RELATIONSHIP BETWEEN COMMERCIAL PAPER FINANCING AND WORKING CAPITAL COMPONENTS IN KENYA

BY

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DECLARATION

I declare that this research project is my original work and has not been presented for a degree in any other university.

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

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DEDICATION

I dedicate this project work to The Almighty God; My late dad Mr. Benjamin Musyoka Mweu and the rest of my entire Family, Mum, brothers and sister for their encouragement and moral support during the course.

ABSTRACT

The objective of the study was to establish the relationship between Commercial Paper financing and working capital components in Kenya. A casual research design was adopted. Population consisted of all the twenty seven companies that have issued commercial paper in Kenya since the first issue by Brooke bond in 1994.Twenty two companies that have been in the market for at least two years were analysed.

Secondary source of data was used to help the researcher measure both aspects of the variables which are Commercial Paper and working capital components - Inventory, Accounts receivable and Cash. Period of study was from 1994 when the first paper was issued in Kenya to 2011. The Source data included NSE database, Capital Markets Authority (CMA) and Annual Audited Financial Statements of selected companies. Data was analyzed using Statistical Packages for Social Sciences (SPSS) version 11. Regression and correlation analysis was used to determine the nature and the strength of the relationship between the independent and dependent variables.

Based on the regression and correlation analysis of each of the companies, the findings indicated that in the majority of the companies there is a strong positive correlation between commercial paper borrowings and working capital components. This means that variation in commercial paper borrowings is fully explained by working capital components that are assets in these companies. The study also showed that for a unit change in commercial paper outstanding overally in all the companies, the working capital component that showed a huge variation is cash followed by accounts receivable and Inventory respectively. The overall regression results of the 22 companies showed that CP borrowings have a negative relationship with cash holding in most firms. This means that as the level of cash holding decrease, CP borrowing increase. On the other hand CP borrowings showed a positive relationship to inventory accumulation and accounts receivable in most of the firms hence providing evidence that the firms that issue CP in Kenya use it to finance increases in inventories and accounts receivable.

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LIST OF ABBREVIATIONS

ACCPAY	-	Accounts Payable
ACCREC	-	Accounts Receivable
CA	-	Current Assets
CL	-	Current Liabilities
CMA	-	Capital Markets Authority
CP	-	Commercial Paper
EAI	-	East Africa Industries
INV	-	Inventory
IPS	-	Industrial Promotion Services
LIBOR	-	Latest Inter Bank Lending Rate
LTD	-	Limited
LWC	-	Liquid Working Capital
NSE	-	Nairobi Securities Exchange
OD	-	Overdraft
SPSS	-	Statistical Package of Social Sciences
TB	-	Treasury Bills
USA	-	United States of America
WC	-	Working Capital
WCM	-	Working Capital Management

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Short term finance is typically defined as debt provided for periods of one year or less. It is usually easier to obtain and less expensive than longer term finance. It can be provided by banks who prepare to make short term lending arrangements with clients since it roughly corresponds to the maturities of deposits in their banks. Alternatively, large well established companies have the option of going directly to the market place to raise short term funds. This borrowing may be in the form of Commercial paper (Graham and Harvey, 2001).

Commercial paper (CP) is a short term unsecured promissory note issued by major corporations to fund working capital requirements. It is a short-term publicly traded, unsecured debt that has an average maturity of about 45 days. Due to its short maturity, outstanding CP is typically rolled over when it matures.

To issue CP, firms establish a CP program that authorizes borrowing up to a pre-specified maximum. Once the program is established, a firm can borrow under it without any regulatory approval or disclosure. Establishing these programs typically entails meaningful costs. These include fees to credit rating agencies for obtaining and maintaining a short-term credit rating, fees to banks for backup credit facilities, and fees paid to dealers. (Post 1992).

According to Pedro and Pedro (2007) the investments that firms make in short term assets and the resources used with maturities of under one year like CP represent the main share of items on a firm's balance sheet. A prevailing view is that it is used primarily to finance working capital needs. For example, Ross et al. (2008) discuss CP in the context of working capital management. Calomiris et al. (1995) provide evidence that CP is used to finance working capital.

1.1.1. Working Capital.

A business requires different types of capital in order to operate. Working capital is often considered to be the most significant types of capital. It is claimed that the amount of this can determine the success of the company. Working capital (WC) is how much in liquid assets that a company has on hand that is used to build the business. Working capital is also viewed as the amount of current assets that a business has left after all the liabilities have been subtracted.

These liabilities usually involve any money that needs to be paid during the fiscal year. It can include all the money that needs to be paid to those providing services and materials.

The main components of working capital include inventory, cash, accounts receivable, short term investments and accounts payables. WC can be positive or negative depending on how much debt the company is carrying. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations. Companies with negative working capital may lack the funds necessary for growth. The more that assets are in the form of cash, the lower the amount of *"*liquid*"* working capital needed. (Brigham and Houston, 2007).

Whenever a need of working capital arises due to the increasing level of business activity financing arrangements should be sought quickly. Similarly if surplus funds arise they should be invested in short term securities. In order to continue trading, an organization should be in a position to meet its immediate obligations and therefore sufficient cash must be generated by the organization. Even the most profitable business can quickly go under if it does not have sufficient liquid resources. This means, working capital is essential for the organization's long term success and development. The greater the extent to which current assets cover the current liabilities, the more solvent the organization. (Panday 2008).

Working Capital Management (WCM) refers to choosing the levels of mix of cash, marketable securities receivables, inventories and short term financing.A finance manager devotes more time to working capital management than any other activity because current assets by their nature are changing daily and managerial decisions must be made. Questions relating to how much inventory is to be carried and whether there are funds to pay for it are often asked. Unlike long term decisions there can be no deferrals of actions relating to working capital. While long term decisions determine the success of the firm, short term decisions on working capital determine whether firms get to the long term (Block 1992).

One reason why firms may employ CP as a short term source of financing to meet their WC needs is because it is very cheap and cost efficient and also its borrowing amounts can be adjusted very easily by issuing a new paper or retiring it at maturity. This can be particularly valuable for new investment where the exact funding needs are not known at the inception of the project.CP issuance does not require underwriting services and has lower transaction costs. Consistent with this idea, survey evidence suggests that firms issue short-term debt until

sufficient debt has been accumulated to justify issuing long-term debt (Graham and Harvey, 2001).

1.1.2.. Theoretical Expected Relationship between CP and WC.

According to Calomiris et al. (1995) Increased commercial paper issuance may also occur to finance the accumulation of inventories by the issuer especially around a business-cycle peak. Firms with a strong financial position issue commercial paper more so during downturns in order for them to be able to extend credit to other firms. They act as financial intermediaries to other firms.

Calomiris et al. (1995) found that commercial paper is strongly correlated with increases in accounts receivable, suggesting the possibility of a causal link. Reductions in the supply of bank credit increase the demand for inter-firm financing, thus leading indirectly to an increase in aggregate commercial paper via those firms in the economy with the strongest balance sheets. The study also showed that increased commercial paper issuance is used to finance inventories. Since business-cycle peaks are often characterized by unplanned inventory accumulation, the inventory cycle helps explain the behavior of commercial paper. This is mainly due to shifts in the demand for firm intermediated credit, and shifts in the need to finance inventories.

Commercial paper issuers have lower ratios to debt of inventories, and payables. The components of liquid working capital that differ most across classes are cash assets and short-term debt; neither accounts receivable nor accounts payable fully explain the low average working capital ratios of CP issuers. (Calomiris et al., 1995).

The positive effect of inventories and accounts receivable in the commercial paper probits is also interesting, given that on average commercial paper issuers hold smaller amounts of inventories and liquid working capital. Firms with large inventories and accounts receivable use the commercial paper market to give them greater flexibility in their short-term financing. Short-term creditworthiness requires more stringent standards than long-term creditworthiness because commercial paper serves as a money-market instrument. Thus part of the price of admission to the commercial paper market is the maintenance of more liquid assets (Gorton and Pennacchi, 1990).

According to Calomiris et al.(1995) correlations suggest that commercial paper is used to finance changes in inventories and net accounts receivable, and support the notion that commercial paper provides flexibility for the financing of volatile short-term assets. The study provided evidence that firms use commercial paper to finance increases in inventories and accounts receivable.

Gertler and Gilchrist (1993) find that large firms show substantial increases in inventories and short-term debt around cyclical peaks, suggesting that commercial paper may be financing the movements of inventories. Another explanation for the movements of commercial paper is the need to finance trade credit. As the economy weakens, customers pay their bills more slowly and firms may extend more trade credit as a means of financing their customers' short-term credit needs. Because high quality firms have easy access to short-term debt through the commercial paper market, they in particular may serve as "intermediaries" for other firms experiencing liquidity problems during business-cycle downturns. Such high quality firms may allow their customers who are experiencing contractions in earnings or increases in unanticipated inventories to expand accounts payable, effectively providing a "pass through" of commercial paper financing to the customers of commercial paper issuers.

1.1.3. The Kenyan Commercial Paper Market.

Commercial paper market in Kenya is very recent compared to major and developed economies like the United States of America (USA) and European countries. The first issue was in 1994 and it was not until 1997 that activity increased. Prior to this, the Central Bank of Kenya limited the issuance to companies listed in the Nairobi Securities Exchange.(NSE).In the absence of credit rating agencies in Kenya, the Central Bank of Kenya undoubtedly reasoned that investors could access the creditworthiness of the issuers themselves as those listed published their financial statements periodically. Capital Markets Authority (CMA) issued revised rules in April 1997 that allowed a wider range of companies to issue commercial papers irrespective of their listing status subject to meeting rules and regulations laid out in the CMA guidelines. As a regulator, CMA prescribes the minimum conditions that are considered protective to investors in CP market. Issuers of CP in Kenya use dealers who are called placement agents or arrangers. There is no organized secondary market that has been developed for CP in Kenya.

As a short-term money market instrument, CP is primarily used for financing short term needs – paying quarterly tax assessments, and funding inventory and accounts receivable. In recent years

many firms have also used CP to finance major construction undertakings. Kidwell (1990).In Kenya, it can be issued for periods from 1-365 days, although its most popular maturities are 30 and 91 days. Since CP is an unsecured promissory note, any company in Kenya issuing the paper must represent a good credit risk. The market in Kenya has relatively gone down since its inception with total outstanding issues as high as Ksh11.6 billion between 1997 and 1999 now down to Ksh 1.2 billion in 2011 (Appendix III).

Many firms have voluntarily exited the market within this period due to various reasons. Despite the free fall in the shilling in late 2011, there was no significant change in this market with the normal companies having their issue renewed by CMA. Since 1994, the numbers of companies that have issued CP are only 27 (Appendix 1).

1.2 Statement of the Problem

Today's business environment is very competitive and firms must strategize in order to remain competitive and profitable. Cost cutting measure is the language in today's business circles and hence it has become inevitable for companies to source for cheaper source of finance. As at now, commercial banks in Kenya are charging very high interest rates on borrowing currently at almost 25%.CP therefore offers a more attractive financing option than bank loans and overdraft (OD) and also their interest rates are reasonable at +1% above treasury bill rate. CP borrowing therefore substitutes for cash holdings and bank credit lines.

