EFFECT OF TRADE RECEIVABLES ON PROFITABILITY OF MANUFACTURING AND ALLIED FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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ABSTRACT

The three main ways of financing a firm are issuing of equity, retention of earnings and issuing of debt capital. Trade receivables securitization is another upcoming avenue of raising capital that brings the benefit of low cost and enables firms to streamline their financial statements and utilize the raised capital in a more prudent way to improve its credit rating and have better financial ratios which improves profitability of the firm. This study analyzed the effect of trade receivables on the profitability of 24 Kenyan listed Manufacturing and allied firms for the period 2008-2012. Return on Assets was used as the measure of profitability. The target population of the study was all the twenty four manufacturing and allied listed firms at NSE between 2008 to 2012. Comparable data for this period on Debtors Collection Period (DCP), Cash Conversion Cycle (CCC), and Accounts Receivable Turnover (ART) was used to have an analysis on their relationship with the return on assets. The study utilized panel data where profitability for each of the 24 manufacturing firms for each year over the 5 year period was related to the trade receivables variables. Secondary data was obtained from Audited financial Statements of the firms as well as the NSE handbooks over the five year period. Pearson correlation was used to establish the relationship between the variables under consideration. The study is expected to give policy direction on the management of trade receivables as a key accounting item for the manufacturing firms. The study found out that the trade receivables, Debtors Collection Period, Cash Conversion Cycle and Accounts receivable turnover (ART) had an insignificant effect on the return on assets of manufacturing firms. Using the return on assets as the measure of profitability, the three variables do not have a significant impact on the profitability. Further studies may consider using assessing the effect of the trade receivables on other measures of profitability or financial performance such as liquidity.

Key words: Profitability, Average Collection Period, Cash Conversion Cycle, Accounts Receivables Turnover

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ACRONYMS AND ABBREVIATIONS

ARP	Accounts Receivable Period
ART	Accounts receivable turnover.
CCC	Cash Conversion Cycle
CMA	Capital Market Authorities
Co	Company
DCP	Debtors Collection Period
GDP	Gross Domestic Product
NSE	Nairobi Securities Exchange
ROA	Return on assets
SMEs	Small and Medium Enterprises
SOX	Sarbanes Oxley Act
SPSS	Statistical Package for Social Sciences
WCM	Working Capital Management

TERMS AND DEFINITIONS

Trade Receivables is defined as the amount expected from customers due to past credit transactions. They are resources that the organization expects to collect from customers and thus recorded as assets (Backman, 1962).

Return on assets is defined as how efficient management is at using its assets to generate revenue.

Prepayment is defined as the amount that the organization has made in advance for the services and goods to provide in the future (Berry, 2006).

Listed firms is defined as firms whose shares can be purchased or sold on the stock exchange for public trading.

Nairobi Securities Exchange is defined as an organized market where the securities from the listed companies are issued bought and sold to the public through the services of the brokers or dealers.

Bad debt is defined as a debt that occurs when a firm believes that a debtor is unable to pay the business or unwilling to pay and the firm will never be able to collect (Ireland 2000).

Cash Conversation Cycle is a measure of working capital efficiency of and shows how fast a firm can change its product into cash through sales.

Debtors Collection Period is the average time a firm takes to collect its debt and a reducing period of time shows increasing in efficiency

Accounts receivable turnover is a measure of how well a company is managing their receivables, the lower the amount of uncollected debts the higher the turnover

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the corporate world, the three main ways of financing are issuing of equity, retention of earnings and issuing of debt. Trade receivables securitization is another upcoming avenue of raising capital that brings the benefit of low cost and enables firms to streamline their statement of financial position and utilize the raised capital in a more prudent way. Through trade receivables securitization, a company is able to improve its credit rating, capital utilization, get easier access to the capital market to raise funds and better financial ratios which are able to show the relationship between comparable periods. Moreover, there is no dilution of shareholding as compared to issuing of equity to raise capital or liquidation risk to a firm lowers as there is no creation of debt. Khan, Tragar and Bhutto (2012) proved that trade receivable is used as a source of financing among the Pakistani listed firms and the level of trade receivables differ from one sector to another. Manufacturing firms maintain high level of trade receivables than their counter parts in the service industry. According to Jegers and Deloof (1996), trade receivables, payables and bank credits are critical sources of financing among the Belgian listed companies.

Financial goals of a firm like maximization of shareholders' wealth and firm's profitability have been viewed as critical for success of any firm. Shareholders invest in a firm and in return they expect dividend. Corporate managers trade in profitable transactions to achieve these objectives. Moreover, profitable firms attract investors since they know out of their investment, they derive dividend and increase in value of their stock. Erasmus (2012) carried out a study on South African listed industrial firms on management of working capital and profitability. He established that there exists an inverse relationship between profitability and debt, liquidity ratios and trade receivable conversion cycles. He further concluded that

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debt and liquidity ratios are critical for success of a firm than trade receivables conversion cycle. Managers tend to engage in profitable transactions thus improving investment and working capital position of a firm.

According to Backman (1962), trade receivables relate to selling of goods and services on credit. It need efficient management since there are risks, relates to the future and has greater economic value. Risks faced are in terms of default in the future since the amount is collectable at future date and economic value since there is exchange of goods at monetary value. Trade receivable is considered the third class of assets after plant, property and equipment and inventory and second class in terms of current assets after inventory. In terms of working capital management, it is considered critical after cash and inventory. Efficient credit policy is instituted by firms to boost profitability and liquidity levels. For a firm to achieve maximum management of trade receivables, it needs to consider the following factors:- volume in terms of credit trade, pattern of payment by customers, practices and policies in place for management of credit sales, collection policies and terms and conditions for granting credit. For efficient management of trade receivables, firms achieve the goal of maximization through profitability and liquidity. Through credit sales, firms maintain and retain potential customers.

In an inefficient market, firms charge high interest and record high profit margins due to effect of moral hazard and information asymmetry. Capital Markets Authority, CMA (2012) established that developed capital promotes efficiency, lowers profit margins of firms and there is stiff competition among firms. This encourages firms to invest in profitable projects thus maintenance of high liquidity level. Liquidity boosts firm's value, improves credit rating credential of a firm and ability to borrow thus high profit recorded. To improve liquidity levels, firms shorten the cash conversion cycle, engage in profitable activities, automate their business activities and expand their revenue streams. Through this, a firm is

able to engage in strategic actions since liquidity is one of the strategic goals for success of a firm and ensures best market practices. Munene (2006) studied the capital structure of firms at NSE and noted that firms adopt the pecking order theory. As per this theory, firms prefer retained earnings to debt to equity, and this means profitability is critical for firms. Likewise, Omondi (1996) provided evidence that firms improve their profitability through debt financing since this boosts growth and liquidity. Moreover, Mathuva (2009) concluded that there exists negative relationship between firms' cash conversion cycles and profitability among the firms listed at the NSE.

The relationship between trade receivables and return on assets conflict one another. High liquidity level lead to low profitability since idle cash is not invested into profitable projects that generate returns. During growth, firms face liquidity constraints in order to achieve profitability goal. A liberal credit policy ensures that more revenue is recorded and thus liquidity level decreases as a result of fund held by the creditors.. Moreover, high risk investment leads to high return. When a firm invests in high risk projects, the liquidity position of a firm is jeopardized. From this, management balances and ensures optimum mix between trade receivables and liquidity. Walt (2009) found out that investment in profitable projects is critical since returns can be converted into liquid assets. Liquidity doesn't imply that a firm is profitable. Liquidity indicates whether a firm is able to meet its obligations while profitability tests the sustainability of a firm.

1.1.1 Trade receivables and liquidity of the firms

Trade receivables are credit sales advanced to debtors. In other words, they are promises made by debtors. When a firm makes sales, revenue is recognized and creation of debtor account. To reduce trade receivables, there is an inflow of cash to the company thus improvement of liquidity level and working capital of a firm. Liquidity is the ability to settle debts as they fall due. Thus management of trade receivables is critical for success or failure

of a firm. There should be a match between sales and trade receivables growth. If growth rate of trade receivable is higher than that of sales, then the future financial health of a firm will be affected since the cash conversion cycle is low thus exposing a firm to liquidity problems since its capacity to pay liabilities is low.

Liquidity management entails having sufficient cash to settle obligations as they fall due both in short and long term by shortening cash conversion cycle. A good liquidity position promotes firm's value and publicity with various stakeholders. Eljelly (2004) examined Saudi Arabian listed firms and found out that there is negative association between profitability and liquidity. Firms maintain high liquidity level to meet their short term obligations and as such, the level of investment in profitable projects is low thus low level of profitability.

In the modern corporate world, there has been a paradigm shift from the traditional valuation and growth of a firm to expected return. Most of the investors focus on expected return based on the past and future. Weiner (2006) noted that liquidity is critical during bad economic times. Firms invest in liquid portfolio stock in order to receive return as the investment matures. Through this, the firm is able to meet its obligations and increase its value. Liquid firms take advantage of available profitable investments that boosts the profitability level and reduces costs. Morellac (2001) concluded that liquid investments have high resale value since there is ready market and through sale, the firm size is reduced. Also, Smith and Begemann (125257) did a research on Johannesburg listed firms and discovered that achievement of profitability and liquidity level compromises the goal of a firm in terms of wealth maximization. In pursuant of maximization of firm's return, liquidity and profitability level is jeopardized.

Trade receivables and Return on Assets work on the same direction. Trade receivables are used to boost sales revenue. Through this, profitability level of a firm is improved but

firms should focus on efficient management of trade receivables since it has economic value, relates to the future and there are various risks faced by a firm. High level of trade receivables means that firm's liquidity level is low thus inability to settle short term obligations as they fall due. Does trade receivables and return on assets matter? The research attempted to establish the effect of trade receivables on return on assets of manufacturing firms listed at NSE between 2008 and 2012.

