THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND THE PROFITABILITY OF SMALL AND MEDIUM ENTERPRISES IN NAKURU MUNICIPALITY

BY

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DECLARATION

I declare that this research project is my original work and it has never been submitted anywhere for any academic award.

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

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DEDICATION

This Research paper is lovingly dedicated in memory of my beloved father, Charles Katiwa Muli who strived to give me the best, prepared me to face challenges with faith and humility. Although he is not here to give me strength and support I always feel his presence which motivates me to strive to achieve my goals in life.

May the Lord forgive him and make the paradise his permanent residence.

ABSTRACT

Small and Medium Enterprises play a great role in the development of any economy and mostly in the developing Countries. Efficient working capital management is an integral part of the overall firm's strategy to improving the firm's value. The objective of this research was to determine the relationship between working capital management and profitability of small and medium enterprises in Nakuru municipality.

The study selected sample of 61 small and medium enterprises for a period of five years (2006 -2010) with a total of 305 observations. The data for the study was collected from secondary sources (financial statements) and was analyzed using regression analysis and Pearson's correlation.

The results of the analysis indicate that there is a negative relationship between cash conversion cycle (as the main measure of working capital management) and profitability. A positive relationship between current ratio and profitability was noted as well as that of debt ratio and profitability. For the sales growth, evidence is positively related to profitability. This is consistent with often argument that sales growth is feature for future firm's profitability.

The results of the research show that in the small and medium enterprises studied there is a significant relation between working capital management and profitability. Owners and managers of these firms can therefore improve their profitability by reducing the cash conversion cycle.

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ABBREVIATIONS

ANOVA	-	Analysis of Variance
CBS	-	Central Bureau of Statistics
CCC	-	Cash Conversion Cycle
Co.	-	Company
CRA	-	Commission on Revenue Allocation
GDP	-	Gross Domestic Product
ICP	-	Inventory Conversion Period
Ltd.	-	Limited
Nkr	-	Nakuru
PCP	-	Payables Conversion Period
RCP	-	Receivables Conversion Period
ROA	-	Return on Assets
ROI	-	Return on Investment
SAPs	-	Structural Adjustment Programs
SMEs	-	Small and Medium Sized Enterprises
WC	-	Working Capital
WCM	-	Working Capital Management

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The growth of Small and Medium Size enterprises is very essential to the economies of countries. The success of the SMEs has a direct impact on the growth of emerging economies through their contribution to employment, foreign trade, direct foreign investment, social change and technological advancement in the industries (Acs and Preston, 2007).

An enterprise which has good profitability cannot suffer market failure because profitability makes an enterprise to have a big market share (Yao, 1988). Radas and Bozic (2009), stress on the importance of understanding the factors that determine the profitability of the SMEs. In the studies that were done to determine the success of SMEs in Croatia in 2004, the factors which influence profitability were found out to be; the market scope, the orientation of the firm to the market and the changes in managerial, marketing and strategic tactics.

The paper examined the relationship between working capital management (WCM) and the profitability of the SMEs in Nakuru Municipality. This research project consists of five sections which were dealt with as chapter one, two, three, four and five consisting of introduction, literature review, research methodology, data entry, analysis and presentation and summary, conclusions and recommendations respectively.

1.1.1 Working Capital Management

Sagner (2010) defines working capital (WC) as the difference between current assets and current liabilities. Traditionally, WC was viewed as a positive component in business operations. Higher current assets to current liabilities ratio was desired because the value of the WC could be used for paying debts. In modern times however, a new look at the working capital has been adopted where analysts see the WC as putting a drag on the financial performance of an enterprise.

Mathur (2007) has defined the major elements of WC as cash, the accounts receivable and the inventory. Cash is important in running the daily operations of a business enterprise. The inventory is very important in order to meet the needs of the buyers during a specific period of time. Accounts receivable is shown on the balance sheet as a current asset and it is defined as the debt that the clients of the business owe the enterprise.

Kumar (2001) gives three situations where the WC can be affected. An increase in WC components means there is an increase in the current assets such as stocks and debtors. A reduction in trade and creditors in general means that cash has been absorbed which leads to a reduction in WC of the firm. Changes in volumes, with other factors being held constant, results in changes in the WC value.

Different industries have different WC measures. These measures again vary in time for each industry (Filbeck and Krueger, 1986). The liquidity of a business is directly dependent on the WC. An understanding of WCM necessitates the knowledge of the WC ratios, the WC risks and the WC financing (Joseph, 2006).

The risks associated with the WC can make a business to become insolvent if not handled well. Overtrading is one of the WC risks. In such a situation, some businesses tend to do business far way beyond their capacity. Other risks include diversion, unforeseen contingencies and inadequate provision in costs of doing a project (Brigham and Ehrhardt2008).

The process of collecting the accounts receivable should be done in an efficient and expeditious way. The firms are encouraged to manage the accounts payable by paying on the last day of payment. Much as the accounts payable should be cleared on last payment day, it should always be done in such a way that it shouldn't hurt the image of the company. There should be monitoring the transactions that concern cash so as to prevent fraud (Filbeck and Krueger, 1986).

The financing of the WC can come from different sources as is with the financing of other activities of the business entity. Banks and short term credit institutions are the major external sources of financing to the WC. This is done through use of overdrafts, short terms loans, trade financing and asset financing (Filbeck and Krueger, 1986).

Use of overdraft involves an arrangement where an entity can overdraw from its current account up to an agreed limit with the bank. Short term loans are specific amount of money that has been extended to a business for a definite period of time. Trade financing is a whole range of instruments which the banking institutions form in order to control the trade and the manufacturing business. Banks can directly fund an asset in the WC instead of giving the liquid cash to an institution to buy the asset (Kumar, 2001).

1.1.2 Profitability

Hawkins and Turner (2008) define profitability as the financial measurements that are used in determination of the ability of business to generate earnings when compared to the expenses and other relevant costs during a specific period of time. According to (Chiang, Novazzi, and Gerab 2011), return on sales, return on asset (ROA), earnings per share ratio and return on equity ratios are some of the parameters that can be put to use while measuring profitability of a business establishment.