Several studies have been conducted both locally and abroad on commercial paper as a short term source of financing and its main uses. Matthias et al. (2008) studied the relationship between commercial paper and firm's financial flexibility and found that CP represents a flexible source of financing because it allows firms to borrow only if good investment opportunities or a shortage of internal cash flow used for meeting their working capital requirements arise. Matthias et al. (2010) concluded CP borrowings are positively correlated with any short and long-term investment unlike other forms of debt. Firms choose to access the CP market in anticipation of changes in Investment opportunities and that CP access has a causal effect on Investment behavior. Calomiris et al. (1995) focused on the role of CP in working capital management and concluded that CP issuance is positively correlated with sales and earnings and argued that companies issue CP to finance unplanned need of increase in Inventory as the level of business activity increases. Issuers also act as financial intermediaries by financing increases in accounts receivables of their non-CP issuing customers. High quality firms increase the level of accounts receivable and finance these with commercial paper.

Kinyua (2006) looked at factors hindering CP market development in Kenya and recommended that further studies should be done to determine effectiveness of commercial paper in managing short term cash flows at a low cost. Nganga (1999) who did a similar research highlighted that volatility of interest rates have hindered deepening of the market in Kenya. Njogu (2003) did a paper on Price impacts of CP issue announcements concluded that companies that have taken the bold step of substituting bank loans with CP experience significant interest savings.

Studies have not been done in Kenya to explain the prevailing view that CP is primarily used to finance working capital requirements of firms specifically inventories and accounts receivables. Despite the importance of CP as a short term financing mechanism, very little is known about why firms use this market in Kenya and how it affects firms' investment and capital structure decisions. This study therefore seeks to bridge the knowledge gap on the relationship between commercial paper financing and components of working capital with respect to firms that have issued the paper in Kenya.

1.3 Objective of the Study.

The objective of the study is to establish the relationship between Commercial Paper financing and working capital components in Kenya.

1.4 Significance of the Study

The study will be of importance to all the players in the CP market i.e. Investors/lenders, Credit borrowers, Agents/dealers, and scholars/Academicians.

Investors. The findings will provide valuable information to investors for them to appreciate the investment needs of the issuers in more detail.

Credit borrowers. The paper will give credit borrowers information to explore cheaper financing options instead of depending on the traditional bank loan and overdraft.

Researchers and Academicians. The paper will contributes to the literature on CP and encourage scholars to conduct further research on the topic. Commercial paper knowledge is also significance for students of commercial banking.

The study is also important to management and employees of companies as it gives insights into opportunities of financing their working capital expenditure cheaply through commercial paper issues, which would translate to more profits.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature that forms the basis of this study. It will highlight the theoretical framework where theories/hypothesis and models relating to the study are discussed. This will be followed by a review of empirical literature where past studies by various scholars locally and globally on commercial paper and working capital are discussed. A review of other literature on commercial paper financing will then follow. Lastly a summary of literature wraps up the chapter by pointing out the gap in literature that the present study seeks to bridge.

2.2. Key Theories Guiding this Study.

2.2.1. Keynesian Theory of Money.

The level of cash and marketable securities held by firms is determined by the motives of holding them. There is need of holding substantial amounts of money given that money market instruments are liquid and hence firms need to have liquid working capital like cash so as to settle bills and any other recurrent expenditure like payments of salaries, trade debts, taxes and dividends. The borrowing ability of firms from the market like issuing CP and marketable securities can be used to satisfy speculative motives. Commercial paper provides flexibility for financing of volatile short term assets and hence providing the need for firms to hold substantial amounts of money given that money market instruments are liquid (Keynes, 1956).

2.2.2. Baumol model.

Firms attempt to minimize the cost of holding liquid working capital and the cost of converting marketable securities like CP into cash. The firms' cash payments occur uniformly over a period of time, the opportunity cost of holding cash is known and it does not change over time, and the firm will incur the same transaction cost whenever it converts CP into to cash (Baumol, 1952).

2.2.3 The miller Orr model.

In practice firms do not use their liquid working capital for example, cash uniformly nor are they able to predict cash inflows and outflows. The model allows for daily cash flow variations and

provides for two control limits –the upper and lower limit. Companies buy or sell marketable securities like CP only if the cash balance is equal to any one of these. The model therefore assumes that the distribution of liquid working capital (cash flows) is normal (Miller et.al., 1996).

2.2.4 The Seasonality Hypothesis.

Matthias et al., (2008) tested the hypothesis which posits that firms use CP to accommodate seasonal fluctuations in working capital which are more prevalent for firms with stronger seasonality in sales.The model implies that firms that anticipate an increase in seasonality in sales are more likely to establish a CP program. which then allows them to accommodate the seasonal fluctuations in working capital.The model implies that firms experience stronger seasonality in sales after they enter the CP market and a decline after exiting the market because their ability to accommodate seasonal fluctuations in working capital is lower.

2.2.5 The Investment Hypothesis.

The hypotheisis posits that firms use CP to fund both short term working capital requirements and long term needs.It was tested to find out why CP may be preferred to alternative forms of financing for certain types of investment needs whether short term or long term. The empirical implications of the hypothesis was that firms enter the CP market when they have greater funding needs for investment or better investment opportunities and when their investment outlays are higher hence showing that CP borrowing amounts should be positively correlated with short and long term investments (Matthias et al.,2010).

2.2.6 The Liquidity Hypothesis.

CP serves as a source of liquidity for firms and can act as a substitute for other forms of corporate liquidity such as liquid working capital in form of cash and bank lines of credit, both of which could also be used to finance new investments at short notice or to finance investment until a cost efficient bond issuance size is reached.The hypothesis suggests that entry into the CP market may be precipitated by a decline in liquid working capital already held by the firm as they seek to increase their liquidity by entering the CP market and increase the level of liquid working capital held after exiting the CP market (Matthias et al., 2010).

2.2.7 The Market Timing Hypothesis.The hypotheisis suggests that

The hypotheisis suggests that firms attempt to time the use of fixed versus floating rate debt based on the spread between short and long term interest rate.Floating rate debt, such as CP is used to finance their shorterm working capital needs and take advantage of favorable short-term interest rates.Hence firms enter the CP market when short-term interest rates are low and also increase their borrowing amounts in the CP market at this point.Faulkender (2005) provides support for the hypothesis by showing that firms use more floating rate debt like CP when the term structure is steeper. Since the interest cost of CP is linked to the latest interbank lending rate (LIBOR), market timing considerations may drive CP issuance decisions.

2.2.8 The Financial Flexibility Hypothesis

In the hypothesis,Matthias et al.,(2008) shows that flexibility is valuable for firms that face a high degree of uncertainty about their investment opportunities.CP provides firms with flexibility in their short term investment and financing decisions like flexibility in the decision to borrow,amount of borrowing, and length of the borrowing period.Uncertainty regarding the potential arrival of investment projects means that flexibility with respect to the decision to borrow allows firms to observe the arrival of projects before raising capital.Flexibility with respect to the amount of borrowing allows firms to match borrowing amounts to investment needs more closely.Flexibility in the length of the borrowing period is expected to be valuable to issuers when the length of the project is uncertain.

2.3 Review of Empirical Studies Related to the Study.

Calomiris et al, (1995) did a study on Commercial paper, corporate finance and the business cycle: A microeconomic perspective. In the paper, they shed some light on the direction of causality in the relationship between commercial paper and working capital requirements of firms. They show that commercial paper issuance is restricted to firms with strong balance sheets and high cash flows. Their evidence was consistent with the hypothesis that that increased commercial paper issuance may occur to finance the accumulation of inventories by the issuer around a business cycle peaks. This peaks are often characterized by unplanned inventory accumulation, hence the inventory cycle may help explain the countercyclical behavior of commercial paper.

Correlations suggest that commercial paper is used to finance changes in inventories and net accounts receivable, and support the notion that commercial paper provides flexibility for the financing of volatile short-term assets. To test these propositions, regressions of inventories and liquid working capital were run on several lags, estimating separate regressions for two subsets of firms that issue commercial paper. By classifying firms according to their access to commercial paper markets, the researcher was able to identify the movements in inventories and working capital. The model used to undertake the regressions was CP as the dependent variable against components of WC. Separate regressions were run between CP as a proportion of total debt CP_{it} and components of WC inventory (INV),accounts receivable (ACCREC), and CASH as shown below:-

$$CP_{it} = \beta_o + \beta_2 \text{ INV}$$

$$CP_{it} = \beta_o + \beta_3 \text{ ACCREC}$$

$$CP_{it} = \beta_o + \beta_3 \text{ CASH}$$

Their data set was based on quarterly and annual data on commercial paper outstanding and ratings for issuers rated by Moody's (rating agency) for the period 1985 through1992.This data was merged with financial data from Standard and Poor's Compustat. This unique panel of data allowed them to relate the movements in working capital to the macro facts about CP.

According to the broad predictions of the model, CP issuers should have a lower cost of short-term funds, and therefore should display lower sensitivity of inventory and liquid working capital investment to cash flow. The regressions used annual data to estimate the sensitivity of inventories and liquid working capital to three lags each of CP-to-overall debt. These regressions control for firm fixed effects by differencing the specification and instrumenting using lagged regressors. Comparisons revealed much less cash flow sensitivity of inventory investment among firms with access to commercial paper markets showing that CP issuing firms' inventories are relatively sensitive to their lagged stock of liquid working capital paper.

The regressions further provided support for the view that commercial paper issued is used to finance inventory accumulation. The firm-level correlation between the growth rate of inventories and commercial paper was 0.095 using one quarter differences and 0.281 using four-quarter (annual) differences. The correlation between the four-quarter growth rate of inventories

and the ratio of commercial paper to total debt (0.157) provided additional evidence that for firms that have the option to issue the paper CP becomes the marginal source of finance for inventory accumulation.

The regressions provided further evidence that commercial paper is used to finance trade credit. The one-quarter and four-quarter correlations of commercial paper with accounts receivable were 0.108 and 0.182, respectively. It is also the case that the ratio of commercial paper to total debt is positively correlated with accounts receivable (0.088 and 0.133, respectively), providing evidence that commercial paper is the marginal debt instrument for financing accounts receivable. It is interesting to note that the correlation between inventory changes and accounts payable is relatively high for firms without access to public-debt markets (0.13), but is essentially zero (-0.004) for commercial paper issuers.

These results extend the results of Carpenter, Fazzari, and Petersen (1994) and Kashyap, Lamont, and Stein (1994) by demonstrating that access to commercial paper markets can be used to identify firms for whom the short-term cost of funds is relatively low. These regressions together with the research of others who have found similar effects are viewed as a suggestive first step, not as conclusive evidence for the existence of excess buffer stocks of working capital for finance-constrained firms. Nevertheless, these preliminary findings suggest that commercial paper issuers enjoy a lower shadow cost of short-term funds than a simple inspection of observed interest rates would reveal.

Kashyap, Stein, and Wilcox (1993) find that the ratio of bank OD to bank OD plus commercial paper (the "mix") is positively associated with various measures of economic activity. They interpret this as evidence that firms substitute away from bank OD into commercial paper during bank credit squeezes.

They also found that stocks of inventories and liquid working capital relax financing constraints in two ways. First, both are preferred forms of collateral for bank loans. Inventories (particularly in the form of raw materials, which constitute the bulk of inventories) are easily appraised and easily liquidated. Second, firms with high costs of external finance may use liquid working capital as a "self-insurance" device. If a firm knows that it will have trouble raising funds, it may choose to accumulate liquid working capital during high earnings periods so that it can draw down its war chest during low earnings periods.

Empirical studies have confirmed the role of liquid working capital as a self insuring device for finance constrained firms. Kashyap, Lamont, and Stein (1994) find that sensitivity of inventories to liquid working capital is only apparent in firms without bond ratings.

Carpenter, Fazzari, and Petersen (1994) find that inventory responses to earnings are larger for small firms than for large firms, which they interpret as evidence that finance constrained firms use inventories to offset fluctuations in earnings, and thus maintain smooth fixed capital investment.

