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**The Impact of Corporate Governance on Working Capital Management Efficiency of
Kenyan Listed Firms**

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Abstract

This paper analyzes the impact of corporate governance on working capital management efficiency of Kenyan listed firms. The sample size was 27 firms within 5 of the sectors in the Kenyan economy for the period 2009-2014. Through regression analysis the paper investigates the relationship between corporate governance practices and working capital within the firms. The findings of this study indicate that corporate governance plays some role in improving the efficiency of working capital management however there is not necessarily a causal relationship between the two.

Key words: *Working capital management, Corporate Governance Practices*

Table of Contents

1	Introduction.....	1
1.1	Background	1
1.2	Research objectives	2
1.3	Research questions	3
1.4	Problem statement	3
2	Literature review	4
2.1	Working capital	4
2.2	The operating cycle	5
2.3	Cash conversion cycle.....	6
2.4	Previous findings in the topic.....	7
3	Research methodology.....	11
3.1	Methodology	11
3.2	Sample and data	11
3.3	Data analysis	12
3.3.1	Number of days' account receivables.....	12
3.3.2	Number of days' inventory.....	12
3.3.3	Number of days' account payable	13
3.3.4	Cash conversion cycle.....	13
4	Results and analysis.....	15
4.1	Regression analysis	15
4.1.1	Average collection period analysis.....	15
4.1.2	Inventory turnover in days' analysis	15
4.1.3	Average payment period analysis.....	16
5	Conclusion	17
6	References.....	19
7	Appendices	23

List of tables

Companies in the study 11
Average Collection Period Coefficients 23
Average Collection Period Statistics 23
Inventory Turnover in Days Coefficients 23
Inventory Turnover in Days Statistics 23
Average Payment Period Coefficients 24
Average Payment Period Statistics 24
Cash Conversion Cycle Analysis Coefficients 24
Cash Conversion Cycle Analysis Statistics 24

List of figures

Cycle of operations.....5

List of abbreviations

- ACP - Average Collection Period
- ITID - Inventory Turnover in Days
- APP - Average Payment Period
- CCC - Cash Conversion Cycle
- BS - Board size
- BC - Board committees
- BM - Board meetings
- ε - the error term.

1 Introduction

The aim of this chapter is to provide a discussion for the background of the research problem and the expected contribution of the study.

1.1 Background

Working capital is a straightforward concept that makes sure that a corporation is able to fund the difference between short-term assets and short-term liabilities (Harris, 2005, p. 52). Working capital management however refers to the way a firm is managing their four major working capital accounts which includes inventory, receivables, payables and accruals. *“The management of working capital involves the management of the transformation process of resources from the cash invested in inventory once payables and operating accruals are paid, through the operations or production process, followed by the selling process, and finally, the credit collection process. The management of this transformation process has a profound impact on the liquidity position of the firm”* (Maness & Zietlow, 2005, p. 96). Losbichler and Mahmoodi (2012, p. 26), stated that working capital is one of the most powerful and least understood drivers for supply chain managers to improve a company’s cash flow and profitability.

All in all, firms need some means of financing their current assets completely. Some firms opt to finance their assets with short-term financing while other firms finance their assets with long term financing. This is the working capital management concept which is the management of the current assets and the current liabilities.

The length of turnover however differs from industry to industry. Firms in the manufacturing sector for example tend to have a longer cash conversion cycle than firms in the horticultural industry so there is no definite definition of the term “short term” that cuts across all industries. Likewise, there is no clear cut amount that is considered the optimum amount of working capital and the optimum amount that should be owed to creditors and that should be in a firm’s account receivables that cuts across all industries. All the same, excessive levels of current assets can lead to a firm realizing a lower return on investments while a minimal amount of current assets may lead to the company incurring shortages and difficulties in maintaining smooth operations (Horne

& Wachowicz, 2000). There therefore has to individuals responsible for ensuring that an optimal level of working capital is maintained. This brings in the relevance of corporate governance in companies.