1.1.3 Small and Medium-Sized Enterprises

Small and Medium-Sized enterprises have proven to be of great importance for the economic growth of a country. Hillary (2000) gives the definition of the Small and Medium Sized Enterprises as those business enterprises that employ less than 250 people in their workforce. According to the European Commission (2009) definition, the small sized enterprise should have a workforce of less than 50 employees and a balance sheet total of less than 10 million Euros. The medium sized enterprise should have a workforce of less than 250 people and a balance sheet total of less than 43 million Euros.

Migiro and Wallis (2006) give the definition of SMEs in the Kenyan context in terms of the employee head count. Firms that employ less than 5 employees are referred to as micro enterprises. The firms which have 5 to 49 workers are classified as small sized enterprises. Medium scale enterprises are those which employ from 50 to 99 employees. Any firm that employs more than 100 employees is referred to as a large

scale enterprise. For the purposes of this study, the Kenyan definition of the SMEs will be adopted.

1.1.4 Determinants of Profitability

Goddard et al., (2006) states that firms with a higher liquidity tent to me more profitable than those whose liquidity are low. There is a positive relationship between market share and profitability. Bennenbroek and Harris (1995), pointed out that firms can benefit from higher than expected profits if they operate on high level production efficiency and if the market pressures are low. Production efficiency, costs and losses are given as the major factors that influence profitability of the manufacturing sectors studied in New Zealand.

Production efficiency can be used interchangeably with the production rate (Fare and Grosskopf, 1985). According to Longenecker, Moore, and Petty (2005), losses can result from production issues, health, safety and environment losses and material damages. Reduced availability and low quality are the main contributing factors to production losses. Machine breakdown, unplanned maintenance and changeover of production or of employees increase the unavailability. Health, safety and environment losses result from damages that may be paid as a result of lawsuits by the employees. Damaged equipment may affect the profitability of a company because it has a direct effect on investment costs and the production rate.

The relationship between revenue and expenditure is the one that determines the profits that an enterprise can make. Oliver (2000) explains that management of costs determines the profitability of an enterprise. The costs are divided into investment

costs, operating costs and maintenance costs. In order to reduce maintenance costs, more reliable equipment for production is required which efficient monitoring of the processes.

The operating costs are necessary in order to have the personnel who are running the production process (Elton, Gruber, Brown, and Goetzman, 2009).

WCM has a significant effect on the profitability of any enterprise. The major components of WC which are the cash conversion cycle (CCC), the accounts receivable, the accounts payable and inventory play a major role in determining the net profitability of business. The WC has to be optimized so as to avoid situations where cash lies idly or where a business gets constrained in financing its daily operations (Lazaridis and Tryfonidis2006).

1.1.5 Theoretical Relationship between Working Capital Management and Profitability

The relationship between profitability and WCM can be studied using different variables. Chiang et al., (2011) has analyzed two situations where one is a WC intensive type of management and the other is a fixed capital intensive management. The factors in WCM which affect profitability include the cash conversion efficiency, debt ratio, days of working capital, days of receivables and days of inventory.

Lazaridis and Tryfonidis (2006) opine that there is statistical significance between the WCM and profitability of business enterprises. Correct handling of the CCC and

keeping the accounts receivable, accounts payable and the inventory at the optimal is one of the ways which managers can improve on the profitability of their enterprises.

Chiang et al., (2011) confirms that there is a direct relationship between WCM and profitability. There is statistical evidence that days inventory has a negative relationship with the return on sales. The debt ratio affects the ROA while days of the WC have an effect on return on sales. Quayyum (2012) found out that there existed, statistically, a relationship between WCM and the profitability of firms.

1.1.6 SMEs in Nakuru Municipality

The SMEs in Kenya contribute to 20 % of the gross domestic product (GDP) and offer employment to the 80 % of the workforce that is in active employment in the country. Majority of the SMEs in Kenya has an annual turnover of between 100 million to 300 million shillings. In a research done by Synovate and reported by SME Network (2012), of the top 100 SMEs in Kenya, the first 11 have an annual turnover of between 900 million and 1 billion. In the same report, it is estimated that the total turnover of the top 247 SMEs is equivalent to 10 % 0f the country's national budget. CBS (1999), in its baseline survey estimated that the country had a total of 1.3 million micro, small and medium sized enterprises and they offered employment to more than 2.3 million people. In the year 2002, the SME offered employment to 5,086,400 people, an improvement from 4,624,400 people who were employed by the same sector in 2001 (Migiro and Wallis, 2006).

CRA (2012) estimates that the population of Nakuru Municipality is 540,534 people by projection with poverty rate of 40.1 %. The County ranks fifth in population and

twelfth in poverty rate at the national level. Practical Action (2012) found out that most of the small and medium sized activities in Nakuru Municipality are found in formal and in informal settlements. The running of the SMEs includes the low income earners and the middle income earners.

The SMEs in Nakuru Municipality are said to face obstacles in their operations. Practical Action (2012) analyses that the structural adjustment programs (SAPs) whose aim was to provide the cushion against the shocks occasioned by the liberalization of the economy and the free market have failed to assist in improvement of the SMEs in the county. The research done by this company brought out lack of proper access to sources of capital, prohibitive business regulations, lack of effective marketing strategies and inadequate business management skills as the major constrains to growth of the enterprises.

1.2 Research Problem

The sustainability of SMEs in any economy is very important. Growth of SMEs has a direct positive impact on the growth of economies, especially those which are in the development stage (Acs and Preston, 2007). The SMEs in Kenya contribute to 20 % of the GDP, making them an essential component of the Kenyan economy (CBS, 1999). Successful running of SMEs in Kenya has been affected with many problems, with studies showing that 52 % of them started annually eventually fail and only 48 % operate successfully (Bowen, Morara and Muriithi, 2009).