1.1.2 Effect of inefficient management of trade receivables

Most firms have failed due to mismanagement of trade credit. Big firms like Enron went into bankruptcy and collapsed in the year 2001 because of hiding their big debts by practicing creative accounting of inflating revenue. Their main measure of success was revenue while unmasking debts and this attracted negative attention from other stakeholders. Merck & Co, an American Pharmaceutical recorded co-payments that were never collected and this led the company to be declared insolvent. Refco, a brokering firm collapse in 2005 since the company CEO had concealed $430m of bad debts.

In Kenya, Uchumi was declared insolvent and was suspended from trading on the NSE in the year 2006 and almost collapsed due to their financial mismanagement. Rural Urban Finance collapsed in 1984 since it gave out thousands of largely unsecured loans to slum dwellers which they could not collect. Trust bank collapsed since they entered into non-performing assets through clan-inspired lending, Most of the failed firms have been due to inadequate and unsustainable profitability. Firms that have fallen in the recent past includes Nyaga Stockbrokers limited, Bob Mathew stock broker limited which had shown signs of financial problems.

1.1.3 Working capital management

Working capital management involves a balance between supply and demand of fixed and current assets. Firms institute policies to increase liquidity and profitability thus increase

in maximization of shareholders' wealth. Through demand, trade receivables decrease and on supply side trade payables reduce. Firms thrive to achieve and strike a balance between the two in order to achieve the firm's goals. Mohammadi (2009) showed that there exists inverse association between conversion period of trade payables, receivables, cash conversion cycle, inventories and profitability among firms listed at Tehran Stock Exchange between 1996 and 2005.

Working capital management has an impact on profitability. Deloof (2003) studied Belgian firms' working capital management and found out that there exist negative relationship between accounts payable and profitability thus implying that less profitable firms wait longer to settle their debt. Shin and Soenen (1998) did a study on Indian firms and established that there exist strong negative relationship between lengths of firms' net trading cycle and its profitability. Firms operating in unstable and growing markets require to maintain a high level of liquidity compared to their counter parts operating in a stable environment. Lazaridis and Tryfonidis (2006) discovered that there exist significant association between profitability and cash conversion cycle of firms listed at Athen stock exchange. Firms record high profitability level by keeping the cash conversion cycle at its optimum levels.

1.1.4 Manufacturing firms listed at the NSE

Nairobi Securities Exchange was established in 1953 by CMA to facilitate trading of securities among the investors and borrowers. NSE is a market regulator and there were sixty listed firms as at 31st December 2013 classified into ten different industries namely: Agricultural, Commercial and Services, Telecommunication and Technology, Banking, Manufacturing and Allied, Construction and Allied, Automobiles and Accessories, Energy and Petroleum, Insurance and finally Investment. On a periodic basis, listed firms are required to submit their financial statements (NSE, 2013). There have been tremendous

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growth in NSE that include off – loading of Kenya Commercial Bank by the government in 1988, listing of shares by various firms, automation and provision of timely information to investors thus NSE becomes a market of interest to be studied. There are nine listed manufacturing firms at the NSE classified into different industries, See Appendix II.

1.2 The Problem Statement

Trade receivable is a prominent component in modern business, firms have come up with working capital policies on how to manage their trade receivables to be able to survive in the market and grow.

In Kenya the Capital Market Authority(CMA) which has the oversight authority over the listed firms on the NSE does not have a published and publicized policy to give a guideline based on specific industries and the amount of trade receivable an organization should hold depending on their firm size and segment. In the absence of such a clear of policy guideline, trade receivables is left on the hands of the management of the firms who are faced with dilemma of meeting interest of various stakeholders. Due to the shortcomings of the subjective decisions made by the management, some firms make mistakes which drive them to bankruptcy and even collapse in some cases. Uchumi for example was suspended from the NSE (CMA, 2006). Lack of clear policies leaves the market open to non-compliance making enforcement mechanism from being ineffective. It allows firms to conceal their trade receivable through creative accounting which makes it difficult to know whether the returns they report have been realized or not.

Most studies have done their research on Working Capital Management and their effect on Profitability and a few with reference to Kenya. Mathura (2010) studied the influence of working capital management on corporate profitability of firms listed at the NSE and found that there exists a significant negative relationship between the time it takes for firms to collect cash from their clients and profitability.

Deloof (2003) documented that there exists negative relationship between profitability and the number of days' accounts receivable, inventory and accounts payable. This is consistent to the fact that less profitable firms wait longer to settle their bills and shorter time to collect their debt. Also, Niresh (2012) provided evidence that manufacturing firms maintain high liquidity level to meet the production needs and as revenue grows, they invest heavily in inventories thus indirect association between profitability and liquidity. In support, Smith and Begemann (1997) revealed that profitability and liquidity work in different reverse directions. Eljelly (2004) established that negative association exists between profitability and liquidity among the Saudi Arabia listed firms.

These studies however provide no evidence about effect of trade receivables on profitability, yet trade receivables is one of the main components of working capital and constitute a substantial portion of current assets. This study is an attempt to look at trade receivable as an important factor in a firm's working capital management study and t**o** bring out the relationship between the trade receivables and profitability of manufacturing firms quoted at the Nairobi Securities Exchange.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of the research was to establish the effect of trade receivables on the profitability of manufacturing firms listed at the NSE.

1.3.2. Specific objectives

The specific objectives of the research were:-

1.   To determine the effect of Debtors Collection Period on the Profitability of manufacturing and allied firms listed at the NSE.

2.   To determine the effect of cash conversion cycle on the profitability of manufacturing and allied firms listed at the NSE.

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3.   To determine the effect of accounts receivable turnover on the profitability of manufacturing and allied firms listed at the NSE.

1.3.3. Research Questions

The research questions were:

1.   What is the effect of debtor's collection period on the profitability of manufacturing firms and allied listed at the NSE?

2.   What is the effect of cash conversion cycle on the profitability of manufacturing and allied firms listed at the NSE?

3.   What effect does accounts receivable turnover have on the profitability of manufacturing firms listed at the NSE?

1.4 Importance of the Study

1.4.1 Management

Managers will be able to strike a balance between trade receivables' level and liquidity in order to meet shareholders' wealth maximization goal. Also, it will enable them to institute sound credit policies and adhere to corporate governance which will gauge management performance.

1.4.2 Shareholders

It will enable them to have adequate knowledge on the level of investment to be held at any particular time. Shareholders invest in profitable firms to maximize their wealth.

1.4.3 Potential Investors

It will enable them to critically analyze potential firms in different perspective before they make investment decisions. It will also enable investors to transfer their investment to well manage and performing firms. This is because working capital management is critical and this in turn results into increase in liquidity or profitability of a firm.

1.4.4 Academicians

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It will enable them to better understand the effect of trade receivables on liquidity. This will further create an avenue for further research in the area of trade receivables and liquidity

1.4.5 Regulators

It will aid the regulators to institute sound policies and guidance on trade receivables to be held by a firm in proportion to total assets, total current assets and sales.

1.5 Justification of the Study

The study aims at establishing the effect of trade receivables on profitability of manufacturing firms listed at the NSE. Trade receivables are used as a source of capital, to boost growth, profitability and liquidity, while liquidity is viewed as one of the firm's goals in terms of maximization of shareholders' wealth. There exists a research gap in the Kenyan context. The study will therefore seek to address the level of trade receivables to be maintained to boost sales and liquidity.

Lastly, the study will create avenue for further research and contribute to the body of knowledge through proper understating on the relationship between trade receivables and profitability.

1.6 Scope of the Study

The study focused on the effect of trade receivables on profitability. It considered all nine manufacturing listed firms at the NSE from different sectors that deal with manufacturing activities in the economy. The study covered manufacturing firms listed in Kenya between 2008 and 2012.

1.7 Limitation of the Study

The study was based on the data of manufacturing firms listed on the Nairobi Securities Exchange. Access of the detailed data of the accounts receivables and the computation of the trade receivable variables was a challenge as financial statements for some of the firms had not detailed this important information. The research also consumed time to analyze these variables as they were not available on their own standing but had to be computed form the balance sheets and income statements.

The data used was expensive to obtain from the NSE and the individual manufacturing firms. Lastly, most of the firms considered this information confidential and therefore difficult to access. This forced me to obtain some of the data directly from Nairobi Securities Exchange (NSE) as well as through computation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter reviews previous studies done on trade receivables and profitability. It contains five sections namely: theoretical review, types of credit policies, determinants of Trade Receivables, empirical review, summary of literature review and conceptual framework.

2.2 Theoretical Review

Management of trade receivables is critical for success and growth of a firm. As one of the strategic issue, firms institute sound policies to address growth, liquidity, profitability and what level it should be maintained to maximize shareholders' wealth. Theories on trade receivables that were used in this study include operating theory, transactions cost theory, price discrimination theory and financial market theory.

2.2.1 Operating theory

This theory assumes that firms with higher stock storage costs will always want to give credit so that they transfers these costs onto the buyer by giving the product on credit. The firm therefore will have the advantage of dividing the inventory cost into an operational storage to be incurred by the buyer and also as a financial opportunity cost induced by the payment delay offered by the seller. According to Emery (1998) firms with seasonal sales have a strategic advantage in extending trade credit and their advantage can increase when a buyer has storage space for the goods delivered and firms with semi- finished products are less likely to outsource their accounts receivable since they need to monitor their control on the semi-finished products.

2.2.2 Transaction costs theory

The theory focused on the transactions carried out by a firm. It is considered as the central pillar for advancement of trade credit. In addition, it argues that credit should be advanced to customers and they should be allowed to pay at a later date thus reducing the transaction costs and establishment of affordable payment pattern. According to Ferris (1981), firms that maintain low level of cash balances tend to maintain strong liquidity position and avoidance of misappropriation of funds which is achieved through credit sales. Payment delays also offers the buyer larger opportunities in verifying the goods, this is also supported by Lee and Stowe (1993) and Emery and Nayar (1994) that trade credit is an implicit guarantee for the quality of the goods delivered, less established companies use trade credit a method of establishing quality reputation and they will be much ready to outsource their control unlike the larger companies which will be more rigid in monitoring their accounts receivable as they have no need for additional signaling.