As most companies aim to maximize their profits they seek the optimal strategy to reduce costs and produce the maximum possible profit to the organization. This may at times involve using means that shareholders may not appreciate. To ensure there are no conflicts of interest, there has to be a system of principles, policies, procedures and clearly defined responsibilities and accountabilities used by the stakeholders and this is corporate governance (Clarke, 2007). Some profit maximizing strategies over the years have included cost reduction, product modification and changing investment strategies. Similarly, management of working capital is a way to maximize on profits. Since the board of directors oversees the operating, investing and financial activities of the company, it therefore makes decisions that maximize the shareholder's wealth as well as ensure efficient management of the firm's resources (Wambua, 2010). In this regard, Achchuthan and Kajanathan (2013) argue that corporate governance practices are strategies which are formulated in order to meet the short, medium and long term objectives of a firm as well as those of the shareholders. Working capital management efficiency is therefore an important mechanism for meeting the short term objectives of a firm which in turn ensures a tradeoff between liquidity and profitability thus a need to analyze the relationship between it and corporate governance.

1.2 Research objectives

To establish corporate governance practices of firms listed in the NSE.

To determine the levels of the measures of working capital management efficiency of firms listed in the NSE

The research also aims to evaluate the relationship between corporate governance and the measures of working capital management efficiency of firms listed in the NSE.

1.3 Research questions

What are the levels of the accounts payables, accounts receivable and inventory conversion periods of firms listed at NSE?

What is the relationship between corporate governance and the measures of working capital management efficiency of firms listed at NSE?

1.4 Problem statement

According to Filbeck & Krueger, (2005) the success of a business depends heavily on the ability of financial managers to effectively manage the components of working capital and Sen et al (2011) adds that efficient management of working capital is a significant component of improving profitability and competitiveness of firms. The decision makers therefore have the responsibility of ensuring that the company runs smoothly and is profitable to the stakeholders. Corporate governance therefore has to encompass improving performance and competitiveness of corporations by ensuring efficient management of working capital.

In light of this, Gill and Biger (2013) conducted a study in USA and found out that corporate governance improves working capital management efficiency in the American manufacturing firms while a study by Achchuthan and Kajanathan (2013) revealed that corporate governance has no influence on working capital management efficiency. Kamau and Basweti (2013) found that there is a positive but a weak relationship between corporate governance and working capital management efficiency through regression analysis however, through ANOVA and individual t tests they concluded that the relationship was not statistically significant.

Owing to the result, this research seeks to break down the working capital management efficiency to its measures and analyze the relationship between each of them and corporate governance.

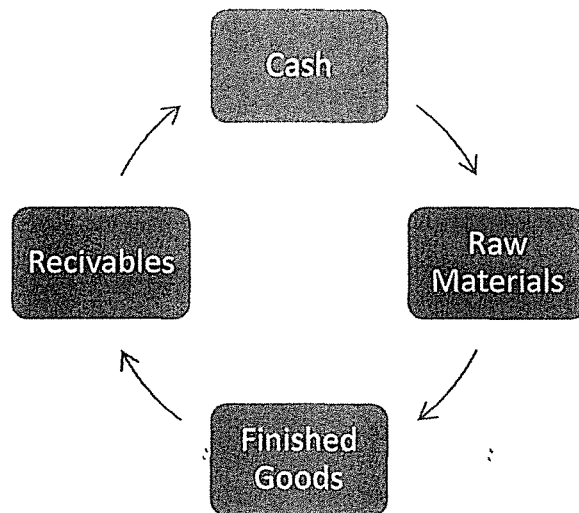
2 Literature review

2.1 Working capital

Working capital has to meet all the operating expenses of a business as stated by Chakraborty (1973). It does not necessarily have to be equal to the level of expenses however it should be of an amount that is dependent on the operating cycle (Eiteman 1963) It can also be perceived as a financial metric which represents the operating liquidity available to a business (Summers & Wilson 2000).

We can therefore define it as the difference between current assets and current liabilities. (Arnold, 2008, appendix G: 30). It is calculated as the difference between short-term assets and short term liabilities where the short terms assets include cash, account receivables, marketable securities and inventories while short term liabilities are principally accounts payable and also includes short term debt (Brealey & Myers, 2013). All the same, what would be considered as current has varied among authors with Park and Gladson (1963) stating that the correct “currentness” is dependent on the nature of the core business activity and is a function of the nature of its basic activity as dictated by the technological requirements and the trading conventions. More recently however, Dong & Su, (2010) have estimated the average time within which working capital is usually converted into cash is twelve months.

According to Brealey and Myers the strength of working capital measure is that it is unaffected by seasonal or other temporary movements between different current assets or liabilities. However, the fact that working capital is rather constant in the cycle of operations also means that it is hard to pick out individual figures that give information such as risk and liquidity. Though what stands out is that by gaining better control of their working capital components the firms can increase their performance as they can find an appropriate mixture of how to allocate and invest their available resources in order to maximize the economic benefit (Hofman & Kotzab, 2010, 308-309).