Inadequate management skills have been cited as one of the reasons that cause the slump in growth of the SMEs in Nakuru Municipality. In an effort to help the growth

of the SMEs in Nakuru Municipality, non-governmental and governmental organizations have taken steps in assisting to set up other enterprises and fortify the existing ones through training and research. This training is generally focused on management of the SMEs, the SME constitutions and record keeping (Practical Action, 2012).

Okwena, Okioma and Onsongo (2010) carried out a study to establish the relationship between effective book keeping and financial performance of SMEs in Kisii County. This study found out that effective book keeping which include keeping of business receipts, setting up and posting entry to the ledger and creating of basic financial receipts enhanced the financial performance of the SMEs under study. This study didn't look at the management aspect of the working capital versus the profitability of the SMEs.

Martizez-Solano and Garcia-Teruel (2006) carried out a study to establish the relationship between working capital management and profitability of SMEs in Spain. This study established that there was a positive relationship between cash conversion cycle, accounts receivable and inventory days and the profitability of the firms. The study came up with enough literature linking working capital management and profitability. However, the market dynamics in Spain cannot be wholesomely translated to the situation in Kenya and Nakuru Municipality in particular.

Currently, there is no research which has been conducted to establish the empirical relationship between the management of SMEs working capital and their profitability in Nakuru Municipality. The literature available about the effects of the WCM and

profitability of SMEs in the Kenyan context and the Nakuru Municipality context is scarce while that from international sources cannot be translated to Kenyan problem because of the different nature of markets in different countries. This research proposal seeks to find the existence of empirical evidence that links the WCM to profitability of the SMEs in Nakuru Municipality. An understanding of how to improve the profitability of the enterprises in Nakuru is important. Nakuru is the headquarters of the Nakuru County and a major agricultural hub in the Kenyan farming economy.

This research proposal seeks to carry out an empirical study whose results will help to find if there is of empirical evidence that links the working capital management to profitability of the SMEs in Nakuru Municipality. The research study will therefore seek to answer the question:

Is there a relationship between working capital management and the profitability of the SMEs in Nakuru Municipality?

1.3 Objective of the Study

To determine the relationship between working capital management and the profitability of small and medium sized enterprises within Nakuru Municipality.

1.3.1 Specific Objectives

i. To determine the relationship between cash conversion cycle and the profitability of SMEs in Nakuru Municipality.

ii. To establish the relationship between current ratio and the profitability of SMEs in Nakuru Municipality.

iii. To find out the relationship between debt ratio and the profitability of SMEs in Nakuru Municipality.

iv. To determine the relationship between sales growth and the profitability of SMEs in Nakuru Municipality.

1.4 Value of the Study

This section evaluates the importance of the study to the mentioned stakeholders.

The interest of the owners and managers of a business enterprise is to increase on the value of the money invested. Empirical results that explain the relationship between the WCM and the profitability of the enterprises will help the owners and managers of the SMEs when they are making management decisions that involve working capital.

The banks stay in business by offering loans, overdrafts, assets financing services and trade financing. The evaluation of risks takes into consideration the ability of the enterprise being financed to pay back the loan. The banks will be in a position to predict the profitability of an enterprise by assessing the way it manages its WC.

The results of this study will be instrumental to the government because the government involves itself in helping to uplift the SMEs through the SAPs and other economic stimulus plans. By having a clear link between working capital management and profitability of the SMEs, the government agencies will make informed decisions on the kind of financial help they can extent to the SMEs in other parts of the country.

Researchers who wish to do further research on WCM of the SMEs will find the results of this study useful. This is as opposed to available literature whose case study is based on enterprises from other countries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will do a review of past studies about WCM and how it influences the profitability of organizations. It will have an overview of the concept of working capital management, strategies and policies, the relationship between WC and profitability and the review of past studies that have been done about WCM and profitability. The empirical evidence will explain the findings of the past studies that have been done about the subject (Lazaridis and Tryfonidis, 2006).

2.2 Theoretical Review

The profitability of the organizations relies on how their management deals with the working capital and investment capital. There are three working capital policies that working capital managers can adopt. They are the conservative policy, the moderate policy and the aggressive policy. In the conservative policy, there is a high level of investment in current assets, a high support any level of sales and production and there is a high liquidity level. The managers with this policy avoid short-term financing to reduce risk, although this decreases the potential for creating maximum value (Andrew and Ghallager, 2007).

In the aggressive policy, there is low level of investment with more short-term financing is used to finance current assets. The management supports low level of production & sales. Firm risk increases, due to the risk of fluctuating interest rates, but the potential for higher returns increases because of the generally low-cost financing. This approach tries to balance risk and return concerns. Temporary current

assets that are only going to be on the balance sheet for a short time are financed using short-term debt and current liabilities. Permanent current assets and long-term fixed assets that are going to be on the balance sheet for a long time are financed from long-term debt and equity sources (Baker and Powell, 2005).

2.3 The Concept of Working Capital Management

Mathur (2007) defines WC as the amount of capital that is readily available to an organization. Determination of the WC in a given corporate is done by finding the difference between sources of cash or those which can be readily converted into cash and the cash requirements. The sources which are either in cash or which can readily be converted into cash are called the current assets while the short term requirements of cash are termed as current liabilities.

WCM involves the decisions that are used to operate the gross current assets. The current assets in an organization comprise of cash, accounts receivable, bills receivable and inventory. Theorists rate the effective management and operation of the components of the WC in any business concern as one of the most important and vital determinant of business success (Mathur 2007).

Sagner (2010) likewise defines WCM in terms of current assets and current liabilities. The author defines WCM as the combination of policies and techniques for management of cash, cash equivalent, inventory, debtors and short term financing. This management should be done with an aim of ensuring that the business returns are acceptable.

CCC, the inventory management, debtor management and short term financing are the areas of concern which encompass the aspect of WCM. Prudent management of the mentioned aspects ensures that a business entity has enough cash flows to operate, to service long term debts and maturing short term debts and to meet operational expenses (Brigham and Ehrhardt, 2008). These issues can be evaluated in separate parts.