2.2.3 Price discrimination theory

As per this theory, same product and services are charged at different prices to different customers. It is only possible if the seller provides similar products, charges different prices at different markets. This is achieved through granting of discounts to customers and mostly practiced by large firms. Stowe and Lee (1993) established that firms issue credit terms as a warranty and assurance of quality than paying at once. This theory is also supported by Schwartz and Whitcomb (1978, 1979) and they based the idea that both market structures and legal arrangement often restrict a firm's profitability by constraining price competition in the market, trade credit not only becomes an effective tool in creating hidden price-cuts, it can also be used to practice price discrimination and such firms are less likely outsource their accounts receivable management.

2.2.4 Financial market theory

Financial market theory appreciated the presence of market imperfections and information asymmetries. Due to this presence in the market, prices of products and services are highly charged thus large firms which have the financial muscles are able to dictate and provide finances to small companies and access both the capital and money markets. Rajan and Petersen (1997) discovered that the seller is a vital player in the supply chain management, and has prior information thus has ability to influence customers over the financial institutions. This theory was developed by Schwartz (1974) and Chant Walker (1988) argue that firms with ready access to additional financing will extend trade credit for firms facing higher financing costs or restricted financing alternatives, therefore the established selling firms can assist finance the growth of their smaller and more vulnerable customers, most of these firms have incentives to act as a banker, This is due to greater leadership and strong relationship between the seller and the buyer as compared to the buyer and financial institutions and this firms are not likely to outsource their accounts receivable management since they can employ qualified personnel to do so.

2.2.5 Relevance of theoretical review to the study

The study focuses to establish the relationship between profitability and trade receivables of manufacturing listed firms at the NSE. According to the discussed theories, transaction cost and financial market theory are relevant for my study. According to transaction cost theory, firms in Kenya advance credit to customers to reduce transactions cost thus establishment of affordable payment pattern. On financial market theory, the Kenyan market is imperfect and financial intermediaries charge high interest rates thus costly to customers.

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Larger firms have greater leadership and strong relationship between the seller and the buyer and these firms are not likely to outsource their accounts receivable management since they can employ qualified personnel to do so and their main aim of advancing credit is due to the financial motive of enlarging and safeguarding their own future market and also to act as a banker and also transaction motive so that payment delays offer the buyer larger advantage in verifying the quality of their products and discounts period encourages the buyer to prompt their payments and reduce the debtors collection period which thus increases the Liquidity.

2.3 Elements of Trade Receivables

2.3.1 Debtors collection period

This shows the average time taken to collect debt, a reducing period of time shows increasing in efficiency and it will also enable the firm to compare the real collection time and theoretical period and a long debtor's collection period shows a slow and late payment by the debtors. The transaction cost theory and financial market shows a positive relationship with debtors collection period, the Manufacturing firms listed at NSE are not ready to outsource their trade receivables since they have the resources to employ qualified personal and put efficient working capital policies to ensure their debts are collected on time.

2.3.2 Cash conversation cycle (CCC)

This shows how quickly a company can convert its product into cash through sales, the shorter the cycle, the less time capital is tied in business process, this can be useful to measure the competitors since the company with the lowest CCC is often the one with better management and it will also allow an investor to gauge the company overall health. CCC is a measure of efficiency of working capital management, shortening the cash conversation cycle leads to high liquidity since it improves the efficiency of using the working capital and this can be done by speeding up collections and selling products to customers more quickly,

according to Gentry et al 1990)shortening the CCC increases the efficiency of internal operations of a firm and results in higher profitability and higher market value of a firm, larger firms are not keen in shortening their cash conversation cycle since they always operate with adequate financial resources and have better access to both money and capital markets. The transaction cost theory and financial market shows a positive relationship with CCC, the Manufacturing firms listed at NSE are not ready to outsource their trade receivables since they have the resources to employ qualified personal and put efficient working capital policies since reducing the inventory conversation period could increase the shortage cost and firms lose their good credit and lengthening the payable period could damage the firms credit reputation and these are firms which are trade with the public and have good will.

2.3.3 Accounts receivables turnover

This is used to measure the number of times receivables are rotated in a year, the higher the number of times the better for the firm and shows how well the firm is efficiently achieving higher receivable ratio, Transaction Cost theory and financial cost theory show a positive relationship with Accounts receivable turnover

2.4 Types of Credit Policies

Credit policies are practices and regulations that have been instituted to control the level of credit sales. One objective of a firm is to maximize profit and through trade credit, sales revenue is increased which results into increased profits. There are two main categories of credit policies namely expansive and tight credit policies.

2.4.1 Expansive credit policy

It is also referred to as loose credit policy and under this policy, a firm doesn't look at credit worthiness of customers thus granting them credit liberally. It results into increased sales which translate into higher profit margins but the firm faces various risks including

increase in bad debts level, liquidation risk since cash is tighten on sales and higher general administrative costs.

2.4.2 Tight credit policy

Also known as restrictive credit policy and firms follow policies and guidance on advancement of credit to customers. Firm consider credit worthiness of a customer and to some extent, there is reduced risk of bad debts, lower administrative costs, high liquidity level, increased sales and profits in the long run.

2.5 Empirical Review

Various empirical and theoretical researches have been done by various economists, academicians and researchers in the area of trade receivables and liquidity in different economies. They tend to have divergent conclusions based on countries and markets under which the researches were conducted. Liquidity and profitability are critical success factors to a firm. Liquidity motives a firm to settle short term obligations as they fall due while profitability attracts investors. Form this stand point, managers strike a balance between the two objectives since high liquidity hinders achievement of profitability goal and high profitability increases the bankruptcy level of a firm. Mohammadi (2009) proved that inverse relationship exists between trade receivables, payables, inventories conversion periods, cash conversion cycles and profitability. His research involved 92 firms Listed at Tehran Stock Exchange between 1996 and 2005. To maximize shareholders' wealth, managers reduce the trade payables, receivables, inventories and cash conversion cycles.

In addition, Dong (2010) did a study of firms listed at Vietman Stock Exchange between 2006 and 2008. From his study, he found out that there is strong inverse association between profitability and cash conversion cycles. When the cash conversion cycle, inventory and trade receivables conversion days increase, profitability level of firm decreases. In support, Mathuva (2009) did a study on the working capital management on firm's

performance of firms listed at the NSE between 1993 and 2008. The study considered 30 listed firms and he concluded that there exists negative relationship between firm's cash conversion cycles and profitability. More profitable firms had a short cash conversion cycle from trade receivables. Moreover, positive relationship exists between profitability and inventory holding period. Firms maintain optimal inventory levels in order not to disrupt production thus decrease in operating costs and increase in profitability levels.

Leadership and corporate governance determines the level of accountability by managers to the shareholders and they monitor managers' actions. Alexander (2009) did a study on evaluation of the Sarbanes – Oxley Acts' impacts on trade payables and leadership effectiveness. He found out that corporate governance and leadership have been improved among the USA listed firms. Regulators concentrate more on accuracy of statement of financial position. Through this, there is adherence to required standards in terms of liquidity since firms are able to settle their debt as they fall due. Moreover, firms have tightened their internal control processes. Liquidity and working capital have been viewed to be critical in the corporate world. Firms like Enron, World Com and Tyco Corporations have been liquidated due to mismatch between trade receivables and payables. Due to collapse of the World's biggest corporations, Sarbanes – Oxley Act has been implemented to improve on corporate governance and leadership.

Maximization of shareholders' wealth, profitability and liquidity are some of critical goals of a firm. Firms institute efficient working capital management policies to achieve these goals. According to Mohammed (2011), there is inverse relationship between trade receivables holding periods, cash conversion cycle and profitability while direct association exists between proportion of current liabilities to total assets and profitability level. As the level of trade receivables holding period increase, profitability falls. He studied private manufacturing firms in Ethiopia from 2005 to 2009 on the impact of working capital

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management on firm's profitability. He concluded that firms boost profitability by considering trade – off between profitability and liquidity, instituting efficient working capital management policies and practices and financing options.

Moreover, Tucker and Moore (2000) discovered that the proportion of trade receivables to total debt and trade payables to total debt are considered to determine the liquidity level of firm. They found out that size of a firm and profitability are directly related to proportion of trade receivables to debt and inversely related to proportion of trade payables to debt. In terms of liquidity, cash collection from trade receivables is used to settle trade payables balance. In support, Sola, Teruel and Solano (2008) researched on SMEs' profitability and trade credit among 11,337 Spanish SMEs. Their study covered from 2000 to 2007 and they found out that managers boost firms' profitability by increasing the level of trade receivables. The impact is felt by larger firms in size, firms that operate in volatile environment and maintain higher liquidity levels.

Management of trade receivables is essential for growth of firms. It enables debtors to acquire products and services on timely basis before settlement of the amount. Jarvis and Berry (2006) published that firms institute trade receivables' policies and they consider the following as critical. Firstly, regarding debt control and collection periods, the longer the period, the more the trade receivable levels thus a firm faces liquidity problems. Secondly, trade – off between trade receivables levels, profits and revenue. When a firm extends credit to customers, sales levels improves but on the other side, a firm incurs opportunity costs for non-collection of debt thus lack of cash and administrative costs incurred to collect the debt. Lastly, the risks exposure level to a firm increases due to the increased debt level where some might be bad and doubtful thus a firm makes provision which is a cost to a firm and leads to reduction in profitability level.

Trade receivables securitization is one of the upcoming avenues sources of financing. Firms utilize trade receivables since it is cheaper and doesn't lead to dilution of shareholding. Levy (2010) emphasized that presence of information asymmetry makes trade receivables a vital source of financing. His study was consistent with the pecking order theory that established that firms utilize less risky sources of capital to risky sources. During the financial crisis, strong financial based firms utilize trade receivables to advance credit to weak firms financially. As the level of information asymmetry increase, the level of trade receivables financing increases. Niskanen and Niskanen (2006) examined the credit policies employed among Finnish companies and found out that credit worthy, access to capital and money markets as vital factors to advance credit. Internal financing, age of a firm, size and proportion of current assets to total assets were established to be inversely related with credit terms offered. Moreover, trade receivable is used as source of price discrimination.