1 Cycle of operations

2.2 The operating cycle

The components of the cycle are the number of days it takes to convert a batch of inventory into cash, the number of days the company extends to creditors to pay their debt and the number of days the company takes to pay for items it has acquired on credit. These variables are used to assess the inventory policy, collection policy and credit policy of a firm respectively. The cycle gives an overview of the working capital management strategy employed by a company.

The operating cycle brings to the attention of managers cost effectiveness and is used to analyze working capital management. Eitman (1963) also adds that analyzing the future length of the operating cycle is important in planning for the next year through forecasting and thus financing company operations from an informed point of view.

According to Chakraborty (1973), the operation cycle of any business has sequential time periods whose sum would yield the Operating Cycle.

- i. Acquisition and storage of materials
- ii. Conversion process (if the company is a purely trading business this is likely to be eliminated)
- iii. Finished goods storage
- iv. Collection of money from debtors

Summers and Wilson (2000) found that there was negative influence of the inventory period and cash conversion cycle in enhancing profitability of manufacturing companies while on the contrary they positively impacted companies in the service sector. This confirms that different sectors are affected differently by the cash conversion cycle. They also found that financing policies that tend to lean more on short-term financing decrease the profitability of the company.

The number of days within industries may be different from that of another industry due to factors such as the diffusion of the product nature, capacity for having products ready to provide to customers among those companies and the automation level and technology used as stated by Summers and Wilson (2000)

2.3 Cash conversion cycle

The cash conversion cycle measures the time between the purchases of raw material until the firm receives money for their finished sold product as stated by Deloof (2003). It is used as a comprehensive measure of working capital management. It is calculated as (Number of days Account receivable + Number of days Inventory - Number of days Account payable).

2.4 Previous findings in the topic

Earlier research on working capital management focused on the impact of net working capital on the firm's profitability or return on equity. For example, Shin and Soenen (1998) researched on the relationship between working capital management and value creation for shareholders. They used the cash conversion cycle (CCC), as a proxy for working capital management. The cash conversion cycle reflects the time span between disbursement and collection of cash. They argue that firms create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level. They found a strong negative relationship between the length of the firm's net-trade cycle and its profitability. Gill, Biger, and Mathur (2010), also found a statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. Similarly, Garcia-Teuruel and Martinez-Solano (2007) report a positive relationship between firm profitability and improvement in working capital management.

(Deloof M. 2003) stated that the way in which working capital is managed will have a significant impact of profitability on firms since most firms have a large amount of cash invested in working capital. He used correlation and regression tests to analyze Belgian firms and found that there was a negative relationship between the accounts payable and profitability and this was consistent with the view that less profitable firms wait longer to pay their bills. He also found that there was a negative relationship between gross operating income and the number of days' accounts receivable, inventories and accounts payable and therefore recommended that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. Profitability and returns can therefore decrease with the cash conversion cycle, if the cost of investments in working capital increases faster than the benefits of holding more inventories and concede more trade credit to customers. He however also stated that a long cash conversion cycle might increase profitability since it often leads to higher sales.

(Lazaridis I and D Tryfonidis. 2006) measured the efficiency of working capital management by use of the cash conversion cycle and by analyzing the gross operating profit of listed firms in the Athens Stock Exchange Market using a sample of 131 companies for the period of 2001 - 2004. Through regression analysis and descriptive statistics, they observed that there was a negative

relationship between profitability and the gross operating profit. They concluded that managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level.

In 2007, Raheman A and Nasr M. found that Pakistani firms hold large amounts of cash invested in working capital and thus expected the way in which the cash was managed would impact on the profitability of the firms. They analyzed the firms by using panel data regression analysis and cross sectional and time series data for a sample of Pakistani firms listed on the Karachi Stock Exchange. They found a significant relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and the cash conversion cycle. This confirmed that less profitable firms wait longer to pay their bills and that managers can create value for their shareholders by reducing the number of days' account receivables and inventories.

In 2008, Afza T and Ms. Nazir sought to find out the relationship between the aggressive/conservative working capital policies by investigating the policies in seventeen industrial groups and a sample of 263 public limited companies listed in the Karachi Stock Exchange for a period of 1998-2003. They used ANOVA and LSD test to analyze the data and found that there was a significance difference among their working capital investment and financing policies across the different industries. They also found a negative relationship between the profitability measures of firms and the degree of aggressiveness of working capital investment and financing policies.