Calomiris and Hubbard (1994) find that firms facing high costs of external finance display the greatest earnings sensitivity of working capital to earnings, and that the elasticity of working capital with respect to earnings is much higher than that of fixed capital.

Calomiris et al. (1995) conducted an empirical study on commercial paper, corporate finance, and the business cycle: microeconomic perspective to show the relationships between commercial paper, inventory and account receivable. As industrial production slowed prior to its peak in the first quarter of 1989, inventories, net accounts receivable, and commercial paper of the firms in the panel rose sharply as sales growth came to a halt.

During the recovery of 1991-1992, commercial paper fell as issuers' inventories remained flat and their net accounts receivable declined. Their data set provided support to explain the paradox between the behavior of commercial paper issuers and the macroeconomic data. They also provided evidence that this select group of firms uses commercial paper to finance increases in inventories and accounts receivable. In particular, the movements of commercial paper and bank debt may in fact reflect: (i) an increase in commercial paper to finance accounts receivable among large, high-credit quality firms acting as intermediaries for other firms, and in turn (ii) the substitution of accounts payable for bank loans among smaller "credit-constrained" firms.

Firms of high credit quality behave differently than other firms. In particular, they display excess sensitivity of inventory investment to fluctuations in cash flow, suggesting that lack of access to commercial paper markets is an indicator of costly external finance due to capital market imperfections. Consistent with this interpretation, they found that firms of high credit quality maintain much lower stocks of liquid working capital, and exhibit much less responsiveness of liquid working capital to earnings. High credit quality permits these firms to avoid excessive holdings of "buffer stocks" of liquid working capital. The combined evidence on the behavior of

inventory and liquid working capital investment indicates that the shadow costs of funds attributable to capital market imperfections appear to be much lower for high quality firms. This implies that the cost of short term funds for commercial paper issuers is more favorable than the low interest rates on paper would indicate (Calomiris et al.1995).

From a macroeconomic perspective, Commercial paper increases as a downturn begins because firms need to finance unplanned increases in inventories. Second, firms that can issue commercial paper act as intermediaries for other firms that may be credit constrained. Evidence from their study indicated that high quality firms increase their accounts receivable during a downturn and finance these with commercial paper. Finally, commercial paper issuance increases during a downturn due to an increase in aggregate portfolio demand toward safe, liquid assets (Calomiris et al.1995).

Matthias et al. (2010) conducted an empirical study to show why firms use CP and how its use is related to firms' investment policies and their capital structure decisions. This evidence indicates a causal link between CP access and investment policy and suggests that CP access led to changes in investment behaviour. They analyzed a comprehensive panel data set of all U.S.A non CP issuers since the inception of CP ratings in the early 1970s and found that firms' participation in the CP market is driven by a trade-off between funding needs for investment and the rollover risk associated with CP financing. CP borrowings are positively correlated with investment unlike other forms of debt. This suggests that CP is an important funding source for contemporaneous investment.

They concluded that CP is used as bridge financing for investment and is often refinanced in the bond market and provides a substitute for cash holdings. Firms tend to access the CP market after cash holdings have declined and increase their cash holdings when they involuntarily exit the CP market. They also show that firms choose the amount of borrowing from CP and bank lines of credit based on a trade off between rollover risk considerations and the possibility of expropriation by banks. Their results indicate that firms choose to access the CP market in anticipation of changes in investment opportunities and that CP access affects investment behaviour. CP issuers have lower investment cash flow sensitivities while they have access to the CP market than when they do not. Overall, they provided the first systematic evidence that CP is not limited to working capital financing but plays a much broader role in firms' investment policies and financing decisions. Their analysis suggested that understanding the macroeconomic

consequences of the effect of CP access on investment is a useful avenue for future research (Matthias et al.2010).

Matthias et al. (2008) proposed a new explanation for why firms issue CP and argued that firms use CP to enhance their financial flexibility. CP provides a flexible source of financing because it allows firms to borrow only if good investment opportunities or a shortage of internal cash flow arise. They tested this proposition by constructing a comprehensive panel data set of all U.S.A non CP issuers from the inception of CP ratings in 1971 to 2005.They showed that firms enter the CP market when they face increased uncertainty about their operating cash flow or investment. Moreover, after the exit from the CP market, investment and performance variability decline. They also show that CP borrowings are positively correlated with investment expenditures and negatively correlated with cash holdings, but similar relations do not hold for other corporate debt.

Their results indicate that firms choose to access the CP market in anticipation of changes in investment opportunities and that CP market access affects investment behaviour. Their analysis also raises several questions like how firms choose between alternative sources of financial flexibility, such as CP and bank credit lines. These questions represent interesting avenues for future research.

They also reported the mean and the median of the individual firms' time-series correlations. CP borrowing (as a percentage of assets) is positively correlated with investment, as suggested by the financial flexibility hypothesis. CP borrowing is negatively correlated with cash holdings. Finally, CP borrowings are positively correlated with operating cash flows, but this correlation is not statistically significant. This suggests that CP is more positively correlated with investment and more negatively correlated with cash holdings than other sources of debt. Overall, their results supported the financial flexibility hypothesis.

Kinyua (2006) conducted a study on factors hindering CP market development in Kenya. A sample of 100 companies quoted and unquoted was picked. Included here were 24 companies that have issued CP as they were deemed to have more information given that they had experienced the issuing process. The results showed that factors hindering development of CP

market in Kenya include:-Approval time by CMA and NSE, lack of information, Competition from lenders, Costs of issuance and Management lack of enthusiasm. She concluded that concerted efforts by the policy makers, NSE, CMA, stock broker's investment advisors and commercial banks will be the only solution to realize a vibrant commercial paper market in Kenya. She further recommended that further studies should be done to determine effectiveness of commercial paper in managing short term cash flows at a low cost.

Nganga (1999) conducted a study on Commercial Paper as a source of Finance for Kenyan Companies. He concluded that funds sourced from CP issuance have been mainly limited to the financing of working capital needs of firms. This was within the expectations of the research considering CP is a short term source of funds. The study also determined that there is a demand for a secondary market for CP so as to offer flexibility to both lenders and borrowers.

Njogu (2003) conducted a study on Price impacts of CP issue announcements: A case of quoted companies which have issued CP in Kenya. Her objectives being to determine whether stock prices adjust to commercial paper issues announcements and the direction of stock price adjustment. Her study was justified because of the slow development of the market in Kenya, there was need to assess investors reactions to the market so that any company considering issuing the paper can predict the reaction of investors and its impact on its share prices. The population of the study consisted of all quoted companies that have issued commercial paper from 1994 to 2001.

The findings of the study concluded that companies that have taken the bold step of substituting the commercial short-term bank loans with CP experienced some significant interest savings of between 2.85% and 13.85% with an average of 5.85% leading to an increase in the firm's net cash flow. The study also confirmed the expectation of the study that abnormal returns surrounding the commercial paper issue announcements should be significantly positive. Companies in the NSE that substituted a bank overdraft with a commercial paper experienced positive abnormal returns due to interest savings which increased the firm's net cashflows. Hence CP issue announcement is interpreted as good news by investors.

Munywoki (2000) conducted a study on Commercial paper as a short term source of finance for quoted companies and observed that company cash flows, interest on bank overdraft (OD) and Treasury bill rate (T.B) significantly affect the demand for CP and that bank OD rate has a negative relationship with demand of CP

2.4 General Literature Review.

2.4.1 Approaches in Working Capital Management.

According to Panday (2010) a firm can adopt an approach depending on the mix of short term and long term financing they use. The three approaches are:-

1. The Matching Approach.

The firm can adopt a financial plan which matches the expected life of assets with expected source of funds raised to finance assets. Stock of thirty days may be financed with a thirty day bank loan. The justification for the exact matching is that since the purpose of financing is to pay the assets, the source of financing and the asset should be relinquished simultaneously (Panday 2010).

2. Conservative Approach.

In this approach the firm depends more on long term funds for financing needs. The firm finances fixed and part of temporary current assets with long term funds. The firm therefore relies heavily on long term funds and has less risk of facing the problem of shortage of funds (Panday 2010).

3. Aggressive Approach.

This is when the firm uses more short term financing like CP than warranted by the matching plan. The firm finances part of the permanent current assets with short term financing. Some even finance a part of their fixed assets with short term financing. The relatively use of short term financing makes the firm more risky (Pandey 2010).

2.4.2 Internet based Commercial Paper Issuance.

Trauten and Langer (2007) did a survey of 54 corporate Commercial Paper (CP) issuers from eleven European countries in order to analyze the perceived benefits and obstacles of internet platforms for issuing CP in Europe. The lack of a joint initiative of large CP issuers, close relations to banks and the fact that liquidity is scattered over separate domestic CP markets were felt to be the main obstacles to the establishment of a European CP platform. Responses revealed consensus that an internet platform would increase flexibility but show divergent opinions about

the effect on other criteria. Corporate issuers expect their own issuance activity as well as the overall market volume to increase within the next five years. The establishment of an internet based issuance platform is considered to be likely.

2.5 Chapter Summary.

The literature review show that most of the studies carried out concern the developed world. There is however much consistency in the studies that Commercial paper financing is primarily used to finance short term investments. Further the local studies have not adequately addressed any relationship between Commercial Paper Financing and any other variable apart from Njogu's paper in 2003.Further these studies have not incorporated the missing link where CP is viewed to be primarily used to finance working capital needs of firms specifically inventories and accounts receivable and also used as a bridge to long term Investment options.

This study therefore seeks to bridge this gap in literature by using secondary data to show the relationship between commercial paper financing as a short term source of finance and the main components of working capital. The researcher's intention is to study the relationship in an effort to filling this gap in knowledge in the commercial paper market in Kenya.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, population, sampling design, the data collection method, research procedures and data analysis methods that will be used in the course of the research. This section also indicates the research tools that will be employed to collect data and carrying out the data analysis.

3.2 Research Design

The main purpose of this research is to determine the relationship between commercial paper financing and components of working capital in firms that have issued CP in Kenya. The design used for the study was therefore causal research design. A causal research was conducted to identify the cause and effect relationships among variables when the research problem has been narrowly defined. It explains the effect of one variable on another and has the potential to illustrate how a change in one variable causes some predictable change in another variable. The design is accurate and possesses the aspect of comparison of data over a long period of time and involves investigation of what causes the other among different variables.The method was selected as it will enable the researcher meet the objectives of the study.

The design was also used by Calomiris et al, (1995) to show the cause and effect relationship between commercial paper and liquid working capital around business cycle peaks. Matthias et al. (2010) helped shed light on the direction of causality in the relationship between CP access and investment behavior.

3.3 Population of the study

According to Cooper and Schindler (2003) a population is the subject such as a person, organization, customer database or amount of quantitative data on which measurement is being taken. The population of the study was all companies that have issued CP. According to the CMA annual reports and CBK statistics, there are 27 companies that have issued CP since the first issue in 1994(Appendix 1).

3.4 Sample selection

Given the low number of companies that have issued CP, with some companies entering the market only once, twenty two companies that have been in the market for at least two years were used to conduct the study (Appendix 11).Thirteen of these firms are listed at the NSE hence their financial statements were readily available and reliable (Appendix 1).Financial statements of the remaining companies were obtained from the financial managers of these companies.