Khan, Tragar and Bhutto (2012) analyzed the factors that affect trade payables and receivables among the Pakistani listed firms. They published that trade receivables will be used as a source of internal financing and firms maintain high level of trade receivables for the purpose of price discrimination and as a means of credit line expansion. The level of trade receivables maintained by firms differs from one sector to another and manufacturing firms maintain high level of trade receivables than their counter parts in the service industry. Walker (1991) supported this argument by studying US firms and showed that companies use trade receivables and bank loans as main sources of financing and they substitute one another. The reason for this is high cost of interest, dilution and restriction factors since small firms have a limit to access the capital market to raise capital.

Industry regulators set benchmarks which firms adhere to and this enables firms to monitor their operations against the set standards. Maksimovic and Demirguc Kunt (2001) analyzed the proportion of trade receivables to total assets. They found out that it differs

among different countries and economies. For Germany, France and Italy, the proportion of trade receivables to total assets exceeds the quarter mark (more than 25%) while for the US listed firms, the proportion is 18%. Lazaridis and Tryforidis (2006) looked at the association between working capital management and profitability of firms listed at Athens Stock Exchange. They proofed that cash conversion cycle plays a critical role in the establishment of profitability of a firm and there is positive relationship between the two. Firms maintain optimal levels of trade receivables, payables and inventory which translate to efficient cash conversion cycles thus boosting profitability level of a firm.

Shin and Soenon (1998) concluded that working capital management is used to maximize shareholders' wealth since its management both affects liquidity and profitability. They proofed that indirect association exists between profitability and firms' trading cycles; and high risk of returns were affected mainly by shorter trading cycles. They further argued that liquidity and profitability work in the opposite directions since pursuit of profitability level seriously affect liquidity position and high liquidity level dilutes shareholders' returns.

Working capital management is the balance between current assets and liabilities. Management of working capital leads to liquidity and profitability effects. Firms maintain high liquidity levels in order to meet their obligations as they fall due. On the other hand, shareholders require managers to be engaged in profitable projects to boost the profitability and value of a firm. The match between the two becomes a hurdle that managers should strike. Azam and Haider (2011) conducted a study on impact of working capital management on firms' performance. Their study considered non – financial institutions listed at Karachi Stock Exchange between 2001 and 2010. They found out that working capital management is critical for survival and performance of a firm. Shareholders' wealth is maximized by shortening cash conversion cycle, net trading cycles, reducing size of the inventory held and increasing the liquidity position of a firm.

Working capital management affects both profitability and liquidity since it involves controlling and planning of current assets and liabilities. It attempts to solve the problem of inability level of a firm to meet its short term obligations and also reduce over investment. From corporate strategy, it is critical since it aims at achieving firm's goal of maximization of shareholders' wealth and returns in terms of profitability. Maximization of profits at the expense of liquidity leads to serious liquidity / bankruptcy problems to a firm thus managers strike a balance between the two objectives. From this stand point, trade receivables in terms of working capital and liquidity in terms of profitability should be efficiently managed for success and growth of a firm. Harris (2005) defined working capital management as the ability to settle the difference between short term liabilities and assets. Working capital management has been viewed as a pivot point for success of an organization and managers have constantly identified the key drivers and optimal level of working capital management to maintain.

During financial distress, liquidity is critical since a firm is unable to meet its obligations as they fall due. To meet the liquidity objective of a firm, working capital management is used to settle short term obligations. It is the trading capital in a firm and should not be retained for more than one year. Ebenezer and Asiedu (2012) carried out a study on association between working capital management and profitability among manufacturing firms listed at Ghana Stock Exchange between 2007 and 2011. They concluded that cash conversion cycle and trade receivable conversion periods are directly related to profitability. From this study, they advocated that firms should institute efficient working capital management policies to boost profitability and liquidity.

Firms boost their revenue streams through engagement in various economic activities that lead to expansion of revenue base. Trade receivables is used to expand product lines and services since it enables customers to acquire products and services before making payment

leading to overall growth. According to Mihajlov (2012), a positive association exists between trade receivables and profitability among Serbian listed firms between 2008 and 2011. Trade receivables are significant for any survival and growth of a company thus firms institute adequate strategies to manage trade receivables and increasing the profitability level of a firm. It involves a lot of transactions thus adequate decisions need to be made on trade receivables as part of working capital management. In support, Mulier and Ferrando (2012) studied banks listed by European Central Bank and established that firms utilize trade credit to boost growth and trade receivables is used to expand the product lines while trade payables is used to control market imperfections.

Obida and Owolabi (2012) studied corporate profitability and liquidity management among firms listed at Nigerian Stock Exchange. Liquidity was measured in terms of cash conversion cycle, credit policies and management of cash flow. They argued that liquidity has a positive impact on profitability. Firms increase their profitability levels by instituting proper and sound cash conversion cycle policies, credit policy and cash flow management practices. Due to the global crisis, credit from financial institutions has proofed to be expensive thus it is upon the firms to maintain liquidity to boost their profitability levels.

Chou, Yang and Lin (2011) studied the effect of credit rating on trade receivables among Taiwan listed firms. They found out that Taiwan corporate credit rating index (TCRI) is directly associated with the level of trade receivables. Firms increase the level of trade credit during periods of tight monetary policies instituted in the economy since there is reduction in financial resources for the firms. Trade receivables are considered as a source of short term financing. Raheman and Nasr (2007) established that in corporate finance, working capital management is an important component since it affects both liquidity and profitability. It relates to current assets and liabilities, and for a typical manufacturing firm, 50% of its total assets constitute the current assets.

Various studies have been done in the Kenyan context relating to working capital management. According to Kiprono (2004), there exists direct relationship between firms' returns and operating cash flows but inverse association between firms' returns and cash flows from investing and financing activities. Liquidity is considered vital and it depends from which sources cash flow is generated from. His study involved examination of thirty firms listed at the NSE between 1998 and 2003. In general, he concluded that there exists that weak association between firms' key performance indicators and cash flow generated. In support, Loo (2007) surveyed profitability levels and its effect on liquidity among listed Kenya commercial banks. He concluded that commercial banks maintain tight liquidity levels thus record high profits, advance credit for purposes of liquidation only and for short durations.

Likewise, Wanjiku (2006) studied the association between working capital management and associated economic activities in Kenya between 1986 and 2006. She proofed that liquidity of firms decreased during economic slowdowns but increased during economic expansions. Moreover, Mogere (2003) carried a survey on the impact of long term financing on profitability level of thirty listed firms at the NSE.

2.6 Summary of Literature Review

From the research reviewed, working capital management is critical for success and survival of a firm since it affects profitability, liquidity and growth. Trade receivables are used as a source of financing, price discrimination tool and expansion of product lines thus increase in growth. Firms advance trade credit to boost revenue base through expansion of product lines leading to increase in profitability level. It has unique features that include risks in-terms of default, economic value in terms of monetary value and relates to the future.

Trade receivables securitization in one of the upcoming avenues sources of financing since it is less risky and there is no dilution of shareholding.

Firms institute proper and sound working capital management policies that relate to cash conversion cycles, inventory, trade receivables and trade payables cycles to boost both liquidity and profitability levels. During periods of tight monetary policies, firms advance trade credits which lead to increase in profitability but on the other hand trade payables is used to control market imperfections. From this, managers strike a balance between liquidity (trade receivables) and profitability since high liquidity lead to low profitability and high profitability may lead to increase in liquidation risks.

From the empirical and theoretical review, developing markets possess information asymmetry, firms charge high interest rates thus record high profit margins, there is presence of market inefficiency and firms don't adhere to corporate governance issues. The study will thus determine the effect of trade receivables on return on assets of listed manufacturing firms in Kenya (developing economy) and the general effect on the economy.

2.7 Conceptual Framework

Out of the previous studies done, the following is the conceptual framework for the research to solve the research problem.

FIGURE 1
Conceptual Framework

| Independent Variables | Dependent Variable |
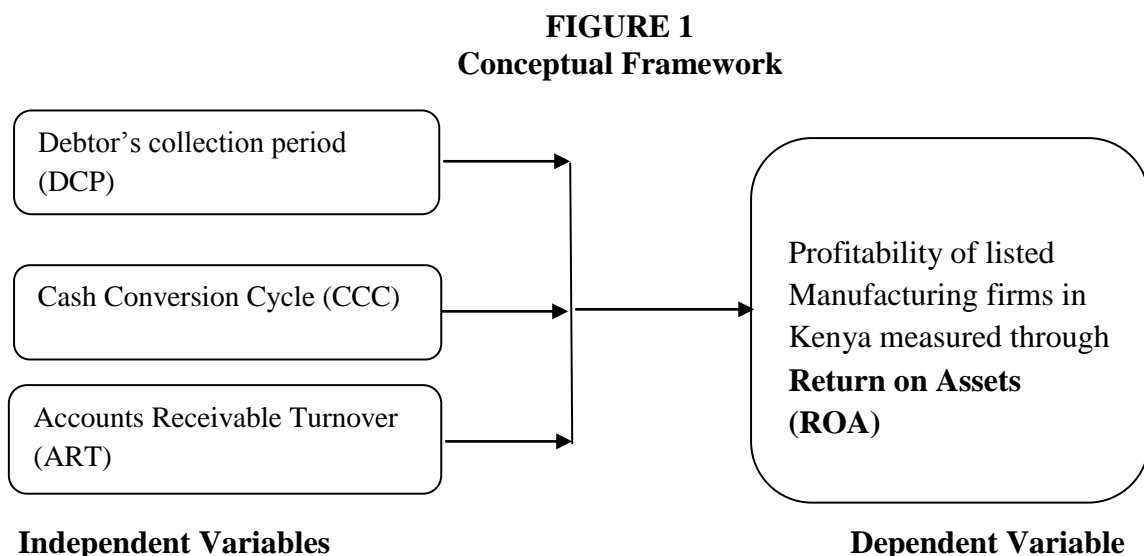
2.8 Definition of Variables

2.8.1 Debtors collection period (DCP)

DCP shows number of days an organization takes to recover its credit sales, the shorter the period the higher the return on assets position.