Cash Conversion Cycle: Brigham and Houston (2007) define the CCC as the time span between disbursing of cash and collecting of cash by the firm. This is used as a measure of determining how long a firm will be short of cash if it decided to increase its investments in resources for purposes of increasing the customer sales. This is arithmetically determined by summing up the receivables conversion period (RCP) and the inventory conversion period (ICP) then subtracting the payables conversion period (PCP).

$$CCC = ICP + RCP - PCP$$

ICP = (Average inventory × 365) ÷ Cost of Goods Sold

RCP = (Average Accounts Receivable × 365) ÷ Credit Sales

PCP = (Average Account Payable × 365) ÷ Purchases

According to Baker and Powell (2005), CCC can be looked at as the length of time that the cash of the firm is tied up in current assets. The receivables conversion period, which is an important element of the cycle, is the length of time that a firm needs to collect cash from a credit sale. The ICP is the length of time needed by the firm in order to acquire and sell inventory. Accounts payable payment period is the

amount of time between purchase of materials and labor that are absorbed into inventory and the payment of cash for these expenses.

Inventory Management: This is the management of materials in and out of an inventory with an aim of finding the optimum levels of operation that will help the firm avoid unnecessary inventory costs and avoid running short of materials needed for daily operations. An effective and efficient inventory management will always seek to control and minimize the costs that are associated with the inventory. These costs are tied in two aspects; the tax that is generated on the cumulative value of the inventory and the cost of keeping a higher volume of goods (Toomey, 2003).

Sagner (2010) points out three important elements that should be kept in mind when dealing with inventory management. The first element has to do with time. In inventory management, it is important to understand the time that the supplier will take to process and deliver an order to the business. Apart from delivery of the materials to the inventory, it is again essential to establish how long the material will take before being moved out of the inventory. Understanding of these lead times assists in proper management of the inventory. An efficient monitoring of the lead times enhances smooth running of operations.

Determination and management of buffer stock is another essential component of inventory management. The buffer stock is the additional number of units above those ones required for operations. Keeping buffer stock acts as a shock absorber should some of the assigned units fail to operate. In such circumstances, production cannot be interrupted or come to a stop. The inventory management is not limited to black

box treatment of materials in and materials out. When the materials are being processed from their time of entry to the time of being converted into finished products, they should be tracked. It is vital to track the work in progress so as to know the amount of material to be ordered for the inventory (Sagner, 2010).

Müller, M (2011) opines that keeping of records is a very important part of inventory management. In the records, there should be updating of the finished goods to the inventory totals and updating of the goods that have been shipped to the buyers. This updated record keeping is important because it gives the sales team up-to-date information about the goods that are ready for sale so that they can make preparations for shipment.

Debtor Management: An efficient debt management process results in efficient managing of the WC. Debtor management requires establishment of a credit control policy that should be adhered to by the finance and sales teams in any business concern. The main areas of interest in debtor management include the collection plan, invoicing, order and fulfillment and dispute management (Raffer, 2010).

A good invoicing system should make sure that the invoice is dispatched with delivery of goods. This invoice should be in clear and simple terms for easy understanding; its procedure should be made smooth in a way that those who process it should not encounter obstacles. An aged debtors' analysis is important when dealing with collection from the debtors. This analysis lists all invoices by the customers and their due date of payment (Brigham and Ehrhardt, 2008).

Even though customer acquisition and retention is one of the major objectives that any business should strive to achieve, it is important to screen the credit worthiness of the customers while engaging into business deals. Debtor management requires that companies should make a tradeoff between acquiring customers and minimizing the amount of bad debts. When entering into deals, contracts that stipulate terms and conditions should be put in place. This makes payments of what is owed to be enforceable by the law (Finnerty and Emery, 2001).

Collection of debts should be done at the earliest time possible. This time is defined by the average collection period. This is the average period that a firm takes to collect money owed to it by the debtors. A company which gives one month credit should collect its debt within 45 days. The debtor collection period ratio is determined by dividing the amount of money owed to the company by the annual sales on credit and multiplying the result by 365 days. In order to increase the debt collection efficiency, authors and experts stress on the importance of developing good communication with the customers. This puts one on the priority list of the customer when making the payments (Finnerty and Emery, 2001).

Debtor collection period ratio = (Amount owed by traders ÷ Annual sales on credit) × 365

Short Term Financing: Shim and Siegel (2008) define short term financing as the loan acquired by organizations with a payment period of less than one year. For a WC of an organization to meet its functions, the WC managers should be well equipped with knowledge on how to acquire the short term finances. Costs, risks, liquidity and

flexibility are some of the factors that are considered when choosing this type of financing.

The short term financing is given in terms of commercial papers, trade credit, short term bank loans and financing for receivables and inventories. This financing is used to facilitate additional WC, to acquire current assets such as receivables and inventory and can be used to provide interim financing of long term projects until when the long term finances are acquired. Acquisition of short terms finances is easy because the processes are simple. However, this type of financing can hamper small businesses because it is vulnerable to interest rate fluctuation. Such changes in interest rates have telling effects on an organization which has problems with WC (Hawkins et al, 2008).

Andrew and Gallagher (2006) states that short term financing has lower interest rates as compared to long term financing. For this reason, companies with a drive towards profitability will always opt to go for short term financing and lower the cost of capital. Commercial papers are only limited to well establish firms. Small and medium sized firms can either get the short term financing through short term loans or trade credits. In trade credits, the firms can delay payments to the suppliers.

Short term loans from the banks can be in terms of self-liquidating loans or a line of credit. Self-liquidating loans are arrangements where the loan obtained is used to buy assets which shall generate revenue that will be used to repay it. The line of borrowing is a limit of borrowing a bank may set for the firm (Andrew and Gallagher, 2006). SMEs can use the self-liquidating arrangement to get loans and boost their inventory.

