycle being an average of 63 days. These results affect the policies relating to credit purchase and credit sales. New KCC utilized its spread out creditor's payment and got cash from its debtors sooner therefore resulting to a good cash liquidity position. They can maintain its credit policies as it promotes a sound cash flow analysis.

The results from regression analysis indicated that the coefficient of APOD were positive at 78,053,889.6 which implied and increased payment period would significantly lead to increase in profitability thus the company may delay in paying its bills and utilize that amount of money to generate more sales thus increase in profitability. Whereas AROD and CCC had a negative coefficient of -42,676,264.9 and -73,204,877.3 respectively, this implied an increase in AROD and CCC will negatively affect profitability.

The working capital required by the company is increasing over years. The company should try to curtail the unnecessary expenditure in order to reduce the cost of production and promote high return on sales. If at all there is any possibility, the company should reduce the credit sales and receivables holding period and to bridge the gap between the excess and shortage of working capital.

IOD ratio, explained as an indicator of inventory turns, is an important for any company with inventory. It shows how quickly management can turn inventories into cash. In general, a decrease in IOD is an improvement to working capital, and an increase is deterioration. In New KCC, IOD has increased from 62.91 days in 2008 to 110.90 in 2011. This show that New KCC has high IOD means that stocks are being sold out too slow. That indicates an ineffective management at the inventory level. The high value of the ratio might also show the risk of products obsolescence.

AROD acknowledges importance of cash in business. Due to this, it is in the company's best interest to collect due payments as quickly as possible. Through evaluation of AROD, New KCC had an average of 47 days before accounts receivable are collected, this measurement indicated that New KCC had a good ability to collect cash in waiting and it attributed to a good cash conversion cycle.

APOD in New KCC Ltd increased from 53days to 83 days and it depicts that the company has a good ability of managing its accounts payable. An increase in days shows the company is slow in paying its liabilities. This is a good indicator as it shows the average payment terms granted to the company and better credit terms a company gets

from its suppliers. From a company's prospective, an increase in APOD is an improvement in working capital management and thus increased profitability.

The cash conversion cycle (CCC) measures of management effectiveness. the ratios indicate how efficiently management is using short-term assets and liabilities to generate cash. For instance, New KCC Ltd CCC increased over from 51 days in 2008 to 76.83 days making it to have a range of 41.78 which ought to be minimal. This was however not the case due to high inventory builds where in IOD in 2010 and 2011 was 119 days and 111 days respectively. This made IOD to have the highest range of 77.77 of all the dependent variables under observation. Cash was tied up in goods that could be sold . Accounts receivables were being handled appropriately due to a constant AROD range of 8.23. It means that the company was able to collect payment from customers. APOD had a range of 37.74 implying the company's ability to benefit through slowing down of payment of accounts payable to its suppliers because that allows the company to make use of money for a longer time

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study analyzed the relationship between working capital management and profitability in New KCC Ltd. The study had a focus on IOD, AROD, APOD and CCC which constitutes a measure of working capital variables. NI was used to analyze the firm's profitability.

From the descriptive analysis, the firm's profitability was promoted by the firm's ability to utilize credit facilities from the suppliers and minimal days used by the firm to collect its debts. However, more cash was tied in inventory indicating held high levels of stock and viable ventures were limited to tying of cash by stock. This could be attributed to the cyclic weather conditions resulting to inconsistent milk production.

Pearson correlation and regression were undertaken through SPSS software to test the relationship between working capital management and profitability in New KCC Ltd. The analyses revealed a negative relationship between IOD, AROD, and CCC. This means that the company should retain optimal levels of inventory, a credit policy should be in place and debts should be collected as soon as possible to avoid tying the funds of a company on stock and debtors. There was however a positive relationship between profitability and APOD which implies that the firm can delay payments of accounts payable and utilize these funds to generate more sales. The relationship between the suppliers and the firm should be highly regarded to avoid incurring extra charges for outstanding payments and suppliers refusing to offer them goods and services through attractive credit facilities.

5.2 Conclusion

The study revealed that managers should maintain optimal levels of working capital. They should be able to do this by reducing CCC so long as it does not affect business operations, inventory should be optimal to meet the customers demand. In order to move

out this inventory quickly, management might have to slash prices and to minimize holding costs as a result of a lot of inventory which in turn reduce the available cash to run the operations of the company and other viable ventures.

The firm should strive to collect the accounts receivable within the shortest period of time in order to utilize these funds to generate sales. The firm should also take longer to settle the accounts payable without restraining the firm supplier's relationship. This is because accounts receivable is essentially a loan to the customer, so the company loses out whenever customers delay payment. The longer a company has to wait to be paid, the longer that money is unavailable for investment elsewhere. On the other hand, the company benefits by slowing down payment of AP to its suppliers, because that allows the company to make use of the money for longer. From the analysis, it's evident that New KCC collects their bills faster and utilizes the credit facilities provided by their suppliers as more days on APOD than are in AROD. This implies and appropriate credit facility is in place and more cash in than cash out. This results are consistent with Solano et al (2007) who demonstrated improved profitability if IOD, AROD and CCC are reduced.

5.3 Recommendations for Policy

From the above analyses, it is evident that New KCC must manage its working capital efficiently in order to increase its profits. Optimal management of inventory, accounts payable, accounts receivables and cash increase the profit levels. Reduction of CCC should be undertaken by the management. A reduction in prices of their products would ease the high levels of inventory held thus improve the CCC.

Credit management policies should be improved which allow fast debt collection to enable release of funds to viable business. High inventory ties up fund which would have otherwise been useful in generating more revenue and minimize holding costs.