2.8.2 Cash conversation cycle (CCC)

CCC measures how efficient the firm is managing its cash flow a short conversation cycle indicates that the firm is collecting the receivables as quickly as possible, the negative CCC will increase return on assets and a positive CCC will reduce ROA.

2.8.3 Accounts receivable turnover (ART)

ART shows the number of times of receivables are rotated in a year in terms of sales, the higher the number of times the more efficient the company to thus higher return on asset.

2.8.4 Return on assets (ROA)

Return on Assets measures the net profit as a ratio of net assets. ROA reflects the competence of firm's management to earn profits using its assets to generate earnings.

TABLE 1
Variable Measurement

Dependent Variable	Measurements	Abbreviation	Symbol
Return on assets	Net income/total assets	ROA	Y_1
Independent Variable			
Debtors Collection Period	$\underline{\text{Average trade debtors.}} \times 365$ days Turnover	DCP	X_1
Cash Conversion Cycle	Days of sale outstanding +No. of day in inventories- Days of payable Outstanding	CCC	X_2
Accounts receivable turnover	$\underline{\text{Net Credit Sales}}$ Average accounts receivable	ART	X_3

2.9 Interpretation of Variables

2.9.1 Debtors collection period (DCP)

DCP shows the number of days an organization takes to recover its credit sales. The shorter the period the higher the return on assets position.

2.9.2 Cash conversation cycle (CCC)

CCC measures how efficient the firm is managing its cash flow. A short conversation cycle indicates that the firm is collecting the receivables as quickly as possible. A negative CCC will increase return on assets and a positive CCC will reduce ROA.

2.9.3 Accounts receivable turnover (ART)

ART shows the liquidity of debtors of a firm and measures the times receivables are rotated annually in terms of sales.

2.10 Gaps to be Filled by the Study

Most studies have done their research on trade receivables on working capital management and how it affects the profitability of firms such as Ebener and Asiendu (2012); Sharma and Kumar (2011); Mathuva (2010); Mogere (2003) and Mohammed (2011). These

studies do not provide a clear direction between the relationship of trade receivables and profitability. There is little of empirical evidence on the effect of trade receivable on the profitability of manufacturing firms in Kenya. This study is therefore an attempt to fill this gap and estimate the relationship between trade receivables variables and profitability of manufacturing firms listed on the Nairobi Securities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, population of the study, sample size selected as well as the model used in the study. Data analysis procedure and presentation is also presented in this chapter. The model used aimed at achieving the research objectives and framework upon which data was collected and analyzed.

3.2 Research Design

The research used descriptive research design as it described the characteristic and association between trade receivables and return on assets of manufacturing firms listed at the NSE. The research involved various procedures with an intention of drawing conclusions on the relationship between various variables of interest and thus answering the research question. The design was structured in nature and had formal research objectives. The study was based on secondary data obtained from the Annual reports of the manufacturing firms on the Nairobi Securities Exchange as well as the NSE hand book for the period 2008 to 2012.

3.3 Population of the Study

The target population of the study was all the nine manufacturing firms listed at the NSE between 2008 and 2012. Comparable data for this five year period on Debtors Collection Period (DCP), Cash Conversion Cycle (CCC), Accounts Receivable Turnover (ART) was used to have an analysis on the relationship that exists with the return on assets. The study utilized panel data where data on the Return on Assets (ROA) and trade receivable variables for each of the nine manufacturing firms over the five years were analysed. A document analysis of the financial reports of the nine firms over the years 2008, 2009, 2010, 2011 and 2012 was conducted to extract the relevant data. The use of these audited

statements and the NSE handbook enhanced a cost effective and accurate capturing of information.

3.4 Sample Size

The study considered all the nine manufacturing firms on the Nairobi Stock Exchange. This was therefore a census study. Manufacturing and allied firms engage in production of goods and services that are majorly sold on credit terms. Due to this, there is creation of large amount of trade receivables which eventually affect return on assets. Moreover, Manufacturing and allied firms require heavy investment in assets and this is financed from collection of trade receivables.

3.5 Data Collection and Analysis

The research used secondary data derived from annual reports and financial statements of the manufacturing firms listed on the NSE. Audited annual financial statements were obtained from the NSE library, NSE handbooks, CMA Library as well as their websites. The data was collected and edited before entering it into excel worksheet.

Panel data analysis was used for analysis since it involves 24 manufacturing firms over this period of time. Regression and Correlation analysis were used to establish the relationship between the trade receivable variables and the return on assets of the firms.

3.6 Model Specification

Descriptive statistics, multivariate regression and Pearson's correlation analysis was used to analyze the data. The random effect model and the fixed effect model will be used. To establish the relationship between the trade receivables variables and the return on assets, the multivariate regression model used for empirical analysis was as follows:

Equation 1

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{i+} \varepsilon_{it}$$

Where

Y_{it} : Return on Asset of firm i at time t (measures the profitability of the firms),

X_{1it} : Debtors Collection Period,

X_{2it}: Cash Conversation Cycle,

X_{3it}: Accounts receivable turnover,

α_i: is the error term that constitutes the effect of other variables influencing profitability,

β_1, β_2 & β_3: Proportionate change in the return on assets due to the respective trade receivable variable,

i: 1 to 24 firms,

t: time period 2008, 2009,…,2012.

μ_i: are individual-specific, time-invariant effects that may differ in the different firms.

ε_{it} is the error term.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study based on the objectives and research questions presented. It analyzes the variables involved in the study and estimates their relationship. In the first section, data description and analysis is performed. The model relationship and the analysis of the results are then interpreted. The purpose of the study was to determine the effects of the trade receivable variables (debtors collection period, cash conversion cycle and Accounts receivable turnover) on the profitability of the 24 manufacturing and allied firms listed in the NSE in Kenya. Secondary data was collected from annual financial statements obtained from NSE handbooks and the Capital Markets Authority for the five year period, 2008 to 2012. The profitability measure used was Return on assets.

4.2 Descriptive Statistics

In this section, descriptive analysis is performed on each variable using SPSS. The trend line for the four variables namely ROA, CCC, DCP and ART were computed for the five year period for each company. Figures 2 to 5 present the trend lines for the four variables under study. These trend lines provide a clear comparison of the 24 firms' performance and management of accounts receivables.

Results presented in Figure 2 have the overlay plot of the data on ROA for the 24 firms over the five years. The figure indicate that most of the manufacturing and allied firms enjoyed on average positive ROAs with exception of a few firms such as Eveready, Unga Limited and Kapchorua which showed negative ROAs. ROA for Unga Limited is seen to dip from 0.25% in 2011 to a low of -0.25 in 2012. The ROAs of the firms are also generally low since no firm had ROA of above 0.6%. The ROA indicates how profitable a company is

relative to its total assets. It illustrates how well management is employing the company's total assets to make a profit. The higher the return, the more efficient management is in utilizing its asset base. These results are consistent with Jarvis and Berry (2006) who stated that Return on Assets can vary substantially across different industries and recommended to compare it against company's previous values or the return of a similar company. Capital-intensive businesses, which have to carry a relatively large asset base, will calculate their ROA based on a large number in the denominator of this ratio. Conversely, non-capital-intensive businesses (with a small investment in fixed assets) will be generally favored with a relatively high ROA because of a low denominator number.

FIGURE 2
Trend of ROA For The Surveyed Firms
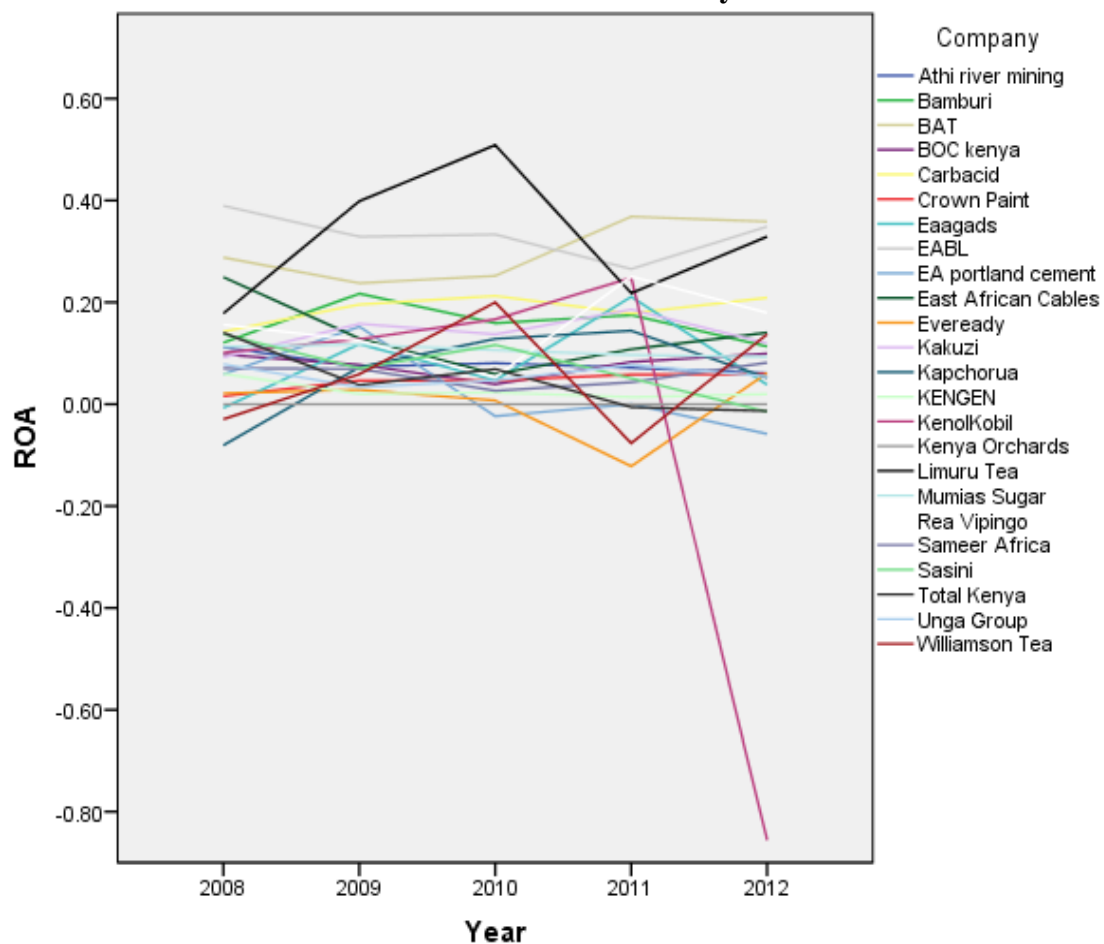
Results presented in Figure 3 indicate that the debtors collection period for the firms ranged from 24 to 45 days with Eveready limited showing the highest of 45 days in 2010 with Unga Group reporting the lowest of 24 days in 2011. DCP shows the average time taken to collect debt. A period of around 30 days shows efficiency in debt collection while a period more in excess of 30 days shows a slow and late payment by the debtors if the credit policy. This observation was made by Obida and Owolabi (2012) since most firms have credit terms of net 30. The debtors collection period would therefore range within this time with a few being less and similar small proportion being higher than 30 days.