2.4 Working Capital Management and Profitability

According to Shin and Soenen (1998), the size of the WC has an impact on the profitability of a firm. For bigger profits, it means a company has to take bigger risks. The big risk in the WCM involves reducing the size of the WC in relation to the sales. If a business has interest in increasing its liquidity, it will increase the level of the WC which in turn reduces the sales volume. A reduction in sales volume reduces profitability. A company has to therefore make a balance between risk and profitability when managing the WC.

Proper management of WC involves the efficient operations and monitoring of the current assets in a firm and is instrumental to its profitability. According to Van Horne and Wachowicz (2004), manufacturing firms have half of their total assets as current assets while for distribution firms, the fraction is even higher. Excessive level of the current assets can result in minimal returns for a company. Low levels of current assets can result in low liquidity and stock outs thus disrupting smooth operations. A disruption in operations will lower the volumes of sales thus lowering profitability.

2.5 Empirical Studies

Empirical studies have been done to establish the relationship between WCM and the profitability of the SMEs. Al- Mwala (2012) did a survey on the WCM policies and profitability. In his findings, it was discovered that firms which have an aggressive investment policy have a negative result on profitability and overall value of the firm. A conservative investment policy has a positive impact on the profitability of the firm. In conservative investment policy, the firms studied had a minimized ratio of current

assets to total assets. The firms which pursued an aggressive policy have a higher ratio of current liabilities to total liabilities.

Raheman and Nasr (2007) did a study in Karachi to establish relationship between profitability of enterprises in the cities and the components on the WC. In the study, the CCC, the average collection period, the inventory turnover period and the current ratio were studied. A negative relationship between these variables and firms net operating profitability was observed. This means when the CCC is increased, the firm's profitability will be decreased. The level of liquidity of the firm had a negative relationship with the profitability.

Nazir and Afza (2009) carried out an investigation to determine the policies pitting aggressiveness against conservative investment. The study showed negative relationship between firms financing policies and profitability. In their findings, it was established that firms which adopt an aggressive investment policy will have a lower rate of return as compared to firms which have a conservative investment policy.

Ochieng (2000) did a study on the effects of WC of listed firms at the Nairobi Stock Exchange and the economic activities in Kenya found out that the level of liquidity of firms as measure by use of current and quick ratios increases the economic expansion of the firms. Economic expansion was linked to the growth in returns of the firms which has raised the level of the liquidity.

According to Kyalo (2011), WCM policies are very important instruments of success in business establishments. He suggests that profitability is very important in firms

operations and this profitability can be enhanced by prudent management of the WC. Efficient management of the WC will enhance the firm's growth in market share, its progress in production and industry life cycles.

Nyakundi (2003) observed that most of the public companies in Kenya pursue the aggressive WCM policy. This, the author observes, is due to the high cost of long term funds in Kenya which is estimated to be for 5 years. Management of most firms tends to use short term sources of funds which carry minimal credit costs. The firms again avoid using equity to raise funds because of the associated floatation costs and the expectations of dividends by the shareholders at the end of the accounting year.

Wanjohi (2011) in his studies about the profitability of insurance companies in Kenya in relation to WCM found a relationship between the two. In his analysis, a positive relationship was drawn between conservative policies of WCM and profitability. The study showed that an aggressive policy in WCM increases risks which in turn lead to losses.

A study which was done on the manufacturing firms of Kenya to reveal the relationship between WCM and profitability of the firms confirmed existence of a relationship between the two variables. In the analysis of the findings of the study, emphasize was laid on the liquidity position. Here, resources should be deployed to the WC in order to maintain the optimum liquidity position and get optimum returns without venturing into too much risk (Kweri, 2011).

2.6 Conclusion

The relevance of growth of SMEs in developing countries has been accepted in business and academic circles (Acs and Preston, 2007). The growth of these enterprises has been attributed to its profitability. The research done on profitability of most enterprises, large scale, medium scale and small scale find a link between the management of WC and profitability of businesses (Lazaridis and Tryfonidis, 2006). Such studies have concentrated on various elements of WC and profitability in businesses of different concerns.

These studies are useful because they provide empirical evidence that links the WCM policies and the profitability that is associated with each policy. This empirical evidence forms the basis of literature which is a point of reference by policy makers, governmental and non-governmental organizations and investors. The literature provided in this section is evident enough that a strong correlation exists between WCM and net operating profitability.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is the analysis of the methods, principles and rules that a researcher applies while carrying out a research (Mbugua, 2010). In this chapter, there is a discussion of the methodology that was used in carrying out this study. The chapter has the research design, the target population, the sample size and the sampling methods, data collection methods, the data analysis and the model. The methodology used in this study sought to find out the relationship between the working capital management of SMEs within Nakuru Municipality and their net operating profitability.

3.2 Research Design

The research used descriptive research design. Descriptive research design is the type of research where the researcher describes the status of events as it is. This research involved surveys and other fact finding enquires and reported events as they are. In this type of design, the researcher has no control over the variables (Mbugua, 2010).

The design was selected because the data collected is of the past occurrence of events and the researcher was interested in collecting the information and interpreting it as it is on the ground. Descriptive design method is useful when one wants to collect data on phenomena that cannot be directly observed. This allows the collection of a large amount of data from a sizeable population in a highly effective, economical and easy way.

3.3 Target Population

The target population for the research was the SMEs within Nakuru Municipality. The target centered on the 546 SMEs within Nakuru Municipality. This comprises of the SMEs involved in general trading, manufacturing and those involved in health care services within Nakuru Municipality. Because of the nature of their businesses, SMEs in general service provision, financial services, education and hospitality industries were not considered in this study. This target group was sufficient because it encompassed all the aspects that relate WCM and profitability of the SMEs. The objective stated in the study was met because the SMEs within the Municipality will be reached out. The population studied was restricted to those SMEs within Nakuru Municipality.

3.4 Sample Size

A sample is a collection of observations representing only a portion of the population. The sampling used Yamane's Formula which states that:

$n= N \div [1 + N (e)^{2}]$ where n is the sample size, N is population and e is margin of error, 0.12.