By use of the ANOVA and Pearson Correlation methods to analyze the Pakistan textile industry, Ahsen Saghir et al, (2011) found out that if a firm is able to reduce the time periods in the cash conversion cycle, then it is efficient in managing working capital. The consequent efficiency will lead to increasing its profitability. This indicated a negative relationship between profitability and the cash conversion cycle which he used to measure the working capital efficiency.

More recently, Kieschnick, LaPlante, and Moussawi (2013) have found that an incremental dollar invested in net operating capital is worth less than an incremental dollar held in cash for the average

firm by adjusting for industry differences in working capital management practices, using risk-adjusted shareholder returns as opposed to the book value-based profitability measures and using the most comprehensive value for net working capital (current asset less current liabilities) that takes into account overall working capital management efficiency.

This research acknowledges that finding the optimal working capital is a big debate today and that it may not be possible to arrive at a universal amount of this however, it is clear that there is an impact of working capital on company performance. There have even been extreme views of the optimal capital being zero. From this perspective working capital is viewed as an idle resource that provides little or no value at all. The value is then created by the firms fixed assets which are producing the products of the firms through the raw materials purchased. The production process within firms then creates value that did not exist before. (Maness & Zietlow, 2005, p. 16). To what extent does working capital impact the financial performance in terms of profitability of listed companies in Kenya? Would they benefit from a lower or higher level of working capital components than they currently have? This research investigates this.

In Kenya, Ouma (2001) studied cash management approaches employed by companies quoted at the NSE. From a sample of 27 companies, her findings indicated that quoted companies apply 25 specific policies in the management of their cash balances and plan for their cash balances. They have more than one planning period and the weekly planning period is the most popular.

Nyakundi (2003) studied working capital management policies among the public companies in Kenya. From a sample of 30 companies quoted at the NSE covering the period from 1998 – 2002, he concluded that most companies practiced the aggressive WCM policy. No significant differences were noted between the WCM policies across the five sectors. Further there were no significant differences in return on equity among companies that practice different WCM policies. From a simple regression analysis, he found no relationship between the WCM policies and return on equity.

Ochieng (2006) carried out a study on firms quoted on the NSE over the last twenty (20) years on the relationship between working capital and the economic activities in Kenya. The objective of the study was to examine how the changes in economic activities affect changes in working capital by firms listed on the NSE. The findings revealed that the liquidity of the small firms as measured

by the current and quick ratios increased slightly during economic slowdown. The study also shows that the liquidity positions reacted differently to various economic indicators such as inflation and lending rates. With lending rates, the study found that lending rates indeed did affect the amount of working capital for the firms and this further showed that during times of economic contraction, working capital positions of the firms improved.

Kithii (2008) carried out a study on the relationship between working capital management and profitability of listed companies in Nairobi's securities exchange. Her objectives were to establish how efficient the firms are managing their working capital. She also aimed at establishing the relationship between profitability, the cash conversion cycle and its components for the listed companies in the Nairobi securities exchange for the period 2001 – 2006. The results showed that there is a statistically significant negative relationship between variables of working capital management and the profitability of firm except for the average payment period which showed a positive relationship.

Mutungi (2010) carried out a study on the relationship between working capital management and financial performance of oil marketing companies in Kenya. The study was inspired by the fact that working capital in any firm is extremely critical and requires conscious balance between the components on the working capital namely cash, receivables, payables and inventory. The objectives of the study were to establish the working capital management policies among oil marketing firms in Kenya and to examine the relationship between working capital management and profitability in oil marketing firms in Kenya. From the correlation analysis, the study concluded an existence of aggressive working capital policy in the oil sector.

Waweru (2011) carried out a study on the relationship between working capital management and the value of companies quoted at the NSE. The study used secondary data obtained from annual reports and audited financial statements of companies listed on the NSE. A sample of 22 companies listed on the NSE for a period of seven years from 2003 to 2009 was studied. The average stock price was used to measure the value of the firm. The regression models indicated that there was some relationship between working capital management and the value of the firm while the result of the Pearson correlation indicated a negative relationship between average cash collection period, inventory turnover in days, cash conversion cycle and the value of the firm.

3 Research methodology

3.1 Methodology

The research design that shall be adopted will be correlational research design. This shall be used to identify the strength of association between corporate governance and working capital efficiency since it determines the strength of association between variables (Warrack, 2003, p. 634).