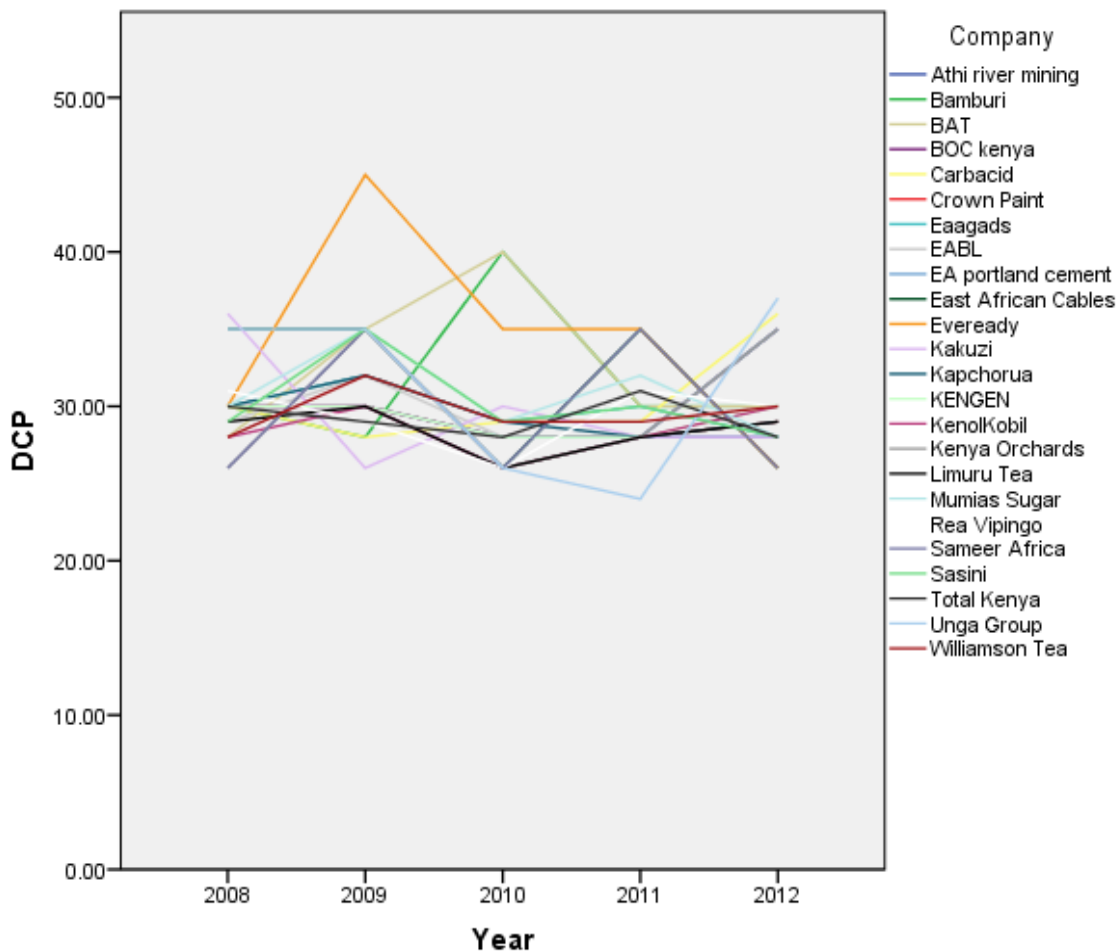**FIGURE 3**
Trend For DCP For 5 Years

Figure 4 presents results on the overlay trend line of Cash collection period for the five years for all the 24 manufacturing and allied firms listed in the NSE. The CCC ranged from 26 and 35 days for the firms. Kakuzi, Kapchorua and Limuru Tea reported the highest CCC of 35 days in 2009 while Kapchorua reported a CCC of 26 days in 2011 with Rea Vipingo also reporting a similar DCP in 2012. CCC is a measure of efficiency of working capital management, shortening the cash conversation cycle leads to high liquidity since it improves the efficiency of using the working capital and this can be done by speeding up collections and selling products to customers more quickly. According to Gentry et al (1990) shortening the CCC increases the efficiency of internal operations of a firm and results in higher profitability and higher market value of a firm. However, larger firms are not keen in shortening their cash conversation cycle since they always operate with adequate financial resources and have better access to both money and capital markets.
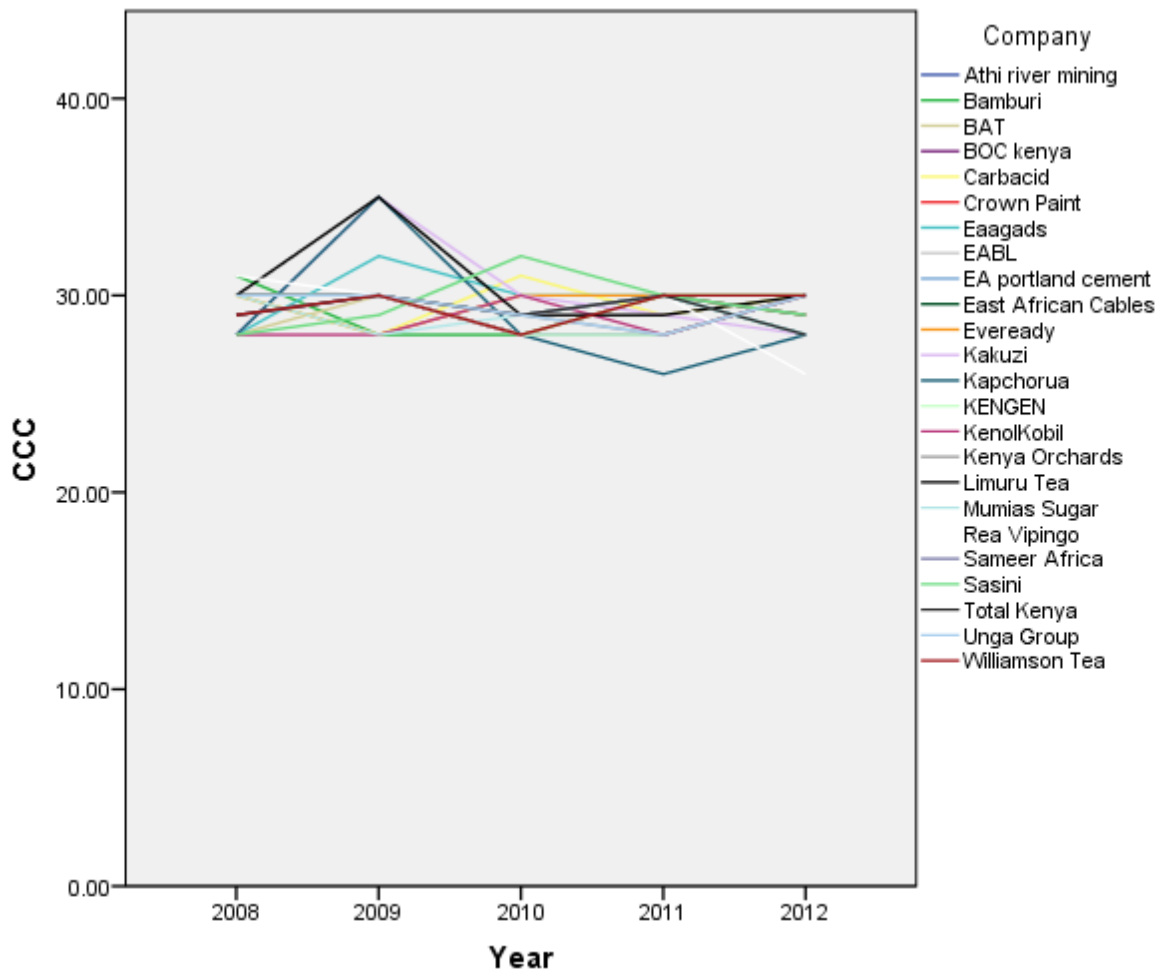
FIGURE 4
Trend For CCC For 5 Years

Figure 5 presents results and trend overlay for ART for the 24 firms in five years. The

ART ranged from 25.13 to 14.04 times. Unga Group reported the highest ART of 25.13 times

in 2011 while Eveready had reported the highest ART of 14.04 in 2009. Management of trade

receivables is essential for growth of firms. It enables debtors to acquire products and

services on timely basis before settlement of the amount. Jarvis and Berry (2006) published

that firms institute trade receivables' policies and they consider the following as critical.

Firstly, on debt control and collection periods, the longer the period, the more the trade

receivable levels thus a firm faces liquidity problems. Secondly, trade – off between trade

receivables levels, profits and revenue. When a firm extends credit to customers, sales levels

improves but on the other side, a firm incurs opportunity costs for non-collection of debt thus

lack of cash and administrative costs incurred to collect the debt.