$n= 546 \div [1+ 546 (0.12)^{2}] = 61.6086$

61 SMEs were sampled by use of stratified random sampling technique. This technique was carried out in two stages. The population was first partitioned into sub populations. These sub populations took the strata of business categories in Nakuru Municipality. The elements were then selected from each stratum by use of simple random sampling.

The study concentrated on a five year period performance of the SMEs in Nakuru Municipality between 2006 and 2010.

3.5 Data and Data Collection Methods

The study used secondary data. In this data, the researcher used of existing records to gather the required information on CCC, ICP, RCP, PCP, current ratio, debt ratio and sales growth for research analysis. This data was collected from the financial statements of the SMEs within Nakuru Municipality as provided by Kenya Revenue Authority, Nakuru branch.

3.6 Data Analysis

Data analysis involved organizing, accounting for and explaining the data. This analysis sought to make sense out of the observed patterns, categories and regularities (Gay, 1992). The data collected went through a thorough examination and was checked for completeness and comprehensibility. The quantitative data was analyzed using descriptive and inferential statistics.

Descriptive statistics was in terms of mean and standard deviation. The inferential statistics was used in order to generalize results from the sample population and it employed use of regression analysis. The data was then coded and entered into the statistical package for social science (SPSS) version 17 for analysis. This package is good in organizing and summarizing the data by use of descriptive statistics such as tables.

3.6.1 Empirical Model

This study employed an empirical model that relates the factors of the working capital management with net operating profitability of the SMEs. The empirical model which relates returns on investment and factors of WC is given by the regression analysis as used by Shin & Soenon (1998).

$$\text{Profitability} = b_0 + b_1 CCC_t + b_2 \text{Current Ratio}_t + b_3 \text{Debt Ratio}_t + b_4 \text{Sales Growth}_t + \varepsilon$$

To analyze the relationship between WCM and profitability, profitability was operationalized as ROA. ROA is defined as:

Return of Assets = Operating profit ÷ Total Assets.

It was counted yearly for each SME.

The CCC is the comprehensive measure of WCM and wasmeasured as follows:

CCC = ICP + RCP - PCP

The components of CCC were measured as follows each counted yearly for each firm.

ICP = (Average inventory × 365) ÷ Cost of Goods Sold

RCP = (Average Accounts Receivable × 365) ÷ Credit Sales

PCP = (Average Account Payable × 365) ÷ Purchases

Current Ratio is one of the independent variables and is used as a traditional measure of firm's liquidity. It is defined as current assets divided by current liabilities.

The debt ratio and the growth in firm sales are the control variables.

Debt ratio was used as a proxy for leverage and is computed by dividing the total debt over total asset. Finally, sales growth was used as a control measure and was calculated as (this year's sales minus previous year's sales) ÷ previous year's sales).

ε is the error term.

b_0, b_1, b_2, b_3 and b_4 are sensitivities that are associated with every variable being measured.

The difference between working capital during different years was found and the variation tested with the help of the most popular chi-square test at 5% level of significance.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data collected from secondary sources on an annual basis between the periods of 2006 to 2010. The data was divided into five sections that covered the objective of the study i.e. Return on Assets (ROA), Cash Conversion Cycle (CCC), debt ratio, current ratio and sales growth rate. The data was based on financial statements of a sample of 61 small and medium sized enterprises within Nakuru Municipality.

4.2 Descriptive Statistics

Descriptive analysis shows the average and standard deviation of the different variables of interest in the study. It also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable can achieve. Table 4.1.1 presents descriptive statistics for 61 small and medium sized enterprises within Nakuru Municipality for a period of five years from 2006 to 2010 indicating a total 305 observations.

Table 4.1.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Profitability (ROA)	305	-.6696	.5194	.039734	.1042031
CCC	305	-1036.4288	856.9327	27.348261	134.5935695
Current Ratio	305	.0727	10.1554	1.283925	1.2648975
Debt Ratio	305	-1.4152	12.9959	.840657	1.0877155
Sales Growth	305	-14.1810	1.0000	-.011129	.9662891
Valid N (listwise)	305				

Source: Calculations based on annual reports of SMEs from 2006-2010

4.3 Regression analysis

The research study wanted to determine the relationship between working capital management and the profitability of small and medium sized enterprises within Nakuru Municipality. The research findings indicated that there was a significant positive relationship (R= 0.438) between the working capital management and the profitability. The study also revealed that 19.2 % of small and medium sized enterprises' profitability can be explained by working capital management. The findings are as shown in the table 4.1.2 below

4.1.2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.438[a]	.192	.181	.0943084

Source: Research Data 2012

It was further established that for a 1- point increase in the independent variables, profitability was predicted to increase by 3.301 as shown in table 4.1.3 below. At 95% confidence level, the variables together produce statistically significant values for this study (high t-values, $p < 0.05$) hence could be relied upon to explain profitability of small and medium sized enterprises within Nakuru Municipality. The findings are as shown in the table 4.1.3 below

Table 4.1.3 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.633	4	.158	17.784	.000[a]
	Residual	2.668	300	.009		
	Total	3.301	304			

Source: Research Data 2012

Moreover, a negative effect was reported on Cash Conversion Cycle (β_1= -0.392 while a positive effect was reported on current ratio, debt ratio and sales growth (β_2=0.282, β_3=0. 048 and β_4=0.297) respectively as shown in table 4.1.4 below.

Table 4.1.4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.015	.010		1.544	.124
	CCC	.000	.000	-.392	-6.938	.000
	Current Ratio	.023	.005	.282	5.053	.000
	Debt Ratio	.005	.005	.048	.892	.373
	Sales Growth	.032	.006	.297	5.485	.000

Source: Research Data 2012

The equation for the regression model can thereforebe expressed as:

Profitability = $b_0 + b_1 CCC_t + b_2$Current Ratio$_t + b_3$Debt Ratio$_t + b_4$Sales Growth$_t + \acute{\varepsilon}$

Profitability = 3.301-0.392CCC_t + 0.282 Current Ratio$_t$ + 0. 048Debt Ratio$_t$ + 0.297 Sales Growth$_t$ +έ

Where:έ is the error term.

b_0 is the constant

b_1, b_2, b_3 and b_4 are co-efficients that are associated with independent variables.