3.2 Sample and data

Population of the study is all listed firms in the Nairobi Stock Exchange. Firms that have been consistently listed at the NSE and have engaged in active trading from 2009 to 2014 shall constitute the sample however the financial companies shall be excluded. This is because their financial structure and financial characteristics are different from other sectors and not suited for the measurement of working capital. In addition, working capital does not influence them as it does other sectors thus including them could give misleading results. The research thus excludes them to remove any anomalies associated with this sector which is highly regulated by the central bank on issues of liquidity, asset and capital holding, and provision for bad debts among other factors (Santos, 2001). The sample will include data of a time frame between 2009 and 2014.

Twenty-seven (27) companies have been consistently listed at the NSE from 2009-2014 and these companies form the sample of the study.

SECTOR	NUMBER OF COMPANIES IN THE SAMPLE
Agricultural	4
Commercial services	8
Construction and allied	5
Energy and petroleum	4
Manufacturing and allied	6

1 Companies in the study

The data will be collected from the respective company's annual financial statements and annual reports of the listed public companies. The information that shall be used is as listed:

- Accounts Receivables: an average of beginning and closing amounts
- Inventory
- Account Payables: an average of beginning and closing amounts
- Board size
- Board meeting
- Board committees

3.3 Data analysis

To establish corporate governance practices of firms in the sample, the research shall use descriptive statistics of maximum, minimum, mean and standard deviation of the board size, board meetings, board committees CEO tenure and firm size. Correlation analysis shall then be carried out between the measures of working capital efficiency management and the corporate governance components. It shall be calculated in excel as per the formula below

The measures of working capital efficiency management to be used are:

3.3.1 Number of days' account receivables

This shall be used as a proxy for the Collection policy of the company being observed.

$$AR = \frac{\text{account receivable}}{\text{sales}} \times 365$$

3.3.2 Number of days' inventory

This shall be used as a proxy for the Inventory policy of the respective company.

$$INV = \frac{\text{inventory}}{\text{cost of goods sold}} \times 365$$

3.3.3 Number of days' account payable

This shall be used as a proxy for the Payment policy used by the respective company

$$AP = \frac{\text{accounts payable}}{\text{purchases}} \times 365$$

3.3.4 Cash conversion cycle

This is the comprehensive measurement of working capital and is measured by:

$$CCC = AR + INV - AP$$

The correlation shall be calculated directly in an excel sheet through the formula below

$$r = \frac{covxy}{S_x S_y}$$

Where y is the measures of working capital efficiency management while x is the corporate governance components.

The α value of be 5% shall be used and N is the number of observations (27). The correlation coefficient, also referred to as the R-value, will have a value somewhere between -1 and +1. If the value is +1 it represents a perfect positive correlation meaning that the two variables are precisely related. If the values on one variable increase the values on the other will increase as well. A value of -1 means the opposite, a perfect negative correlation. If the correlation is 0 it means that the variables are perfectly independent. Often the results are located somewhere in between -1 and +1 and determined with. (Saunders et al, 2009, p. 459).

To evaluate the relationship between corporate governance and working capital management efficiency of the sample, correlation and regression analysis shall be used. Corporate governance shall be the independent variable and the dependent variable working capital management efficiency.

The model that shall be used for the regression analysis shall be as follows

$$X_{it} = \beta_0 + \beta_2 (BS_{it}) + \beta_3 (BC_{it}) + \beta_4 (BM_{it}) + \varepsilon$$

Whereby;

X_{it} Is:

- ACP_{it} Average Collection Period
- $ITID_{it}$ Inventory Turnover in Days'
- APP_{it} Average Payment Period
- CCC_{it} Cash Conversion Cycle

While

- β_0 Is the Y intercept
- BS_{it} The number of directors serving in the board for firm i in year t.
- BC_{it} The number of board committees for firm i in year t.
- BM_{it} The number of board meetings annually.

If the results of this regression are negative and highly significant at α it will imply that the increase or decrease in the variable will significantly affect the profitability of the firm. An increase in the variable will reflect a decrease in profitability

If the results of this regression are negative and highly significant at α it will imply that the increase or decrease in the variable will significantly affect the profitability of the firm. An increase in the variable will reflect a decrease in profitability

4 Results and analysis

4.1 Regression analysis

4.1.1 Average collection period analysis

The adjusted R squared shows that the independent variables have a significant effect of 47% on the average collection period of the energy industry and do not have an effect on any of the other industries. The F-statistic of the other industries is above our alpha of 5% and this indicates that the model does not reveal a significant relationship between the average collection period and the corporate governance components under study.