FIGURE 5
Trend For ART For 5 Years
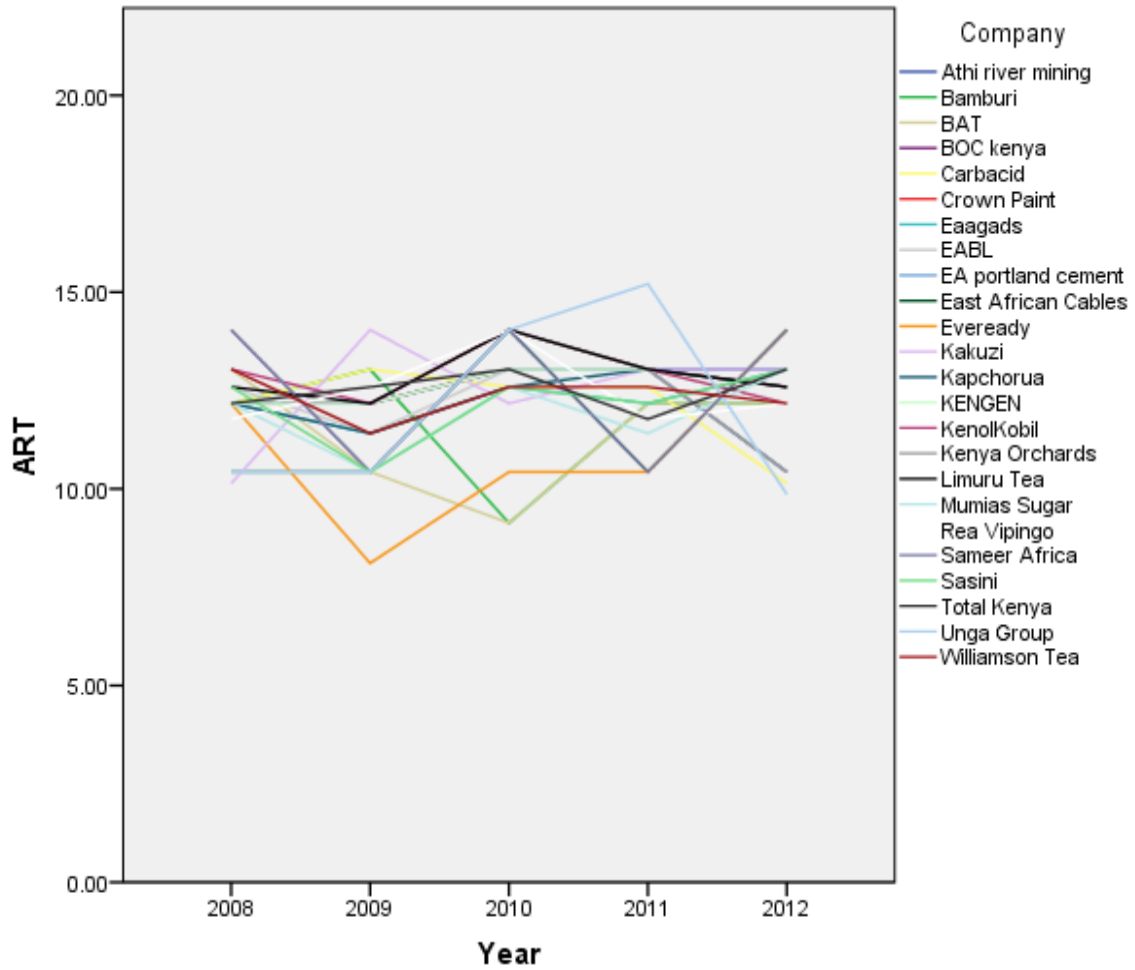
4.3 Correlations Analysis

The study measured the degree of association between profitability(ROA) and the three predictor variables (DCP, CCC and ART). Table 2 shows correlation of the variables.

TABLE 2
Correlation Matrix

		ROA	DCP	CCC	ART
ROA	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	120			
DCP	Pearson Correlation	-.010	1		
	Sig. (2-tailed)	.917			
	N	120	120		
CCC	Pearson Correlation	.057	.144	1	
	Sig. (2-tailed)	.538	.116		
	N	120	120	120	
ART	Pearson Correlation	.009	-.988[**]	-.184[*]	1
	Sig. (2-tailed)	.922	.000	.044	
	N	120	120	120	120

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

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

Table 2 presents Pearson correlation results of the study's dependent and independent variables to assess the association of the variables. Findings revealed that DCP was negatively and insignificantly associated with ROA (r = **-**.010; $\rho > 0.05$) indicating 1% negative relationship with profitability. These results agreed with findings by Erasmus (2012) who carried out a study on South African listed industrial firms on management of working capital and profitability. The study had established that there exists an inverse relationship between profitability and debt, liquidity ratios and trade receivable conversion cycles. The study also agrees with findings by Mohammadi (2009) who showed that there exists inverse association between conversion period of trade receivables, cash conversion cycle, inventories and profitability among firms listed at Tehran Stock Exchange between 1996 and 2005. The study findings further agree with findings from Deloof (2003) who documented

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that there exists negative relationship between profitability and the number of days accounts receivable take to be collected. , inventory and accounts payable. This is consistent to the fact that less profitable firms wait longer to settle their bills and shorter time to collect their debt. This study further supports the findings of Smith and Begemann (1997) who revealed that profitability and liquidity work in different reverse directions. However, this study contradicts with findings by Lazaridis and Tryfonidis (2006) who discovered that there exist significant association between profitability and cash conversion cycle of firms listed at Athen stock exchange. Firms record high profitability level by keeping the cash conversion cycle at its optimum levels. This study had however established that the association was not significant.

Further, ART was positively and insignificantly correlated to ROA ($r = .009$, $\rho > 0.05$) indicating 0.9% positive relationship with profitability. This study disagrees with Sola, Teruel and Solano (2008) who researched on SMEs' profitability and trade credit among 11,337 Spanish SMEs. Their study covered from 2000 to 2007 and they found out that managers boost firms' profitability by increasing the level of trade receivables. This study revealed that by increasing ART, SMEs could increase their profitability significantly. However, the current study established that the relationship between ART and ROA was positive but insignificant.

CCC was positively correlated with ROA ($r = .057$; $\rho > 0.05$) indicating a 5.7% positive relationship with ROA. This correlation was however not significant at 5% level. This finding disagrees with a study by Mathuva (2009) who concluded that there exists negative relationship between firms' cash conversion cycles and profitability among the firms listed at the NSE. This study also disagrees with results from a study by Eljelly (2004) who examined Saudi Arabian listed firms and found out that there is negative association between profitability and liquidity. Firms maintain high liquidity level to meet their short term

obligations and as such, the level of investment in profitable projects is low thus low level of profitability. In addition, the study disagrees with findings by Dong (2010) who did a study of firms listed at Vietman Stock Exchange between 2006 and 2008. From his study, Dong (2010) found out that there is strong inverse association between profitability and cash conversion cycles while the current study found an insignificant positive relationship between CCC and ROA.

4.4 Diagnostic Tests

Before performing the panel regression model, the data was subjected to diagnostic test to test whether it was fit for regressions analysis. First, any linear regression model assumes homoscedasticity where all variance of residuals are assumed to remain constant. To test for homoscedasticity was done using Breusch-Pagan Langrange Multiplier test. This test is based on the Null hypothesis that the variances for the error terms are constant against the alternate hypothesis that the variances of errors are a function of one or many variables under study. The results of the Breusch-Pagan Lagrange Multiplier test are presented in Table 3 These results indicate that there is no evidence of the presence of heteroscedasticity and hence we cannot reject the null hypothesis ($\chi^2 = 5.87$; $p > 0.05$).

TABLE 3
Breusch-Pagan LM Test

Model	Dependent variable	χ^2- value	p-value
1	Return on Assets	5.87	0.217

Another test performed on the data was to test the presence of collinearity. Collinearity diagnostics were performed using variance Inflation Factor (VIF). The collinearity diagnostics indicated a very high VIF of 42.861 and 42.981 for DCP and ART respectively indicating that there was a very high correlation between these two variables. This agrees with the correlation statistics that indicated a very high correlation of -0.988

between DCP and ART. This was due to the measurement where both variables are measure using amount of average account receivables and credit sales in a period. A decision was made to remove one of the variables from the study since both were measures that were comparable. After removal of ART, the VIF showed tolerance and the problem of collinearity was solved.

TABLE 4
Collinearity Diagnostics

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	DCP	.025	42.861
	CCC	.927	1.0196
	ART	.022	42.981

Further, a test was done to establish whether the observations were independent. However in time series data, this assumption is hard to satisfy since performance in one is usually affected by previous years. The test however confirmed that the errors in the data did not have autocorrelation as the Durbin-Watson coefficient of 1.711 was between 1.5 and 2.5 as the rule of thumb requires. This therefore indicated that the observations and errors were independent.

TABLE 5
Test For Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.071	.005	-.024	.1401	1.711

a. Predictors: (Constant), ART, CCC, DCP

b. Dependent Variable: ROA

Lastly, the assumption that there was normality in distribution of errors was tested. This was done using the Kolmogorov-Smirnov-Test. The results from this diagnosis indicated that all residuals for all the variables under study were normally distributed ($p > 0.05$).

TABLE 6
Test of Normality

	ROA	DCP	CCC	ART
N	1200	120	120	120
Kolmogorov-Smirnov Z	.183	.231	.170	.138
Asymp. Sig. (2-tailed)	.137	.126	.222	.471

4.5 Panel Data Analysis

Panel data analysis using either the fixed effects or the random effects model was applied to analyze the data for the 24 manufacturing and allied firms for five years from 2008 and 2012. This was done to determine whether Debtors Collection Period (DCP), Cash Conversion Cycle (CCC) and Accounts receivable turnover (ART) had any significant influence on profitability of the firms (ROA). However, before the analysis, a choice had to be made of which of the two models, random or fixed were more for the data under study. To determine this, a Hausman test was performed with results as indicated in Table 7. The test is performed with the null hypothesis that the fixed effects model is more appropriate and fit for the data. There was no evidence to reject the null hypothesis ($p < 0.05$) and hence the FE model was applied

TABLE 7
Hausman Test Results

Model	Dependent variable	Chi^2	Prob > Chi^2
1	Return On Assets (ROA)	527.63	0.014

After the Hausman test, Fixed effects panel data analysis was performed with results being as presented in Table 8. However, due to collinearity between DCP and ART, ART was removed from the model since the collinearity diagnostics indicated to that the collinearity between the two variables could result to unreliable results.