3.5 Data Collection.

The data collected was quantitative. The research study used secondary sources of data which helped the researcher measure both aspects of the variables. Secondary data involves the collection and analysis of published material and information from other sources like annual reports and published data. According to Saunders, Lewis and Thornhill (1997) one of the advantages of using secondary data was the enormous savings in resources especially researchers time and money. Commercial paper outstanding amounts and components of working capital that are assets were extracted from the balance sheet of the audited financial statements of all firms that have issued CP. The period of data collection was based on the number of years the company has been in the market. Only companies that have been in the market for one year only were excluded from the study,

The specific data collected in each of the firms for the analysis of the independent variable was data on working capital components that are assets i.e. inventories, trade and other receivables and cash balance. This aided in performing regressions to show their movements when the firm has a CP program.

Data on other financing aspects was collected including total debt/borrowings from the balance sheet of these firms. All these data assisted to show the breakdown of financing of current assets into long term financing and short term financing.

3.6 Data analysis

To determine the relationship between CP financing and components of working capital that are assets in these firms, the data was analyzed through the use of simple and multiple regression analysis. Correlation analysis was used to access the strength of the relationship between the independent and dependent variable.

3.6.1 Variables and Variable Measurement

The data collection procedure was achieved by developing a similar framework used by Weinraub et al. (1998), Afza and Nazir (2004), Raheman and Nasr (2007). The following data was used to come up with the required variables. The commercial paper outstanding at the end of each year; Trade and other receivables; Inventories; and Cash at bank and in hand.

Dependent variables

The dependent variable was CP outstanding amounts as at the end of their financial year in all the companies denoted as CP_{it}.

Independent variables

The independent variables were inventory (INV), trade and other receivables (ACCREC), Cash holding (CASH). Working capital is computed by subtracting current liabilities from current assets.

The variables were arrived at by looking at the amount of current assets that a business has left after all the liabilities have been subtracted. Since there is no ideal working capital requirement that is universally applicable to all firms, the selected variables were based on the liquid assets that are common in any trading organization as they need to hold inventory, give credit to customers and hold liquid cash to meet recurrent expenditures.

3.6.2 Quantitative Analysis

Quantitative analysis was applied in the study. Simple and multiple linear regression analysis that estimates the causal relationships between CP and the chosen variables.

Statistical Package for Social Sciences (SPSS) version 11 software was used for analysis of the different variables in the study. The package helped in organizing and summarizing data by use of descriptive statistics like tables. Data presentation was done through graphs, percentages and frequency tables to ensure that gathered information is clearly understood.

The study adopted a model similar to the one used by Calomiris et al,.(1995) where they did separate regressions on CP as a proportion of total debt and components of working capital – Inventory (INV),accounts receivable (ACCREC) and CASH as shown below:-

$CP_{it} = \beta_o + \beta_2 INV$

$CP_{it} = \beta_o + \beta_3 ACCREC$

$CP_{it} = \beta_o + \beta_3 CASH$

Separate regressions were not done as in Calomiris et.,al (1995) but instead the independent variables were combined and the regeression equation below was used to analyse the relationship between commercial paper financing and the components of working capital of the firms.

$CP_{it} = \beta_o + \beta_1 INV + \beta_2 ACCREC + \beta_3 CASH + \varepsilon$

Where:-

CPit = Commercial Paper outstanding of a firm at time t for i=1, 2…….22 firms

$\beta_{o,}$ = The intercepts of equation. Estimated value of CP when all the other variables are zero

$\beta_{1,}$ $\beta_{2,}$ and $\beta_{3,}$ = Coefficients of variables. Change in estimated value of CP.

t: = Time = 1, 2, ……, 3 years.

ε: = The error term

Commercial paper outstanding (CPit) is net balance of CP at the end of each financial year the sampled firms have been in the market.

β_o is a constant that represents the unit change in CP outstanding when there is no change in the independent variables – Inventory, accounts receivable and cash.

$\beta_{1,}$ $\beta_{2,}$ and β_3 shows by how much CP will vary with a unit change in inventory, accounts receivable and cash respectively.

Inventory is the largest current asset of a business and its can be measured through perpetual or periodic inventory systems. For this study, the inventory balance at the end of the financial year in the sampled firms was used in the model.

Accounts receivable is reported as a current asset and is considered part of an organization's working capital. A number of methods are used to measure accounts-receivable balances and the effectiveness of collection policies and procedures. Some of the more frequently used methods to

analyze accounts receivable and collections include: AR at Year End as a Percentage of Total Sales, Average Collection Period, AR Aging Schedule. For this study the AR balance at the end of the financial year in the sampled firms was used in the model.

Cash is considered to be the most liquid current asset and is also considered to be part of the organization working capital. The bottom line of a cash flow statement reveals how much money (as in real cash) a company has on hand to successfully run its operations, cover its liabilities and expand and this is the cash balance used in the study from the balance sheet portion of the financial statements of the sampled firms.

Diagnostic tests done are as listed below:-

1) Coefficient of determination (R square) – Its used to measure how well the regression equation fits the data or the proportion of variability in a data set that is accounted for by a statistical model. It's the sum of squares explained by the model i.e. Regression sum of squares /Total sum of squares. It helps to decide whether the line obtained will be useful for estimation and prediction. The value ranges from 0 to 1.The better the fit the closer the sum of squares explained by the model is to 1.

2) F statistic – It will be used to test whether there is a linear relationship between the predictor and response variables taken together i.e. to test if the regression model fits well.

3) T test – It's used when the population sample size is small and population standard deviation is unknown. This test will help determine whether any predictor variable have any influence on the response variable over and above the other predictor variables. It's a more accurate test as it has a wider spread.

4) Analysis of Variance (ANOVA) – It's used to measure the variability of the independent variables and hence show whether the model accounts for most of the variation on the dependent variable.

CHAPTER FOUR

4.0. DATA ANALYSIS AND FINDINGS

4.1. Introduction

This section represents the data presentation, analysis and findings of the study. The chapter commences with descriptive statistics which gives the exploration of the variables used in the analysis. Descriptive statistics, correlation and regression analysis were used to assess the relationship between commercial paper financing and components of working capital that are assets in each of the sampled 22 firms. These enabled the researcher make an overall conclusion on the relationship between CP financing and components of working capital in Kenya.

4.2 Data Presentation

4.2.1. Regression results for Davis and Shirtliff Limited.

Table 4. 1: Model Summary, ANOVA, Regression results of Davis and Shirtliff Limited

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	.0	3	70	.0

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	201.041	3	67.014	.0	0.0[a]
	Residual	.000	70	.000		
	Total	201.041	73			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	-.833	.000		.0	.0
	Inventory	.500	.000	.394	.0	.0
	Trade and other receivables	-3.802E-15	.000	.000	.0	.0
	Cash at bank and in hand	.833	.000	.663	.0	.0

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.1, the study explains 100% variations in commercial papers issued at Davis and Shirtliff Ltd. This means that commercial papers issued at Davis and Shirtliff Ltd wholly relied on the size of the inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a strong relationship between CP and these components at Davis and Shirtliff Ltd.

The regression equation for Davis and Shirtliff Ltd is thus:-

$$\mathbf{CP_{i4} = -0.833 + 0.500\ INV + (-3.802E\text{-}15)\ ACCREC + 0.833CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of Davis and Shirtliff Ltd at time t=4, will be -0.833. A unit increase in inventory will lead to a 0.500 change in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a (-3.802E-15) change in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.833 increase in Commercial Paper outstanding of Davis and Shirtliff Ltd at time t=4. This therefore means that for Davis and Shirtliff, the most significant variable affecting CPit is Cash at bank and in hand followed by inventory.

4.2.2 Regression results for TPS Serena

Table 4. 2: Model Summary, ANOVA, Regression results of TPS Serena

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.593[a]	.352	-.296	.60858	.352	.543	3	3	.686

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	.603	3	.201	.543	.686[a]
	Residual	1.111	3	.370		
	Total	1.714	6			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	.333	1.291		.258	.813
	Inventory	.000	.430	.000	.000	1.000
	Trade and other receivables	-.111	.227	-.236	-.490	.658
	Cash at bank and in hand	.667	.680	.609	.980	.399

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.2 the study explains 35.2% of commercial papers outstanding at TPS Serena. This means that 64.8% commercial papers outstanding at TPS Serena are explained by other factors other than, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a weak relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at TPS Serena Ltd.

The regression equation for TPS Serena Ltd is thus:-

$$\mathbf{CP_{i7} = 0.333 + 0.000\ INV - 0.111ACCREC + .667CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of TPS Serena Ltd at time t=7, will be 0.333. A unit increase in inventory will lead to a 0.000

change in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a 0.111decrease in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.667 increase in Commercial Paper outstanding of TPS Serena Ltd at time t=7. This therefore means that the most significant variable affecting CPit is Cash at bank and in hand followed by trade and other receivables.

4.2.3 Regression results for Crown Berger Ltd

Table 4. 3: Model Summary, ANOVA, Regression results of Crown Berger.

Model	R	R Squared	Adjusted R Square	Std. Error of the Estimate
1	.624[a]	.390	.161	.47835

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	1.169	3	.390	1.704	.243[a]
	Residual	1.831	8	.229		
	Total	3.000	11			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	1.079	1.298		.831	.430
	Inventory	.396	.324	.506	1.219	.257
	Trade and other receivables	.080	.191	.202	.422	.684
	Cash at bank and in hand	-.268	.271	-.368	-.991	.351

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding.

From the tables 4.3 the study explains 39% of commercial papers outstanding at Crown Berger Ltd. This means that 61% commercial papers outstanding at Crown Berger are explained by other factors other than, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a weak relationship between CP and the WC components at Crown Berger Ltd.

The regression equation for Crown Berger Ltd is thus:-

$$CP_{i12} = 1.079 + 0.396INV + 0.080ACCREC - 0.268CASH + \varepsilon$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of Crown Berger Ltd at time t=12, is 1.079. A unit increase in inventory will lead to a 0.396 increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a 0.080 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.268 decrease in Commercial Paper outstanding of Crown Berger Ltd at time t=12. This therefore means that the most significant variable affecting CPit is Inventory, followed by Cash at bank and in hand.

4.2.4 Regression results for CMC Holdings Ltd

Table 4. 4: Model Summary, ANOVA, Regression results of CMC.

Model	R	R Squared	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.204	0.042	-0.318	1.65694	0.042	0.116	3	8	0.948

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	0.953	3	0.318	0.116	0.948
	Residual	21.964	8	2.745		
	Total	22.917	11			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	3.018	1.521		1.985	0.082
	Inventory	0.464	1.939	0.444	0.239	0.817
	Trade and other receivables	0.141	0.461	0.153	0.306	0.767
	Cash at bank and in hand	-0.695	1.912	-0.632	-0.364	0.726

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.4, the study explains 4.2% of commercial papers outstanding at CMC Holdings. This means that 95.8% commercial papers outstanding at CMC Holdings are explained by other factors other than, Inventory, trade and other receivables and cash at bank and in hand

respectively. This indicates that there is a very weak relationship between CP and WC components at CMC Holdings Ltd.

The regression equation for CMC Holdings Ltd is thus:-

$$\mathbf{CP_{i12} = 3.018 + 0.464NV + 0.141ACCREC - 0.695CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of CMC Holdings Ltd at time t=12, is 3.018. A unit increase in inventory will lead to a 0.464 increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a 0.141 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.695 decrease in Commercial Paper outstanding of CMC Holdings Ltd at time t=12. This therefore means that the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.5 Regression results for KenolKobil Ltd.