The results in Table 3 show that the variation of the average collection period of the energy industry is affected negatively by the number of board meetings held (with a coefficient of -5.3). This means that if an extra meeting is held within the companies in industry, the average collection period will decrease by 5.3. The board committees and board size on the other hand have positive coefficients. This indicates that the more the committees and the larger the size the longer the companies in the energy industry take to receive assets owed.

4.1.2 Inventory turnover in days' analysis

The F-statistic shows that only the commercial and energy sectors are significantly impacted by the variables of corporate governance used in the model (board committees, board size, and board meetings). The adjusted R squared shows that the independent variables have a significant effect of 73.5% on the inventory turnover in days of the commercial industry and a 45.3% significant effect on the Inventory Turnover in Days of the agricultural industry. The manufacturing, energy and construction sectors had an F-statistic that is higher than 0.05 thus indicating that the model does not reveal a statistically significant relationship between the Inventory Turnover in Days and the corporate governance components under study for the three industries.

The results in Table 5 show that the variation of the inventory turnover in days of both the commercial and agricultural industries positively affected by the board committees and board meetings while there is a negative relationship between the board sizes of the firms and the inventory turnover in days.

4.1.3 Average payment period analysis

The F-statistic shows that the corporate governance variables have a significant effect on the average payment period of the energy industry. The R squared shows that the independent variables have a significant effect of 71% on the average payment period of the industry based on the listed companies within the industry. The agricultural, manufacturing, construction and commercial sectors are however not significantly affected by the corporate governance components under study as is shown in table 7.

As per the results in table 6, the board committees and the board size have a positive implication on the average payment period of the energy industry. The board meetings however has a negative coefficient of 0.7 which indicates that each additional meeting in companies within the industry would reduce the average payment period by 0.7 days.

5 Conclusion

This paper analyzes the impact of corporate governance on working capital management efficiency of Kenyan listed firms. The sample size was 27 firms within 5 of the sectors in the Kenyan economy.

This study had several limitations as it was carried out. Lack of data on corporate government policies as from 2009 was the biggest limitation. The automobiles industry did not have enough data to carry out the regression analysis and therefore was not included in the study. However, the implementation of the guidelines on corporate governance best practices issued by the Nairobi Stock Exchange (NSE) and the Capital Markets Authority (CMA), as well as adherence to internationally accepted best practices in corporate governance is leading to more transparency in corporate governance practices as is evidenced by conclusive corporate governance reports in recent years.

From the analysis, we conclude that the corporate governance variables have the highest significant effect on the cash conversion cycles of the commercial and services industries at 60% and the lowest significance on the agricultural sector as evidenced by the adjusted R squared of 38%. There is also no significant effect on the cash conversion cycles of the energy, construction and manufacturing industries.

Significant positive relationships were identified between the number of the board committees and board meetings held and the cash conversion cycle of the commercial industry. The board size on the other hand had a negative impact on the cash conversion cycle of the industry. During the regression it was deduced that the corporate governance variables had a significant effect on the inventory turnover in days. The board committees and board meetings had a positive impact on the days while the board size had a negative size on the number of days. This could indicate that the larger the board of the company, the better the input in terms of probable target market and the more the diversity in ideas in terms of sales. This could be why the larger board size reduces the inventory turnover days.

The agricultural industry also was significantly positively impacted by the corporate governance variables used. There research indicated that there is a 38% effect on the cash conversion cycle of the agricultural industry by the corporate governance variables. The board committee has a

positive impact on the cash conversion cycle and also had a positive impact on the inventory turnover in days. There is however a negative significant impact on the cash conversion cycle caused by the board meetings and size of the board. This could indicate that larger board sizes and more meeting reduce the number of days in the cash conversion cycle by 10.6 and 5.5 days respectively.

The collection and the payment policies of the 2 industries are however not affected by the corporate governance policies. The collection and payment policies of the energy industry are however significantly affected by the corporate governance variables. A unit increase in the board committees in the industries increases the average payment period by 7.3 and reduces the average collection period by 17.41. A unit increase in the board size also increases both the average payment period and average collection period by 17.7 and 3.24 units respectively. A unit increase in the board meetings on the other hand reduces the average collection period (which reduces the credit risk companies in this sector are exposed to) and the average payable by 5.3 and 0.7 units respectively.