Payments should be delayed without ruining the firm relationship with its suppliers. This will reduce the cash outflow as the funds will be within the firm which will be used to generate more revenue.



Trainings should be undertaken to help understand the usefulness of appropriate working capital management as the goal of each firm is to maximize profits by reducing expenses and efficient working capital management is key to attain this goal of profit maximization.

5.4 Limitations of the Study

Due to the fact that most upcoming dairy firms are private companies, availability of their financial reports was challenging as this report are regarded with utmost confidentiality. This resulted to reliance on New KCC whose financial information is accessible by the public unlike the private dairy firms.

Given the short period of research, the researcher also identifies that she could have benefitted from a longer period. The period taken was quite short and the variables and details required were enormous.

Project related costs were also a real challenge to the study. The cost of internet, telephone calls, stationery, data analysis software, printing and photocopy and transport costs all added up to the expenses of the project. Real resilience is then a requirement.

5.5 Suggestions for Further Research

Further research can be carried on other dairy firms and other comparative studies of other agribusiness firms.

Use of other control variable used to measure working capital can be used to further provide a comparison of working capital management and profitability.

The relationship between working capital management and other aspects such as growth and investments can be measured over and above profitability.

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APPENDIX I: INTRODUCTION LETTER

RHODA MUCHIRI
UNIVERSITY OF NAIROBI
P.O. BOX 30197-00100

20/08/2012

THE HEAD OF FINANCE
NEW KCC LTD
P.O. BOX30131-00100
NAIROBI

Dear Sir/Madam,

RE: REQUEST FOR NEW KCC LTD FINANCIAL REPORTS FOR YEAR 2008-2011.

I am a post graduate student in the school of business in the University of Nairobi currently undertaking an academic research project titled 'The Relationship between Working Capital Management and Profitability of the Dairy Industry in Kenya a case study of New KCC Ltd'.

New KCC being the oldest firms in the dairy sector has been selected as the basis of the study of the dairy firms in Kenya. I hereby kindly request you to assist me in obtaining the financial reports for the years 2008 to 2011. This information will be used purely for an academic purpose and will be treated with much confidentiality. I look forward to your positive response.

Thank you in advance

Yours Faithfully

Rhoda N. Muchiri

APPENDIX II: DATA SHEET

This data sheet has been designed to collect information from the head of finance New KCC Ltd. Please complete the data sheet as instructed. All the information in this data sheet will be treated with much confidence.

The Relationship between Working Capital Management and Profitability of the Dairy Industry in Kenya a case study of New KCC Ltd.

Table 1: Working Capital over the last 4 Years

Year/Working Capital Measures	2008	2009	2010	2011
	Kshs.			
Inventory(A)	689,765,320.00	501,744,641.00	1,624,584,498.00	1,737,193,759.00
Accounts Receivables (B)	626,939,746.00	815,221,298.00	840,777,181.00	985,286,568.00
Accounts Payable(C)	580,528,004.00	595,384,798.00	1,141,526,073.00	1,296,353,993.00
Working Capital(D) =A+B-C	736,177,062.00	721,581,141.00	1,323,835,606.00	1,426,126,334.00

Table 2: Performance of New KCC Ltd over the last 4 Years

Year/Performance Measures	2008	2009	2010	2011
	Kshs.			
Total Sales	5,565,974,910.00	6,030,117,860.00	6,380,176,228.00	7,385,980,381.00
Total Assets	4,846,732,573.00	4,809,365,821.00	5,899,580,372.00	7,323,996,832.00
Net Income	374,605,619.00	389,094,751.00	95,105,671.00	492,880,390.00

APPENDIX III: VARIABLES ANALYSIS

Inventory Outstanding Days(IOD)=INV/COGS*365 Days	Year/ Days			
	2008	2009	2010	2011
Inventory (INV)	689,765,320.00	501,744,641.00	1,624,584,498.00	1,737,193,759.00
Cost of Goods Sold(C.O.G.S)	4,002,259,979.00	4,453,051,688.00	4,987,432,806.00	5,717,789,504.00
Days	365	365	365	365
Inventory Outstanding Days(IOD)	62.91	41.13	118.89	110.90

Accounts Receivables Outstanding Days(AROD)=AR/CS*365 Days	Year/ Days			
	2008	2009	2010	2011
Accounts Receivables(AR)	626,939,746.00	815,221,298.00	840,777,181.00	985,286,568.00
Credit Sales(CS)	5,565,974,910.00	6,030,117,860.00	6,380,176,228.00	7,385,980,381.00
Days	365	365	365	365
Accounts Receivables Outstanding Days(AROD)	41.11	49.34	48.10	48.69

Accounts Payable Outstanding Days(APOD)=AP/COGS*365 Days	Year/ Days			
	2008	2009	2010	2011
Accounts Payable(AP)	580,528,004.00	595,384,798.00	1,141,526,073.00	1,296,353,993.00
Cost of Goods Sold(C.O.G.S)	4,002,259,979.00	4,453,051,688.00	4,987,432,806.00	5,717,789,504.00
Days	365	365	365	365
Accounts Payable Outstanding Days(APOD)	52.94	48.80	83.54	82.75

Cash Conversion Cycle(CCC)=IOD+ AROD-APOD	Year/ Days			
	2008	2009	2010	2011
Inventory Outstanding Days(IOD)	62.91	41.13	118.89	110.90
Accounts Receivables Outstanding Days(AROD)	41.11	49.34	48.10	48.69
Accounts Payable Outstanding Days(APOD)	52.94	48.80	83.54	82.75
Cash Conversion Cycle(CCC)	51.08	41.67	83.45	76.83