Table 4. 5: Model Summary, ANOVA, Regression results of KenolKobil Ltd

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	.0	3	4	.0

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	21.500	3	7.167	.0	.0[a]
	Residual	.000	4	.000		
	Total	21.500	7			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
Coefficients	(Constant)	-.833	1.890		.0	.0
	Inventory	.500	.124	.396	.0	.0
	Trade and other receivables	.000	.001	.000	.0	.0
	Cash at bank and in hand	-.833	.034	.660	.0	.0

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.5, the study explains 100% of commercial papers outstanding at KenolKobil. This means that commercial papers outstanding at KenolKobil Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at KenolKobil Ltd.

The regression equation for KenolKobil Ltd is thus:-

$$\mathbf{CP_{i11} = 0.833 + 0.500INV + 0.000ACCREC - 0.833CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of KenolKobil Ltd at time t=11, will be -0.833. A unit increase in inventory will lead to a 0.500 increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to no change in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.833 decrease in Commercial Paper outstanding of KenolKobil Ltd at time t=11. This therefore means that for KenolKobil, the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.6 Regression results for Athi River Mining Ltd

Table 4. 6: Model Summary, ANOVA, Regression results of Athi River Mining

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	1.000	.00000

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.500	3	9.500	.0	.0[a]
	Residual	.000	6	.000		
	Total	28.500	9			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.746	.000		-12576761.001	.000
	Inventory	0.466	.000	.380	76003605.037	.000
	Trade and other receivables	.000	.000	.000	.000	1.000
	Cash at bank and in hand	.955	.000	.679	143633312.623	.000

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.6, the study explains 100% of commercial papers outstanding at Athi River Mining Ltd. This means that commercial papers outstanding at Athi River Mining Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at Athi River Mining Ltd.

The regression equation for Athi River Mining Ltd is thus:-

$$\mathbf{CP_{i8} = 0.746 + 0.466INV + 0.000ACCREC - 0.955CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of Athi River Mining Ltd at time t=8, is 0.746. A unit increase in inventory will lead to a 0.500 increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to nil change in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.955 decrease in Commercial Paper outstanding of Athi River Mining Ltd at time t=8. This therefore means that for Athi River Mining Ltd, the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.7 Regression results for Nation Media Ltd

Table 4. 7: Model Summary, ANOVA, Regression results of Nation media

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.702[a]	.493	.469	.5681	1	0	1	0	0

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	26.958	1	6.739	20.880	.000[a]
	Residual	27.758	0	.323		
	Total	54.716	1			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	1.502	.087	.202	1.897	.061
	Inventory	.164	.083	.362	3.552	.001
	Trade and other receivables	.293	.036	.094	1.021	.310
	Cash at bank and in hand	-.037	.040	.229	2.647	.010

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.7, the study explains 49.3% of variations in commercial papers outstanding at Nation Media. This means that 50.7% of variations in commercial papers outstanding at Nation Media Ltd can only be explained by factors outside this study. This indicates that there is a relatively strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Nation Media Ltd.

The regression equation for Nation Media Ltd is thus:-

$$\mathbf{CP_{i2} = 1.502 + .164INV + .293ACCREC - .037CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Nation Media Ltd at time t=2, is 1.502. A unit increase in inventory will lead to a 0.164 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0. 293 increase in Commercial Paper outstanding while a unit increase in Cash at bank

and in hand will lead to a 0.037 decrease in Commercial Papers outstanding at time t=2. This therefore means that for Nation Media, the most significant variable affecting CPit is trade and other receivables followed by Inventory.

4.2.8 Regression results for Total Kenya Ltd

Table 4. 8: Model Summary, ANOVA, Regression results of Total Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000	1.000	1.000	.	1.000	.	1	0	.

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	2.000	1	2.000	.	.(a)
	Residual	0.000	0	.		
	Total	2.000	1			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	9.000	.202		.831	.430
	Inventory	-2.000	.362	-1.000	1.219	.257
	Trade and other receivables	0.000	.094	0.000	.422	.684
	Cash at bank and in hand	0.000	.229	0.000	-.991	.351

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.8, the study explains 100% of commercial papers outstanding at Total Kenya. This means that commercial papers outstanding at Total Kenya Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Total Kenya Ltd.

The regression equation for Total Kenya Ltd is thus:-

$$\mathbf{CP_{i2} = 9 - 2INV + 0.000ACCREC + 0.000CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Total Kenya Ltd at time t=2, is 9. A unit increase in Inventory will lead to a double increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to no change in Commercial Paper outstanding, same applies to cash. This therefore means that for Total Kenya, the most significant variable affecting CPit is inventory.

4.2.9 Regression results for Express Kenya Ltd

Table 4. 9: Model Summary, ANOVA, Regression results of Express Kenya Ltd

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.897[a]	.880	.133	.3195

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
	Regression	11.534	5	2.878	52.400	.0073
	Residual	186.555	27	2.129		
	Total	198.089	32			
		Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
Coefficients		**B**	**Std. Error**	**Beta**		
	(Constant)	3.657	1.033		0.787	0.255
	Inventory	1.654	0.107	0.159	1.091	0.002
	Trade and other receivables	0.988	0.139	0.085	0.687	0.005
	Cash at bank and in hand	-0.568	0.097	0.145	0.97	0.013

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.9, the study explains 89.7% of variations in commercial papers outstanding at Express Kenya Ltd. This means that 11.3% of variations in commercial papers outstanding at Express Kenya Ltd is explained by other factors other than, Inventory, trade and other

receivables and cash at bank and in hand. However, there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Express Kenya Ltd.

The regression equation for Express Kenya Ltd is thus:-

CP_{i2} = 3.657+1.654INV + 0.988ACCREC- 0.568CASH + ε

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Express Kenya Ltd at time t=2, is 3.657. A unit increase in Inventory will lead to a 1.654I increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0.988 change in Commercial Paper outstanding, and a unit increase in cash will lead to a 0.568 change in Commercial Paper outstanding. This therefore means that for Express Kenya Ltd, the most significant variable affecting CPit is inventory.

4.2.10 Regression results for Kenya Power Ltd

Table 4. 10: Model Summary, ANOVA, Regression results of Kenya Power Ltd

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.64	0.41	0.	.00000	1.000	.	3	3	.

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	26.958	1	6.739	20.880	.000[a]
	Residual	27.758	0	.323		
	Total	54.716	1			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	0.836	.000		61.001	.000
	Inventory	.000	.000	.000	5.037	6.23
	Trade and other receivables	.000	.000	.000	5.000	56.3
	Cash at bank and in hand	-1.345	.033	.710	7.98	.002

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.10, the study explains 64% of commercial papers outstanding at Kenya Power Ltd. This means that 36% of variations in commercial papers outstanding at Kenya Power Ltd is explained by other factors other than, Inventory, trade and other receivables and cash at bank and in hand. However, there is a very strong relationship between CP and cash at bank and in hand at Kenya Power Ltd.

The regression equation for Kenya Power Ltd is thus:-

CP_{i10} = 0.836+ .000INV + .000ACCREC - 1.345CASH + ε

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Kenya Power Ltd at time t=2, will be 0.836. a unit increase in inventory will lead to no change in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to no change in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a -1.345 decrease in Commercial Papers outstanding of Kenya Power Ltd at time t=2. This therefore means that the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.11 Regression results for ECTA Kenya ltd

Table 4. 11: Model Summary, ANOVA, Regression results of ECTA Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	1.000	.00000

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	28.500	3	9.500	.	.[a]
	Residual	.000	6	.000		
	Total	28.500	9			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	4.783	.000		61.001	.000
	Inventory	.204	.000	.380	5.037	.000

	Trade and other receivables	.164	.000	.000	5.000	1.000
	Cash at bank and in hand	.745	.000	.679	12.623	.000

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.11, the study explains 100% of commercial papers outstanding at ECTA Kenya. This means that commercial papers outstanding at ECTA Kenya Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at ECTA Kenya Ltd.

The regression equation for ECTA Kenya Ltd is thus:-

CP_{i10} = 4.783+ 0. 204INV + 0.164ACCREC- 0.745CASH + ε

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of ECTA Kenya Ltd at time t=10, will be 4.783. A unit increase in inventory will lead to a 0. 204 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0.164 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.745 increase in Commercial Papers outstanding of ECTA Kenya Ltd at time t=10. This therefore means that the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.12 Regression results for Cooper Kenya Ltd

Table 4. 12: Model Summary, ANOVA, Regression results of Cooper Kenya.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	.	3	3	.

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	17.714	3	5.905	.	.[a]
	Residual	.000	3	.000		
	Total	17.714	6			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	3.454	.000		61.001	.000
	Inventory	.213	.000	.365	5.037	.000
	Trade and other receivables	.362	.000	.000	5.000	1.000
	Cash at bank and in hand	-.977	.000	.710	12.623	.000

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.12, the study explains 100% of commercial papers outstanding at Cooper Kenya. This means that commercial papers outstanding at Cooper Kenya Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at Cooper Kenya Ltd.

a. Dependent Variable: CP Outstanding

The regression equation for Cooper Kenya Ltd is thus:-

$$\mathbf{CP_{i7} = 3.454 + 0.213INV + 0.362ACCREC - 0.977CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Cooper Kenya Ltd at time t=7, is 3.454. A unit increase in inventory will lead to a 0. 213 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0.362 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.977 decrease in Commercial Papers outstanding of Cooper Kenya Ltd at time t=7. This therefore means that for Cooper Kenya, the most significant variable affecting CPit is Cash at bank and in hand, followed by trade and other receivables.

4.2.13 Regression results for Mabati Rolling Mills Ltd

Table 4. 13: Model Summary, ANOVA, Regression results of Mabati Rolling Mills Ltd

Model	R	R Squared	Adjusted R Square	Std. Error of the Estimate
1	1.000	1.000	.161	.47835

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	1.169	2	.390	1.704	.243[a]
	Residual	1.219	1	.229		
	Total	3.000	3			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	3.896	1.298		.831	.430
	Inventory	0.463	.324	.506	.987	.257
	Trade and other receivables	1.831	.191	.202	.422	.035
	Cash at bank and in hand	-0.845	.271	-.368	-.991	.351

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.13, the study explains 100% of commercial papers outstanding at Mabati Rolling Mills Ltd. This means that commercial papers outstanding at Mabati Rolling Mills Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Mabati Rolling Mills Ltd.

The regression equation for Mabati Rolling Mills Ltd was thus:-

$$\mathbf{CP_{i3} = 3.896 + 0.463INV + 1.831ACCREC - 0.845CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Mabati Rolling Mills Ltd at time t=3, will be 3.896; a unit increase in inventory will lead to a 0.453 increase in Commercial Papers outstanding; a unit increase in trade and other receivables

will lead to a 1.831 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.845 decrease in Commercial Papers outstanding of Kenya Shell Ltd at time t=3. This therefore means that for Mabati Rolling Mills Ltd, the most significant variable affecting CPit is trade and other receivables followed by Cash at bank and in hand.

4.2.14 Regression results for Kenya Shell Ltd

Table 4. 14: Model Summary, ANOVA, Regression results of Kenya Shell

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000	1.000	1.000	0.00000	1.000	.	1	1	.

Model		Sum of Squares	Df	Mean Square	F	Sig.
ANOVA	Regression	6.000	1	6.000	.	.(a)
	Residual	0.000	1	0.000		
	Total	6.000	2			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	3.888	0.306		1.985	0.082
	Trade and other receivables	0.453	-0.364	-1.000	0.239	0.817
	Inventory	0.258	0.000	0.000	0.306	0.767
	Cash at bank and in hand	0.966	0.239	0.000	-0.364	0.726

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.14, the study explains 100% of commercial papers outstanding at Kenya Shell. This means that commercial papers outstanding at Kenya Shell Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Kenya Shell Ltd.