Table 4.1.5 Correlations

		Profitability (ROA)	CCC	Current Ratio	Debt Ratio	Sales Growth
Profitability (ROA)	Pearson Correlation	1.000	-.236**	.155**	.008	.185**
	Sig. (2-tailed)		.000	.007	.892	.001
	N	305	305	305	305	305
CCC	Pearson Correlation	-.236**	1.000	.283**	-.090	.270**
	Sig. (2-tailed)	.000		.000	.118	.000
	N	305	305	305	305	305
Current Ratio	Pearson Correlation	.155**	.283**	1.000	-.235**	-.017
	Sig. (2-tailed)	.007	.000		.000	.764
	N	305	305	305	305	305
Debt Ratio	Pearson Correlation	.008	-.090	-.235**	1.000	-.030
	Sig. (2-tailed)	.892	.118	.000		.606
	N	305	305	305	305	305
Sales Growth	Pearson Correlation	.185**	.270**	-.017	-.030	1.000
	Sig. (2-tailed)	.001	.000	.764	.606	
	N	305	305	305	305	305

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

Source: Research Data 2012

At 95% confidence level, there was a significant positive relationship between profitability and sales growth while there was a negative relationship between profitability and Cash Conversion Cycle (CCC), as shown by (high t-values, $p < 0.05$) in table 4.1.5 above. However, the relationship between profitability and current ratio and debt ratio was insignificant.

4.4 Summary and interpretation of findings

From the study findings it would be safe to conclude that the intended sample size was achieved. From the research findings in table 4.1.1, the mean value of Profitability (ROA) ratio was 3.97 % and standard deviation was 10.42 %. It meant that the small and medium sized enterprises under consideration maintained a profitability margin of 3.97 % and it could have deviated 10.42 % to both sides. Maximum value for profitability was 51.94 % while the minimum value was -66.96 %. In the same way Cash Conversion Cycle (CCC) that was used to measure working capital management had a mean of 27 days and a standard deviation of 134.59 days. It meant that the small and medium sized enterprises under consideration maintained a CCC of 27 days and it could have deviated 134.59 days to both sides. Maximum value for CCC was 856 days while the minimum was -1036 days.

Moreover, current ratio variable had a mean of 128.39 % which deviated 126.48 % in either side. Maximum value for current ratio was 1015.5 % while the minimum was 7.27 %. It was also noted that debt ratio had a mean of 84.07 % which could have deviated by 108.77 % to either side. Maximum value for debt ratio was 1299.59 % while the minimum was -141.52 %. The mean for sales growth was -1.112% which could have deviated by 96.63 % to either side. Maximum value for sales growth was 100.0 % while the minimum was 1418.1 %

Working capital was found to have a significant positive relationship ($R=0.438^{a}$) with profitability. The conclusion was supported by the results the various descriptive and inferential statistics even though the study variables were only found to explain 19.2 % profitability on of small and medium sized enterprises within Nakuru Municipality.

The data was generally statistically significant to be relied upon since $p < 0.05$ as indicated in table 4.1.3

It was further established that the different factors of working capital had varying effect on profitability. This was demonstrated by table 4.1.4 where sales growth had the highest positive effect of 29.7 % followed by current ratio with an effect of 28.2 %. However, debt ratio was found to have the least positive effect of 4.8 %. CCC was found to have a negative effect of -39.2 %.

There was a significant positive relationship between profitability and sales growth while there was a negative significant relationship between profitability and CCC as shown by (high t-values, $p < 0.05$) in table 4.1.5. However, the relationship between profitability and current ratio and debt ratio was insignificant.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study was basically intended to open eyes to various users. Manysmall and medium sized enterprises within Nakuru Municipality make a lot of efforts to borrow loans but most often do not get considered by lenders. Therefore the intended beneficiaries of this study were the commercial banks, the government and the researchers.

The research study utilized secondary data. This was extracted from the financial statements of 61 sampled small and medium sized enterprises within Nakuru Municipalityfor the period between the years 2006 to the year 2010. The reason for restricting the study to this period was that it was the latest data for investigation available for this period.

In summary, the targeted sample was achieved. The aim of the study was to determine the relationship between working capital management and the profitability of small and medium sized enterprises within Nakuru Municipality. The discussions and presentations were guided by this objective of the study. It was established that working capital management was positively related to profitability.

5.2 Conclusions

From the study findings it can be concluded that the intended sample size was achieved. From the research findings in table 4.1.1, the mean value of Profitability (ROA) ratio was 3.97 % and standard deviation was 10.42 %. Cash Conversion Cycle

(CCC) that was used to measure working capital management had a mean of 27 days and a standard deviation of 134.59 days. Moreover, current ratio variable had a mean of 128.39 % which deviated 126.48 % in either side while the mean for sales growth was -1.112% which could have deviated by 96.63 % to either side

Working capital was found to have a significant positive relationship with profitability. The conclusion was supported by the results the various descriptive and inferential statistics even though the study variables were only found to explain 19.2 % profitability on of small and medium sized enterprises within Nakuru Municipality.

The different measures of working capital management had varying effect on profitability. Sales growth had the highest positive effect of 29.7 % followed by current ratio with an effect of 28.2 % the. However, debt ratio was found to have the least positive effect of 4.8 %. Cash Conversion Cycle (CCC) was found to have a negative effect of -39.2 %.

There was a significant positive relationship between profitability and sales growth while there was a negative significant relationship between profitability and Cash Conversion Cycle (CCC) as shown by (high t-values, $p < 0.05$) in table 4.1.5. However, the relationship between profitability and current ratio and debt ratio was insignificant.