In conclusion, based on the regression output in table 9, the research deduces that corporate governance has an impact on the working capital management efficiency in Kenyan listed firms within the commercial and agricultural sector only since the F-statistic is lower than the alpha level which was 5%. There is no significant effect on the working capital management efficiency of the energy construction and manufacturing firms therefore consistent with previous research by Achchuthan and Kajanathan (2013) and inconsistent with that of Gill and Bigger (2013). There may however not necessarily be a causal relationship between the two but further research on this has to be conducted and the sample ought to include firms other than the listed firms.

6 References

Afza, T., & Nazir, M. (2007). Is it better to be aggressive or conservative in managing working capital? *Journal of Quality and Technology Management*, 3 (2), 11-21.

Afza, T., & Nazir, M. (2009). Impact of Aggressive Working Capital Management Policy on Firms' Profitability. *The IUP Journal of Applied Finance*, 15 (8), 19-27.

Akash, R., Khan, M I., Hamid, K., & Hussain, F. (2011). Working Capital Management and Risk- Return Trade off Hypothesis: (Empirical Evidence from Textile Sector of Pakistan). *European Journal of Economics, Finance and Administrative Sciences*, 40, 148-152.

Amarjit S. Gill Nahum Biger, (2013),"The impact of corporate governance on working capital management efficiency of American manufacturing firms", *Managerial Finance*, Vol. 39 Iss 2 pp. 116 - 132

Arnold, G. (2008). *Corporate financial management*. Fourth edition; Pearson education limited

Bana, A. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance*, 8 (2), 155-179.

Brealey, R.A., Myers, S.C., & Allen, F. (2011). *Corporate Finance: Global edition*. New York: McGraw-Hill/Irwin.

Chakraborty, S. K. (1973). Use of Operating Cycle Concept for Better Management of Working Capital. *Economic and Political Weekly*, Vol. 8, No. 34 (Aug. 25, 1973), pp. M69+M71+M73+M75-M76

Collins, G. W. (1946) "Analysis of Working Capital" *The Accounting Review*, Vol. 21, No. 4 (Oct., 1946), pp. 430-441. Published by: American Accounting Association

Deloof, Marc (2003). Does working capital management affect profitability of Belgium firms? *Journal of business Finance & Accounting*, 30 (3) & (4), 573-587

Eiteman, W. J. (1963). *Financial Aspects of Promotion, Essays on Business Finance*, Maestro Press, Ann Arbor.

Eljelly, A. (2004) Liquidity - profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14 (2), 48-61.

Hofmann, E., & Kotzab, H. (2010). A SUPPLY CHAIN-ORIENTED APPROACH OF WORKING CAPITAL MANAGEMENT. *Journal of business and logistics*, 31 (2) 305–330.

Hull, J. C., (2012). *Risk Management and Financial Institutions*. Third edition. Hoboken: John Wiley & Sons.

Kithii, J. N., (2008). The relationship between working capital Management and profitability of Companies listed at the NSE. *Unpublished MBA Research project*, University of Nairobi.

Lazaridis, I. & Tryfonidis, D., (2006). Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis* 19 (1): 26-35.

Losbichler, H. & Mahmoodl, F., (2012). Why working capital should matter to you. *Supply Chain Management Review*, 26-33

Maness, S.T., & Zietlow T. J., (2005). *Short-term financial management*. Third Edition: Thomson Southwest.

Mutungu, M. (2010). The relationship between working capital Management policies and financial performance of oil marketing firms in Kenya. *Unpublished MBA research project*. University of Nairobi.

Nyakundi, M. (2003). A survey of working capital management policies among public Companies in Kenya. *Unpublished MBA Research project*, University of Nairobi.

Ochieng, A. J. (2006). Relationship Between working capital of firms listed in NSE and the Economic activities in Kenya. *Unpublished MBA Research project*, University of Nairobi.

Ouma, P. (2001). Cash management approaches employed by companies quoted at the NSE. *Unpublished MBA Research project*, University of Nairobi.

Park, C. (1951). *The Accounting Review*, Vol. 26, No. 3, pp. 299-307

Park, C. and J WV Gladson. (1963). *Working Capital*, N Y, Macmillan, 1963.