The regression equation for Kenya Shell Ltd was thus:-

$$CP_{i3} = 3.888 + 0.453INV + 0.258ACCREC + 0.966CASH + \varepsilon$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Kenya Shell Ltd at time t=3, will be 3.888; a unit increase in inventory will lead to a 0.453 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0.258 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.966 increase in Commercial Papers outstanding of Kenya Shell Ltd at time t=3. This therefore means that for Kenya Shell, the most significant variable affecting CPit is Cash at bank and in hand followed by Inventory.

4.2.15 Regression results for Synergy Industrial Ltd

Table 4. 15: Model Summary, ANOVA, Regression results of Synergy Industrial Ltd

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1	0.657a)	0.423	0.866	3.3333	0.0027	0.0027	1	1

Model		Sum of Squares	Df	Mean Square	F	Sig.
ANOVA	Regression	22.900	3	7.633	.	.[a]
	Residual	.000	6	.000		
	Total	22.900	9			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	1.584	3.111		1.825	.00012
	Inventory	0.0495	.058	.099	.096	.005
	Trade and other receivables	0.2050	.045	.099	.093	.004
	Cash at bank and in hand	0.3660	.499	.095	.095	.007

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.15, the study explains 65.7% of commercial papers outstanding at Synergy Industrial. This means that other factors not studied in this research project contribute to 34.3% of variation in CP at Synergy Industrial limited, and should hence be studied. This indicates that there is a very strong relationship between CP and WC components at Synergy Industrial Ltd. The regression equation for Synergy Industrial Ltd is thus:-

$$\mathbf{CP_{i4} = 1.584 + 0.0495INV + 0.2050ACCREC + 0.3660CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Synergy Industrial Ltd at time t=3, is 1.584. A unit increase in inventory will lead to a 0.0495 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to 0.2050 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.3660 increase in Commercial Papers outstanding of Synergy Industrial Ltd at time t=4. This therefore means that for Synergy Industrial, the most significant variable affecting CPit is Cash at bank and in hand, followed by accounts receivable.

4.2.16 Regression results for Kenya Hotel Properties Ltd

Table 4. 16: Model Summary, ANOVA, Regression results of Kenya Hotel Properties.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	0	3	6	.000

Model		Sum of Squares	Df	Mean Square	F	Sig.
ANOVA	Regression	22.900	3	7.633	.	.[a]
	Residual	.000	6	.000		
	Total	22.900	9			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	0.744	.000		.506	.000
	Inventory	.500	.344	.413	.202	.000
	Trade and other receivables	.083	.859	.000	-.368	1.000
	Cash at bank and in hand	.749	.534	.661	.506	.000

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.16, the study explains 100% of commercial papers outstanding at Kenya Hotel Properties. This means that commercial papers outstanding at Kenya Hotel Properties Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Kenya Hotel Properties Ltd. The regression equation for Kenya hotel properties Ltd is thus:-

$$\mathbf{CP_{i10} = 0.744 + 0.500INV + 0.083ACCREC - + 0.749CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Kenya Hotel Properties Ltd at time t=10, is -0.744. A unit increase in inventory will lead to a 0.500 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to 0.083 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.749 increase in Commercial Papers outstanding of Kenya Hotel Properties Ltd at time t=10. This therefore means that for Kenya Hotel Properties, the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.17 Regression results for East Africa industries (EAI) Ltd

Table 4. 17: Model Summary, ANOVA, Regression results of EAI

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	0	3	6	.000

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	10.750	3	3.583	.	.[a]
	Residual	.000	0	.		
	Total	10.750	3			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	3.246	.000		.506	.000
	Inventory	.500	.344	.413	.202	.000
	Trade and other receivables	.647	.859	.000	-.368	1.000
	Cash at bank and in hand	.749	.534	.661	.506	.000

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.17, the study explains 100% of commercial papers outstanding at EAI (Unilever). This means that commercial papers outstanding at EAI (Unilever) are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at EAI (Unilever) Ltd.

The regression equation for EAI (Unilever) Ltd was thus:-

$$\mathbf{CP_{i4} = 3.246 + 0.500INV + .647ACCREC + .749CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of EAI (Unilever) Ltd at time t=4, will be 3.246. A unit increase in inventory will lead to a .500

increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a .647 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a .749 increase in Commercial Papers outstanding of EAI (Unilever) Ltd at time t=4. This therefore means that for EAI (Unilever), the most significant variable affecting CPit is Cash at bank and in hand, followed by trade and other receivables.

4.2.18 Regression results for Pan Paper Mills Ltd

Table 4. 18: Model Summary, ANOVA, Regression results of Pan Paper Mills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	0	3	6	.000

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	10.750	3	3.583	.	.[a]
	Residual	.000	0	.		
	Total	10.750	3			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
Coefficients	(Constant)	1.035	.000		1.985	0.082
	Inventory	.523	.000	.396	0.239	0.817
	Trade and other receivables	.102	.000	.000	0.306	0.767
	Cash at bank and in hand	-.953	.000	.660	-0.364	0.726

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.18, the study explains 100% of commercial papers outstanding at Pan Paper Mills. This means that commercial papers outstanding at Pan Paper Mills Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and inventory, CP and trade and receivables and CP and cash at bank and in hand at Pan Paper Mills Ltd.

The regression equation for Pan Paper Mills Ltd is thus:-

CP_{i4} = 1.035+ 0. 523INV + 0.102ACCREC - 0.953CASH + ε

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Pan Paper Mills Ltd at time t=4, will be 1.035. A unit increase in inventory will lead to a 0. 0. 523 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a 0.102 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 0.953 decrease in Commercial Papers outstanding of Pan Paper Mills Ltd at time t=4. This therefore means that for Pan Paper Mills, the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.19 Regression results for General Motors Ltd

Table 4. 19: Model Summary, ANOVA, Regression results of General Motors Ltd.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	.	.	1.000	.	2	0	.

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	8.667	2	4.333	.	.[a]
	Residual	.000	0	.		
	Total	8.667	2			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	2.935	.000		.000	.000
	Inventory	.209	.356	.367	.000	.000
	Trade and other receivables	.100	.222	.693	.000	0,760
1	Cash at bank and in hand	.975	.056	.000.	.000	0,762

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.19, the study explains 100% of commercial papers outstanding at General Motors. This means that commercial papers outstanding at General Motors are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC at General Motors Ltd.

The regression equation for General Motors Ltd was thus:-

$$\mathbf{CP_{i4} = 2.935 + .209INV + .100ACCREC + .975CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of General Motors Ltd at time t=3, will be 2.935. A unit increase in inventory will lead to a .209 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a .100 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a .975 increase in Commercial Papers outstanding of General Motors Ltd at time t=3. This therefore means that for General Motors, the most significant variable affecting CPit is Cash at bank and in hand, followed by inventory.

4.2.20 Regression results for Caltex Oil Ltd

Table 4. 20: Model Summary, ANOVA, Regression results of Caltex Oil

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	.	.

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	10.667	2	5.333	.	.[a]
	Residual	.000	0	.		
	Total	10.667	2			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
Coefficients	(Constant)	4.364	.000		4.765	1.985
	Trade and other receivables	.765	6.765	7.765	3.76	0.239
	Inventory	.765	3.76	0,761	3.00	0.306
	Cash at bank and in hand	-.648	2.648	3.648	3.76	-0.364

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.20, the study explains 100% of commercial papers outstanding at Caltex Oil. This means that commercial papers outstanding at Caltex Oil Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at Caltex Oil Ltd.

The regression equation for Caltex Oil Ltd was thus:-

$$\mathbf{CP_{i3} = 4.364 + .765INV + .765ACCREC - .648CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Papers outstanding of Caltex Oil Ltd at time t=3, will be 4.364. A unit increase in inventory will lead to a .765 increase in Commercial Papers outstanding; a unit increase in trade and other receivables will lead to a .765 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a .648 decrease in Commercial Papers outstanding of Caltex Oil Ltd at time t=3. This therefore means that for Caltex Oil, the most significant variables affecting CPit are trade and other receivables and inventory.

4.2.21 Regression results for Industrial Promotion Services (IPS) Ltd

Table 4. 21: Model Summary, ANOVA, Regression results of Industrial Promotion Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	0	3	6	.000

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	9.777	1	3.635	.	.[a]
	Residual	8.099	1	.		
	Total	3.465	2			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	2.212	.000		.506	.000
	Inventory	1.000	.344	.413	.202	.001
	Trade and other receivables	.356	.859	.000	-.368	.006
	Cash at bank and in hand	-.963	.534	.661	.506	.003

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.21, the study explains 100% of commercial papers outstanding at Industrial Promotion Services (IPS) Ltd. This means that commercial papers outstanding at Industrial Promotion Services (IPS) Ltd are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at Industrial Promotion Services (IPS) Ltd.

The regression equation for Industrial Promotion Services (IPS) Ltd was thus:-

$$\mathbf{CP_{i2} = 2.212 + 1.000INV + .356ACCREC - .963CASH + \varepsilon}$$

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of Industrial Promotion Services (IPS) Ltd at time t=2, will be 2.212. A unit increase in inventory will lead to a unit increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a 0.356 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a .963 decrease in Commercial Paper outstanding of Industrial Promotion Services (IPS) Ltd at time t=2. This therefore means that, the most significant variable affecting CPit is inventory, followed by trade and other receivables.

4.2.22 Regression results for Agip Kenya Ltd

Table 4. 22; Model Summary, ANOVA, Regression results of Agip Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00000	1.000	.0	3	4	.0

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	23.2	3	7.167	.0	.0[a]
	Residual	.000	4	.000		
	Total	21.500	7			

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	0.322	1.890		.0	.0
	Inventory	0.265	.124	.396	.0	.0
	Trade and other receivables	0.980	.001	.000	.0	.0
	Cash at bank and in hand	1.132	.034	.660	.0	.0

a. Predictors: (Constant), Cash at bank and in hand, Trade and other receivables, Inventory

b. Dependent Variable: CP Outstanding

From table 4.22, the study explains 100% of commercial papers outstanding at Agip Kenya. This means that commercial papers outstanding at Agip Kenya are wholly explained by, Inventory, trade and other receivables and cash at bank and in hand respectively. This indicates that there is a very strong relationship between CP and WC components at Agip Kenya.

The regression equation for Agip Kenya was thus:-

CP_{i2} = 0.322+ 0.265INV +.980ACCREC +1.132CASH + ε

This therefore means that, holding all other factors constant, the Commercial Paper outstanding of AGIP Kenya at time t=2, will be 0.322. A unit increase in inventory will lead to a 0.265 increase in Commercial Paper outstanding; a unit increase in trade and other receivables will lead to a 0.980 increase in Commercial Paper outstanding while a unit increase in Cash at bank and in hand will lead to a 1.132 increase in Commercial Paper outstanding of Agip Kenya at time t=2. This therefore means that, the most significant variable affecting CPit is Cash at bank and in hand, followed by trade and other receivables.

Table 4. 23; Summary of Regression Results.