TABLE 8
Fixed Effects Panel Regression On Return On Assets

Fixed-effects (within) regression					Number of obs = 120	
Group variable: Companies					Number of groups = 24	
R-squared	Within = 0.0334				Observations per group = 5	
	Between = 0.0422					
	Overall = 0.0363					
Corr (u_i, X_b) = 0.0287					F (3, 93) = 4.33547	
					p = 0.235	
					95% Confidence Interval	
Return on Assets	Coefficient	Std. Error	t	p > t	Lower Bound	Upper Bound
DCP	-.001421	.004018	-.195	.845	-.008216	.007135
CCC	.006381	.009413	.637	.525	-.013021	.025245
Constant	-.049131	.284012	-.174	.862	-.611007	.513109

Findings from Table 8 revealed that only 3.63% of overall variation in variation of the return on assets is predicted by DCP, CCC and ART (R^2 = 0.0363). Further, the results indicate that 96.37% of the change on ROA is explained by other factors not considered in the model. Their joint prediction is therefore insignificant as shown by F value of 4.33547 and where $\rho > 0.05$.

The Standardized Beta Coefficients give a measure of the contribution of each variable to the model. CCC had the greatest contribution (β=0.006381) indicating that a unit increase in the CCC would lead to an increase in ROA by 0.006381 units. A unit increase in DCP would result in a decrease of the ROA by 0.001421 units. However, the contributions of DCP and CCC towards profitability were not significant at 95% confidence interval (p > 0.05).

Thus, any change in the independent variables, that is, Debtors Collection of Period and Cash Conversion cycle do not have a significant impact on the profitability of the manufacturing firms as measured by the Return on Assets. These findings are consistent with those of Ashok Kumar (2013) on cash conversion cycle and profitability of cement manufacturing companies of India. Kumar found out that CCC did not have a significant effect on ROA. However, the findings disagree with findings from a study by Moss and Stine (1993) who found that CCC in small businesses had a significant effect on profitability. In the study by Moss and Stine (1993), CCC is associated with small business because small businesses need to better manage their cash availability due to lack of credit. Shortening the CCC enhances profitability because the longer the CCC the greater the need for external borrowing.

Although not significant, the negative Pearson correlation coefficient (-0.010) reveal an inverse effect on ROA by DCP. This study agrees with a study by Dong (2010) on the inverse effect of DCP on ROA but disagreed on the significance of the effect. The study by Dong (2010) on firms listed at Vietman Stock Exchange between 2006 and 2008 and found out that there is strong inverse effect on ROA by DCP. This study had established that when the trade receivables conversion days increase, profitability level of firm decreases. The current study agrees with a study by Mathuva (2009) who did a study on the working capital management on firm's performance of firms listed at the NSE between 1993 and 2008. The study established that DCP had an insignificant negative effect on profitability of the studied firms. The current study established that there is no significant effect of DCP on ROA. For instance, BAT also had one of the longest mean DCP of 32.6 days yet it's one of the leading in terms of ROA. This is consistent with the findings of Balasundaram (2010) who conducted a study on working capital management and its impact on profitability of selected listed manufacturing companies in Sri Lanka. Balasundaram found that although DCP is a good

measure of efficiency, it was not significantly associated with ROA. In support, Uchenna, Okwo and Ugwunta (2012) also studied the Effects of working capital management On Profitability focusing the Top five Beer Brewery Firms in the World for the period of 2000-2011 and found out that DCP is not a significant determinant of ROA (p=0.522). From the results DCP and CCC are not significant determinants of profitability in terms of ROA.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study aimed at analyzing the effect of trade receivables on the return on assets as a measure of profitability of manufacturing firms listed at the Nairobi Securities Exchange. This chapter will therefore provide a summary of the findings from the study, conclusions and recommendations based on the findings of the study. It will also provide suggestions for further research on the effect of trade receivables on profitability of firms.

5.2 Summary of the Findings

The first objective of the study was to determine the effect of debtors collection period on the profitability of manufacturing firms listed at the NSE, The study reveals that DCP is not a significant determinant of ROA. Findings revealed that DCP was negatively and insignificantly associated with ROA ($r = -.010$; $\rho > 0.05$) indicating 1% negative relationship with profitability. Correlation tests and panel data analysis through the fixed effects model revealed that there was no association between DCP and ROA. It would be expected that companies with less DCP would be efficient in cash conversion and hence be more profitable. However, this study established that DCP did not have any significant effect on profitability of the manufacturing and allied firms as measured through ROA.

The second objective of the study was determine the effect of cash conversation cycle on the profitability of manufacturing firms listed at the NSE. CCC was positively correlated with ROA ($r = .057$; $\rho > 0.05$) indicating a 5.7% positive relationship. Further, CCC did not have any significant effect on profitability of the surveyed manufacturing and allied firms. Companies with shorter cash conversion cycle are expected to show high levels of liquidity which would mean that they are able to invest such cash on profitable projects. This would results to enhanced profitability. However, findings from this study established that length of

the CCC did not have any significant effect on profitability of the firms measured through ROA.

The third objective of the study was determine to the effect of accounts receivable turnover on profitability of Manufacturing firms listed at the NSE, the study results revealed that ART was not significantly correlated with ROA. , ART was positively and insignificantly correlated to ROA (r = .009, $\rho > 0.05$) indicating 0.9% positive relationship with profitability This indicated that increase or decrease in ART would not have any significant effect on ROA. However, this variable was not included in the panel data analysis. However, its effect on ROA is expected to be similar to the effect of DCP on ROA. This therefore indicates that ART therefore does not have any significant effect on profitability of the surveyed manufacturing and allied firms.

5.3 Conclusions

The study found out that trade receivables have an insignificant effect on the return on assets of listed manufacturing and allied firms in Kenya. Trade receivables is therefore used as source of financing, to boost sales, growth and for price discrimination purposes, Firms institute proper trade receivables policies to control its level since it is classified as the second level of current assets.

Using the return on assets as the measure of profitability, the three variables don't have a significant impact on the profitability, trade receivable do not contribute noticeably to the profit of the listed manufacturing firms and further studies may consider using assessing the effect of the trade receivables on other measures of profitability such as other working capital components and other external factors. Though increase in CCC is shown by the findings to lead to an increase in ROA, the effect is insignificant at 5% significance level. Further, DCP has an insignificant negative effect on ROA indicating that increase in DCP would lead to an insignificant reduction in ROA of manufacturing and allied firms. Though

ART was removed from the analysis, it is expected to have an insignificant positive effect on ROA.

In conclusion, there exists insignificant negative relationship between DCP and return on assets of manufacturing and allied firms quoted at the NSE between 2008 and 2012. Further, there is insignificant positive effect of CCC and ART on ROA of manufacturing and allied firms in the NSE. Though management of trade receivables is expected to affect the liquidity and earning power of the organization, the current study found that any effect of receivables management did not have significant effect on profitability.

5.4 Recommendations

5.4.1 Recommendations for Policy

The study therefore recommends a well-defined policy framework for the management of trade receivable in manufacturing firms be instituted to help in achieving the objectives of the firm. Even though they do not have an effect on the return on assets of the manufacturing firms and allied firms under study, it will assist management enhance efficiency, maximize use of financial resources and achieve financial stability of their firms while observing prudent management of trade receivable. The management of these firms should also consider taking a study of their records to establish efficient trade receivable parameters to be adopted. Individual firms should engage and pursue customers with shorter payment period while sourcing suppliers with a longer credit period.

5.4.2 Suggestions for Further Studies

A further research on the effect of trade receivables on the manufacturing firms' profitability may be considered taking into consideration the following:

i) A similar study including firms not listed on the Nairobi Stock Exchange.

ii) A similar study that uses other measures of profitability.

iii) A similar study though covering a longer period of time.

iv) A similar study incorporating other influencing variables e.g. debt ratios and liquidity ratios.

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APPENDICES

Appendix I

Sample that was used – listed manufacturing and allied firms at NSE

1. Athi River Mining Ltd
2. B.O.C Kenya Ltd
3. Bamburi Cement Company Ltd
4. British American Tobacco Kenya Ltd
5. Carbacid Investments Ltd
6. Crown Paint Ltd
7. Eaagads Ltd
8. East African Breweries Ltd
9. East African Cables Ltd
10. East African Portland Cement Ltd
11. Eveready East Africa Ltd
12. Kakuzi Company Ltd
13. Kapchorua Tea Company Ltd
14. KenGen Ltd
15. KenolKobil Ltd
16. Kenya Orchards Ltd
17. Limuru Tea Company Ltd
18. Mumias Sugar Company Ltd
19. Rea Vipingo Plantations Ltd
20. Sameer Africa Ltd
21. Sasini Ltd
22. Total Kenya Ltd
23. Unga Group Ltd
24. Williamson Tea Kenya Ltd

Source: CMA & NSE (2014)

APPENDIX II

Secondary data tool

NO.	ITEM	FINANCIAL STATEMENT
1	Total equity	Balance Sheet
2	Accounts receivables at the start of the year	Balance Sheet
3	Accounts receivable at close of the current year	Balance Sheet
4	Inventory at for start of the year	Income& Expenditure Statement
5	Inventory at the close of current year	Income& Expenditure Statement
6	Cost of goods sold	Income& Expenditure Statement
7	Accounts payable at the start of the year	Balance Sheet
8	Accounts payable at the close of the year	Balance Sheet
9	Number of days (365 days)	
10	Revenue	Income& Expenditure Statement