Saghir A., Mehmood F. H., Hussain M. N. (2011). Working capital management and profitability: evidence from Pakistan firms, *interdisciplinary journal of contemporary research in business*, Vol 3, No 8, Dec 2011

Santos, J. A. C. (2001) Bank Capital Regulation in Contemporary Banking: A Review of Literature: *Financial Markets, Institutions and Instruments*, 10(2), 42-84.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*, Fifth edition: Financial times Apprentice Hall.

Teruel, P. J. G. & Solano P. M. (2007). "EFFECTS OF WORKING CAPITAL MANAGEMENT ON SME PROFITABILITY", *International Journal of Managerial Finance*, Vol. 3, No. 2, pp. 164-177, 2007.

Van Horne, J. C. & Wachowicz, J. M. (2000). *Fundamentals of Financial Management*, 11th Ed. Prentice Hall Inc.

Warrack, K. (2003). Statistics for management and economics, International student edition.

Waweru, C.G. (2011). The relationship between working capital Management and Value of Companies quoted at the NSE. *Unpublished MBA Research project*, University of Nairobi.

7 Appendices

VARIABLE	Agricultural industry	Energy and petroleum	Construction and allied	Commercial and services	Manufacturing and allied
C	46.18982	-93.10724	93.20748	109.5186	52.79539
BOARD COMMITTEES	1.025212	17.41920	12.50983	-26.52943	13.81119
BOARD MEETING	-0.753190	-5.348142	3.581776	3.061235	-4.529690
BOARD SIZE	0.553685	3.246435	-8.344930	2.255382	-2.433193

2 Average Collection Period Coefficients

INDUSTRY	Adjusted R-squared	Prob (F-statistic)
Agricultural industry	-0.352620	0.986768
Energy and petroleum	0.475112	0.027938
Construction and allied	0.089379	0.196823
Commercial and services	0.086139	0.297124
Manufacturing and allied	-0.004391	0.435339

3 Average Collection Period Statistics

VARIABLE	Agricultural industry	Energy and petroleum	Construction and allied	Commercial and services	Manufacturing and allied
C	55.55243	21.19615	110.8066	34.61007	123.1696
BOARD COMMITTEES	34.47162	14.00126	-5.883267	89.34975	30.10928
BOARD MEETING	7.753415	-2.290512	-0.040538	14.58368	-9.721097
BOARD SIZE	-9.896211	-1.885000	0.681056	-39.94046	-6.239924

4 Inventory Turnover in Days Coefficients

INDUSTRY	Adjusted R-squared	Prob (F-statistic)
Agricultural industry	0.453570	0.050638
Energy and petroleum	0.201063	0.088572
Construction and allied	-0.140031	0.959463
Commercial and services	0.735405	0.000862
Manufacturing and allied	-0.116306	0.702825

5 Inventory Turnover in Days Statistics

VARIABLE	Agricultural industry	Energy and petroleum	Construction and allied	Commercial and services	Manufacturing and allied
C	-63.09530	-111.9464	78.47597	263.6435	23.83450
BOARD COMMITTEES	11.62488	7.399377	0.479110	-24.16868	61.29098
BOARD MEETING	22.87316	-0.726209	3.019544	0.563340	-23.33731
BOARD SIZE	5.503198	17.70501	3.097354	-10.96386	1.768044

6 Average Payment Period Coefficients

INDUSTRY	Adjusted R-squared	Prob (F-statistic)
Agricultural industry	0.465809	0.046495
Energy and petroleum	0.710334	0.000037
Construction and allied	-0.082914	0.728047
Commercial and services	0.151500	0.215538
Manufacturing and allied	-0.017131	0.462459

7 Average Payment Period Statistics

VARIABLE	Agricultural industry	Energy and petroleum	Construction and allied	Commercial and services	Manufacturing and allied
C	117.9400	41.57956	115.2492	225.0789	143.2907
BOARD COMMITTEES	13.66362	21.49279	6.390664	131.4326	-2.423378
BOARD MEETING	-5.552572	-7.274713	1.325904	24.12327	0.167104
BOARD SIZE	-10.62801	-4.596448	-8.153736	-64.93598	-8.350531

8 Cash Conversion Cycle Analysis Coefficients

INDUSTRY	Adjusted R-squared	Prob (F-statistic)
Agricultural industry	0.384529	0.049029
Energy and petroleum	0.157702	0.129486
Construction and allied	0.087690	0.199844
Commercial and services	0.609357	0.005740
Manufacturing and allied	-0.090030	0.635008

9 Cash Conversion Cycle Analysis Statistics