	COMPANIES	INV.	Interpretation	ACCREC.	Interpretation	CASH.	Interpretation
1	K P L C	0	Unit increase in Inventory leads to no change in CP.	0	Unit increase in debtors leads to no change in CP.	-1.345	Unit increase in cash leads to a 1.345 decrease in CP.
2	Cooper Kenya limited.	0.21	Unit increase in inventory leads to a 0.21 increase in CP.	0.362	Unit increase in debtors leads to a 0.362 increase in CP.	-0.977	Unit increase in cash leads to a 0.977 decrease in CP.
3	IPS	1	Unit increase in inventory leads to a single increase in CP.	0.356	Unit increase in debtors leads to a 0.356 increase in CP.	-0.963	Unit increase in cash leads to a 0.963 decrease in CP.
4	Athi River Mining	0.47	Unit increase in inventory leads to a 0.47 increase in CP.	0	Unit increase in debtors leads to no change in CP.	-0.955	Unit increase in cash leads to a 0.955 decrease in CP.
5	Pan Africa Paper Mills.	0.52	Unit increase in inventory leads to a 0.52 increase in CP.	0.102	Unit increase in debtors leads to a 0.102 increase in CP.	-0.953	Unit increase in cash leads to a 0.953 decrease in CP.
6	Mabati Rolling Mills.	0.46	Unit increase in inventory leads to a 0.46 increase in CP.	1.831	Unit increase in debtors leads to a 1.831 increase in CP.	-0.845	Unit increase in cash leads to a 0.845 decrease in CP.

7	Kenya Oil Company.	0.5	Unit increase in inventory leads to a 0.5 increase in CP.	0	Unit increase in debtors leads to no change in CP.	-0.833	Unit increase in cash leads to a 0.833 decrease in CP.
8	Ecta Kenya.	0.2	Unit increase in inventory leads to a 0.2 increase in CP.	0.164	Unit increase in debtors leads to a 0.164 increase in CP.	-0.745	Unit increase in cash leads to a 0.745 decrease in CP.
9	CMC holdings	0.46	Unit increase in inventory leads to a 0.46 increase in CP.	0.141	Unit increase in debtors leads to a 0.141 increase in CP.	-0.695	Unit increase in cash leads to a 0.695 decrease in CP.
10	Caltex Oil.	0.77	Unit increase in inventory leads to a 0.77 increase in CP.	0.765	Unit increase in debtors leads to a 0.765 increase in CP.	-0.648	Unit increase in cash leads to a 0.648 decrease in CP.
11	Express Kenya.	1.65	Unit increase in debtors leads to a 0.362 increase in CP.	0.988	Unit increase in debtors leads to a 0.988 increase in CP.	-0.568	Unit increase in cash leads to a 0.568 decrease in CP.
12	Crown Berger Limited.	0.4	Unit increase in inventory leads to a 0.4 increase in CP.	0.08	Unit increase in debtors leads to a 0.08 increase in CP.	-0.268	Unit increase in cash leads to a 0.268 decrease in CP.
13	Nation Media Group.	0.16	Unit increase in inventory leads to a 0.16 increase in CP.	0.293	Unit increase in debtors leads to a 0.293 increase in CP.	-0.037	Unit increase in cash leads to a 0.037 decrease in CP.
14	Total Kenya Limited.	2	Unit increase in debtors leads to a double increase in CP.	0	Unit increase in debtors leads to no change in CP.	0	Unit increase in cash leads to no change in CP.
15	Synergy Industrial	0.05	Unit increase in inventory leads to a 0.05 increase in CP.	0.205	Unit increase in debtors leads to a 0.205 increase in CP.	0.366	Unit increase in cash leads to a 0.366 increase in CP.
16	TPS Serena.	0	Unit increase in Inventory leads to no change in CP.	-0.111	Unit increase in debtors leads to a 0.11 decrease in CP.	0.667	Unit increase in cash leads to a 0.667 increase in CP.
17	Kenya Hotel Properties.	0.5	Unit increase in inventory leads to a 0.5 increase in CP.	0.083	Unit increase in debtors leads to a 0.083 increase in CP.	0.749	Unit increase in cash leads to a 0.749 increase in CP.

18	East Africa Industries	0.5	Unit increase in debtors leads to a 0.5 increase in CP.	0.647	Unit increase in debtors leads to a 0.647 increase in CP.	0.749	Unit increase in cash leads to a 0.749 increase in CP.
19	Davis & Shirtliff Limited.	0.5	Unit increase in inventory leads to a 0.5 increase in CP.	-3.802	Unit increase in debtors leads to a 3.8 decrease in CP.	0.833	Unit increase in cash leads to a 0.833 increase in CP.
20	Kenya Shell.	0.45	Unit increase in inventory leads to a 0.45 increase in CP.	0.258	Unit increase in debtors leads to a 0.258 increase in CP.	0.966	Unit increase in cash leads to a 0.966 increase in CP.
21	General Motors Kenya.	0.21	Unit increase in inventory leads to a 0.21 increase in CP.	0.1	Unit increase in debtors leads to a 0.1 increase in CP.	0.975	Unit increase in cash leads to a 0.975 increase in CP.
22	Agip Kenya.	0.27	Unit increase in inventory leads to a 0.27 increase in CP.	0.98	Unit increase in debtors leads to a 0.98 increase in CP.	1.132	Unit increase in cash leads to a 1.132 increase in CP.

Table 4.23 shows that 13 out of the 22 firms studied have a negative relationship between CP and Cash holding, this are KPLC,(with the highest change of -1.345 in CP amount outstanding for a unit change in cash) Cooper Kenya, IPS, Athi river mining, Pan paper, Mabati rolling, Kenol, Ecta, CMC, Caltex, Express Kenya, Crown Berger and Nation. This means as the level of Cash holding decreases, these companies resort to commercial paper financing to enable them meet their cash requirements.

The results also indicate that in 16 companies there is a positive relationship between CP and accounts receivable. This means as the level of accounts receivable increase these companies resort to commercial paper financing. KPLC, Athi river mining, Kenol and Total debt holding have no influence on CP. Serena and D&s show a negative relationship between CP amounts outstanding and a unit change in accounts receivable held.

The results also indicate that apart from KPLC and Serena which show no change in inventory holding and CP. The results of 20 companies show that as the level of inventory holding increase, there is a positive increase in CP amount outstanding which means commercial paper financing is being used by companies to finance inventory accumulation as the level of business increase.

Table 4. 24; Model Summary for the Companies.

	COMPANIES	R	R Square	Adjusted R Square	Standard Error
1	Kenya Oil Company.	100%	100%	1	0
2	Athi River Mining	100%	100%	1	0
3	Total Kenya Limited.	100%	100%	1	0
4	Kenya Hotel Properties.	100%	100%	1	0
5	Ecta Kenya.	100%	100%	1	0
6	East Africa Industries	100%	100%	1	0
7	Pan Africa Paper Mills.	100%	100%	1	0
8	Davis & Shirtliff Limited.	100%	100%	1	0
9	Kenya Shell.	100%	100%	1	0
10	Agip Kenya.	100%	100%	1	0
11	IPS	100%	100%	1	0
12	Cooper Kenya limited.	100%	100%	0	0
13	General Motors Kenya.	100%	100%	0	0
14	Caltex Oil.	100%	100%	0	0
15	Mabati Rolling Mills.	100%	100%	0.161	0.478
16	K P L C	64%	41%	0	0
16	Express Kenya.	90%	88%	0.133	0.32
17	Synergy Industrial	81%	66%	0.423	0.866
18	Nation Media Group.	70%	49%	0.469	0.568
19	Crown Berger Limited.	62%	39%	0.161	0.478
20	TPS Serena.	59%	35%	-0.296	0.609
21	CMC holdings	2%	4%	-0.318	1.657

Table 4.24 shows that in 15 out of the 22 firms studied there is very strong relationship between Commercial paper borrowings and the working capital components used in the study. These firms showed a coefficient of determination of 100% meaning that variations in Commercial paper borrowings in these companies are explained by changes in working capital components used in the study – Inventory, accounts receivable and cash.

Companies with a coefficient of determination of less than 100% mean that their CP outstanding amounts are explained by other factors other than Inventory, debtors and cash which were the working capital components used in this study. The best example is CMC holding with a R

square of 4% which means their issues are not majorly influenced by the working capital components used in this study.

Table 4. 25; Analysis of Variance (ANOVA) of Regression for the Companies.

COMPANIES	Sum of Squares			F Statistic	Sig.
	Regression	Residual	Total		
Davis & Shirtliff Ltd.	201.041	0.000	201.041	0.000	0.000
Athi River Mining	28.500	0.000	28.500	0.000	0.000
Ecta Kenya.	28.500	0.000	28.500	0.000	0.000
Nation Media Group.	26.958	27.758	54.716	20.880	0.000
Agip Kenya.	23.200	0.000	23.200	0.000	0.000
Kenya Hotel Properties.	22.900	0.000	22.900	0.000	0.000
Synergy Industrial	22.900	0.000	22.900	0.000	0.000
Kenya Oil Company.	21.500	0.000	21.500	0.000	0.000
Cooper Kenya limited.	17.714	0.000	17.714	0.000	0.000
East Africa Industries	10.750	0.000	10.750	0.000	0.000
Pan Africa Paper Mills.	10.750	0.000	10.750	0.000	0.000
Caltex Oil.	10.667	0.000	10.667	0.000	0.000
General Motors Kenya.	8.667	0.000	8.667	0.000	0.000
Kenya Shell.	6.000	0.000	6.000	0.000	0.000
Total Kenya Limited.	2.000	0.000	2.000	0.000	0.000
K P L C	26.958	27.758	54.716	20.880	0.000
IPS	9.777	8.099	17.876	0.000	0.000
Express Kenya.	11.534	11.534	23.068	52.400	0.007
Crown Berger Limited.	1.169	1.831	3.000	1.704	0.243
Mabati Rolling Mills.	1.169	1.219	2.388	1.704	0.243
TPS Serena.	0.603	1.111	1.714	0.543	0.686
CMC holdings	0.953	21.964	22.917	0.116	0.948

Table 4.25 above indicates that given the various regression models the sum of squares, is larger than residual in 15 out of the 22 sampled firms. In these companies we can therefore conclude that the model accounts for most of the variation on the dependent variable, which is Commercial paper borrowings.

The study showed that in 17 out of the 22 sampled firms, the F statistic ranges from 0 to 1 with a low f critical values hence we reject the null hypothesis that there is no relationship between working capital components and CP borrowings.

4.3 Summary and Interpretation of Findings.

The researcher conducted a multiple linear regression analysis so as to determine the relationship between CP and the independent variables; Inventory, Accounts receivable and Cash for the number of years each company has been in the market since the first CP issue in 1994.The model $CP_{it} = \beta_o + \beta_1 INV + \beta_2 ACCREC + \beta_3 CASH + \varepsilon$ was applied in each of the sampled 22 companies.

In13 out of the 22 firms studie,the results revealed that there is a negative relationship between CP and Cash holding,This therefore means that as the level of Cash holding decreases, these companies resort to commercial paper financing to enable them meet their cash requirements.

The results also indicate that in 16 companies there is a positive relationship between CP and accounts receivable.As the level of accounts receivable increase, these companies resort to commercial paper financing.

The results of 20 companies show that as the level of inventory holding increase, there is a positive increase in CP amount outstanding which means commercial paper financing is being used by companies to finance inventory accumulation as the level of business increase.

The coefficient of determination (R square) measures the proportion of variability in a data set that is accounted for by a statistical model. In 15 out of the 22 firms studied there is very strong relationship between Commercial paper borrowings and the working capital components used in the study. These firms showed a coefficient of determination of 100% meaning that variations in Commercial paper borrowings in these companies are explained by changes in working capital components used in the study – Inventory, accounts receivable and cash.Companies with a coefficient of determination of less than 100% means that their CP outstanding amounts are explained by other factors other than Inventory, debtors and cash which were the working capital components used in this study.

Adjusted R squared attempts to correct R square to more closely reflect the goodness of fit of the model in the population but since we used only one model for each of the companies, we can only rely on R square.

Standard error is a measure of variability and as such measures the variability that a constant would be expected to show. The results showed that for companies whose borrowings are wholly explained by changes in WC components, this are the 15 companies with a coefficient of determination of 100%, there is no variability. This is evidenced by these companies having a nil standard error as shown in the summary table above. Companies whose borrowings are influenced by other factors other than WC,this are the ones with a very low coefficient of determination showed some level of variability in the model.

Analysis of variance (ANOVA) is a method of testing the null hypothesis that several group means are equal in the population. This is done by comparing the sample variance estimated from the group means to that estimated within the groups.

Sum of squares measures the variability of a data set. From the summary table above,the study indicated that given the various regression models the sum of squares, is larger than residual in 15 out of the 22 sampled firms. In these companies we can therefore conclude that the model accounts for most of the variation on the dependent variable, which is Commercial paper borrowings.

The F statistic to measure if the regression model fits well. The study showed that in 17 out of the 22 sampled firms, the F statistic ranges from 0 to 1 with a low f critical values hence we reject the null hypothesis that there is no relationship between working capital components and CP borrowings. This is confirmed by the low significance values in these companies which are less than 0.005 meaning CP borrowings are influenced by variations in working capital components.

The results concurs with studies by Calomiris et al. (1995) who concluded that commercial paper is strongly correlated with variations in cash suggesting a causal link. Their study also showed that increased commercial paper issuance is used to finance inventory accumulation and also CP is strongly correlated with increases in accounts receivable.

Gorton and Pennacchi, (1990) who did a similar study concluded that firms with large inventories and accounts receivable use the commercial paper market to give them greater flexibility in their short-term financing. A similar study by Gertler and Gilchrist (1993) showed that large firms show substantial increases in inventories and short-term debt around cyclical peaks, suggesting that commercial paper is used to finance the movements of inventories.

CHAPTER FIVE

5.0. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

This section of the study provides a summary of findings of the study, conclusion, suggestions, recommendations, limitations and suggestions for further research. The main objective of the study was to establish the relationship between commercial paper financing and working capital components in Kenya.

The casual research design was adopted for the study to explore the effect of independent variable to dependent variables. Inventory, accounts receivable and cash were taken as the independent variables. The dependent variable was Commercial paper outstanding. Population comprised of the twenty seven companies that have issued CP since the first issue in 1994. Secondary data collection method was used and data collected of twenty two companies that have been in the market for more than two years. Source of data included NSE database, (CMA) and Annual audited financial statements of these companies. Data collected were the financial statistics which enabled the calculations of the variables used. Data was analyzed using SPSS version 11. Cross-sectional time series fixed models were used with regression and correlation analysis to determine the nature and strength of the relationship between the independent and dependent variables.

The findings of this study were as follows; that in the majority of the companies there is a negative relationship between CP and Cash holding and a positive relationship between CP and Inventory and CP and accounts receivable. The coefficient of determination (R square) showed that in a majority of the companies there is very strong relationship between Commercial paper borrowings and working capital components. This means that variations in Commercial paper borrowings in most companies that have issued the paper in Kenya are wholly explained by changes in working capital and not by any other factors.

5.2. Conclusions

The study aimed to establish the relationship between commercial paper financing and working capital components in Kenya. The casual research design was adopted for the study which explores the effect of one variable on another. The key variables of the study were Commercial paper, Inventory, Accounts receivable and Cash in hand and at bank. Commercial paper was the dependent variable while Inventory, Accounts receivable and Cash were the Independent variables.

Simple and multiple linear regression models were used to estimate the causal relationship between CP and the chosen variables. Based on the regression and correlations analysis, the study showed that there is a negative relationship between CP and the level of cash holding meaning that as the level of Cash holding decrease, companies enter the commercial paper market to enable them meet their cash requirements.

The study also revealed that there is a positive relationship between CP and Inventory and a positive relationship also between CP and accounts receivable. This means commercial paper financing is used by companies to finance these working capital components as their level of business increase. This portrayed that Commercial paper borrowings in most companies that have issued the paper in Kenya are wholly explained by changes in working capital and not by any other factors.

The study expected a strong relationship between commercial paper borrowings and components of working capital that are assets. From the above, it is seen that in all the cases, the effect of commercial paper is directly related to working capital and because of the strong relationship; the researcher concluded that there are no other factors that could have strong effect on the dependent variable, commercial paper outstanding.

5.3. Policy Recommendations.

The firms financing strategy determines the capital structure of the firm. A business requires different types of capital in order to operate. Working capital is often considered to be the most significant types of capital. It is claimed that the amount of this can determine the success of the company. Whenever a need of working capital arises due to the increasing level of business activity financing arrangements should be sought quickly. It is very important for firms to manage working capital efficiently. This is important from the point of view of both liquidity and profitability. When there is a poor management of working capital, funds may be unnecessarily tied up in idle assets. This will reduce liquidity of the company.

A finance manager devotes more time to working capital management than any other activity because current assets by their nature are changing daily and managerial decisions must be made. Questions relating to how much inventory is to be carried and whether there are funds to pay for it are often asked. Unlike long term decisions there can be no deferrals of actions relating to working capital. While long term decisions determine the success of the firm, short term decisions on working capital determine whether firms get to the long term

From the findings of the study above, there is a direct relationship between Commercial paper financing and components of working capital in some firms in Kenya. CP is cheap and cost efficient and also its borrowing amounts can be adjusted very easily by issuing a new paper or retiring it at maturity. It is therefore recommended for other companies as it can also be particularly valuable for new investment where the exact funding needs are not known at the inception of a project. It is also a recommended form of financing for companies as it assists in managing increased working capital requirements while reducing costs of financing as a company needs to be always properly financially resourced. CP financing also provide flexibility by allowing firms facing un-certain funding needs to make borrowing decisions only when their financing needs become known.

CP is also recommended as a substitute for other forms of corporate liquidity such as cash and bank overdrafts, both of which could also be used to finance new investments and working capital requirements at short notice or to finance investment until a cost-efficient bond issuance size is reached. It’s also recommended over cash holdings because financing costs are incurred

only in the event that financing is actually needed and are determined only by the actual amounts that are borrowed.

5.4. Limitations of the Study

The companies that have issued CP since the first issue by Brooke bond in 1994 are only 27, with the companies issuing decreasing in recent years. This limited the study as data used was for earlier years in order to determine the relationship between the variables. Five companies that have been in the market for only one year were excluded from the study.

The period of the study was not defined as the different companies have been in the market for different periods. The study was thus done based on the number of years the company has been in the market which made the analysis quite lengthy and time consuming.

The study relied on secondary data which were collected from Annual audited financial statements of the companies, NSE database and CMA library. In as much as there are general guiding principles for the preparations and reporting of the financial statements which are Generally Accepted Accounting Principles and International Financial Reporting Standard, these companies being in various types of activities use different accounting policies and therefore reliability and quality of data was not 100%.

Twelve companies in the population were not listed, information from these companies was not 100% reliable as some shared the financial information verbally and were not ready to provide hard copies of their accounts to the researcher for verification.

5.5. Suggestions for Further Studies.

The study showed in some companies CP is not limited to working capital financing alone as there were no correlations between the variables. An avenue of further research will be finding out the other uses of CP financing to show that CP is not limited to not only financing of short term investments but also long term investment needs of companies.

A useful avenue for further research will be to find out if CP influences firms' investment policies and financing decisions; how firms in Kenya choose between alternative sources of funds to enhance their financial flexibility and if CP affects investment behavior of firms.

The objective of the study was to establish relationship between CP financing and working capital in Kenya. Findings showed that there is a decrease in the number of companies raising funds by way of CP. Further research can be done to find the reasons for the deterioration of the market in Kenya despite the CP being a cheap source of financing or to find out whether there are restrictions preventing companies from issuing CP in Kenya. Would issuers in Kenya prefer having notes traded in the secondary market like NSE.

The study focused mainly on CP financing in relation to working capital in Kenya, this is more on the use of CP funds, further research can be done to find out if there are similarities amongst these companies that have issued CP with respect to size, industry and ownership. How effective is CP in managing short term cash flow at a low cost. The cost of borrowing has a significant impact on profitability of companies in the current challenging economic environment.

To come up with a classification of Kenyan investors on CP and what specific considerations influence them to invest on CP as opposed to alternative investments. What factors influence these companies to invest will be useful to managers as well as dealers. This will provide information to the corporate sector about the specific considerations of dealers in deciding which CP issue to place.

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APPENDICES

Appendix I: companies which have issued CP.

	POPULATION OF THE STUDY
1	Crown Berger Limited.
2	Kenya Oil Company.(Kenol kobil)
3	Athi River Mining Company Limited.
4	TPS Serena.
5	Total Kenya Limited.
6	Kenya Power and Lighting Company Limited.
7	Nation Media Group.
8	Express Kenya.
9	CMC holdings
10	Kenya Hotel Properties.
11	Ecta Kenya.
12	Mabati Rolling Mills.
13	Cooper Kenya limited.
14	East Africa Industries (Unilever).
15	Pan Africa Paper Mills.(Pan papermills ltd)
16	Davis & Shirtliff Limited.
17	Kenya Shell.
18	Industrial Promotion Services.
19	Agip Kenya.
20	General Motors Kenya.
21	Synergy Industrial
22	Caltex Oil.
23	K REP Bank
24	Kenya Kazi Limited.
25	Brooke Bond.
26	Lonrho Motors.
27	Bidco Oil Company.

Appendix II: Analysis of companies that have issued CP by Years.

POPULATION OF THE STUDY	PERIOD	YEARS IN THE MARKET
Crown Berger Limited.	2000 to 2011	12
CMC Holdings.	1999 to 2010	12
Kenya Oil Company.	2001 to 2011	11
Ecta Kenya.	2000 to 2009	10
Kenya Hotel Properties.	2000 to 2009	10
Athi River Mining	1998 to 2000,2003,2005 to 2008	8
Cooper Kenya limited.	2004 to2010	7
TPS Serena.	1999 to 2003,2005 to 2006	7
Mabati Rolling Mills.	1997,1999 to 2003	6
East Africa Industries	1999 to 2002	4
Pan Africa Paper Mills.	2000 to 2003	4
Davis & Shirtliff	2008 to 2011	4
Synergy Industrial	2006 to 2009	3
Total Kenya Limited.	1999 to 2001	3
General Motors Kenya.	1999 to 2001	3
Kenya Shell.	1999 to 2001	3
Caltex Oil.	1999 to 2001	3
K P L C	1999 to 2000	2
IPS	1999 to 2000	2
Nation Media Group.	1998 and 2001	2
Agip Kenya.	1998 to 1999	2
Express Kenya.	1999 to 2000	2
Brooke Bond.	1994	1
Lonrho Motors.	1999	1
Bidco Oil Company.	1999	1
Kenya Kazi Limited.	2011	1
K Rep Bank	2008	1

Appendix III: Growth of commercial paper market.

YEAR	CP OUTSTANDING AMOUNT (KSH Billions)
1997-9	11,600,000,000
2000	8,150,000,000
2001	7,550,000,000
2002	2,850,000,000
2003	2,900,000,000
2004	1,820,000,000
2005	1,640,000,000
2006	2,132,420,000
2007	2,939,780,000
2008	2,535,580,000
2009	2,131,980,000
2010	1,915,900,000
2011	1,094,755,492

Appendix IV: Data Collection Form.

Name of the Company----------

Description	**Years**			
CP Outstanding				
Inventory				
Trade and other receivables				
Cash at bank and in hand				
Total Debt/Borrowings				