5.3 Recommendations

From the findings, it was established that the variables that were used to measure working capital management were not sufficient enough to explain profitability of

small and medium sized enterprises within Nakuru Municipality. It can be recommended that lenders should come up with a broad scope to cover all working capital management that can sufficiently explain profitability of small and medium sized enterprises within Nakuru Municipality. This is because the current working capital management measures were only able to explain 5.30% of profitability of small and medium sized enterprises within Nakuru Municipality. In addition in the future, information from sales growth and Cash Conversion Cycle (CCC) should be relied upon when determining profitability they were found to have significant impact on profitability.

5.4 Limitations of the study

The researcher encountered quite a number of challenges related to the research and most particularly during the process of data collection. Due to inadequate resources, the researcher conducted this research under constraints of finances and therefore collected data of small and medium sized enterprises within Nakuru Municipality. Time allocated for the study was insufficient while holding a full time job and studying part time. This was encountered during the collection of material as well as the data to see the study success. However the researcher tried to conduct the study within the time frame as specified.

5.5 Suggestions for Further Studies

Arising from this study, the following directions for future research in Finance were recommended as follows: First, this study focused on small and medium sized enterprises within Nakuru Municipality and therefore, generalizations cannot

adequately extend to other small and medium sized enterprises outside Nakuru Municipality. Based on this fact among others, it is therefore, recommended that a broad based study covering all small and medium sized enterprises in all major municipalities/towns be done to find out the relationship between working capital management and profitability

Secondly, similar surveys to this can be replicated in a few years to come to assess if there will be any changes as more small and medium sized enterprises are established as others are closed down within Nakuru Municipality.

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APPENDIX I

DATA COLLECTION

SME No.	YEAR	ROA	CCC	CURRENT RATIO	DEBT RATIO	SALES GROWTH
1	2006	0.0619	-0.4440	1.1300	0.6754	-0.0998
	2007	0.0597	0.4735	1.1184	0.7453	0.4399
	2008	0.3089	7.8368	1.4436	0.2657	0.4333
	2009	0.3919	4.7404	1.4192	0.8527	0.7045
	2010	0.1869	-6.5100	1.4570	0.2965	0.4337
2	2006	0.0298	-22.4600	0.6903	1.1034	0.0800
	2007	-0.0669	41.232	0.4878	-0.9760	0.0015
	2008	0.0927	-33.4400	0.5722	0.8854	0.1674
	2009	0.0146	-6.8040	0.6611	0.8586	0.1721
	2010	0.0667	4.9745	0.6889	0.8308	0.1477
3	2006	0.0031	54.3380	0.9280	1.0454	-0.2529
	2007	0.0051	24.1070	1.0777	1.0477	-0.2265
	2008	0.0564	23.0370	1.0832	0.9870	-0.0700
	2009	0.0264	57.2640	1.3974	0.9637	0.0652
	2010	0.0329	65.8270	1.3849	1.0160	0.0469
4	2006	0.0112	-4.0250	0.2265	0.76840	0.0492
	2007	0.0147	-3.6980	0.2093	0.7200	-0.3072
	2008	0.012	-2.1640	0.9996	0.1512	-0.2905
	2009	0.0118	1.7490	0.5548	0.1549	1.0000
	2010	0.0135	1.4751	0.7811	0.0576	-0.3100
5	2006	0.0064	9.1471	1.3790	0.6197	0.0851
	2007	0.0131	10.1340	1.1759	0.6884	0.3066
	2008	0.0064	8.6589	1.0729	0.9701	0.1132
	2009	0.0492	11.3050	1.0255	0.6619	0.1612
	2010	0.0424	23.855	1.1753	0.7087	-0.6719
6	2006	0.0487	14.3790	0.9578	0.9277	0.3170
	2007	0.0469	9.6233	0.8462	0.8917	0.0594
	2008	0.0253	2.2063	0.7939	0.9247	0.1033
	2009	0.0563	-10.3600	0.7436	0.9243	-0.2109
	2010	0.0221	-37.0700	0.5744	0.9127	0.0100
7	2006	0.1605	-29.9200	0.7717	1.1421	-0.0038
	2007	0.1305	-23.8600	0.8293	1.1219	-0.0181
	2008	0.1452	-33.2200	0.8503	0.9495	0.3115
	2009	0.1097	-49.6300	0.8541	1.0000	-0.2014
	2010	0.1442	63.9210	0.7972	1.0000	0.1059
8	2006	0.0892	31.2810	3.1299	0.2582	1.0000

	2007	0.0284	178.8200	3.8048	0.1131	-0.0066
	2008	0.0277	21.7460	1.1393	0.7326	0.5382
	2009	0.0204	57.4750	3.3026	0.2516	0.2727
	2010	0.0123	109.9100	4.6858	0.2074	-1.8420
9	2006	-0.1077	-17.8100	0.9127	-0.9610	-0.0641
	2007	-0.0028	-20.8100	0.9114	-0.9850	-0.0098
	2008	-0.0336	-18.5200	0.9024	-1.1080	0.0295
	2009	0.0492	-19.4800	0.9505	0.9743	0.0349
	2010	0.0424	-8.6650	1.2267	0.7836	-0.0981
10	2006	-0.1565	13.3910	0.6341	-1.4150	0.2438
	2007	0.0489	20.4560	1.3498	0.6782	0.5025
	2008	0.1086	8.3575	1.3683	0.6311	0.1048
	2009	0.3717	17.1910	10.1554	0.0869	-0.1235
	2010	0.0212	28.2430	0.9776	0.1419	0.1556
11	2006	0.0330	-27.0100	0.9777	0.9017	-0.2794
	2007	0.0348	15.8010	1.0230	0.9128	0.2547
	2008	0.0118	25.9740	1.0434	0.8999	-0.0426
	2009	-0.0447	53.5520	1.0536	0.8615	-0.1383
	2010	0.0451	89.0690	1.2420	0.7511	0.0685
12	2006	0.0411	30.6510	1.0494	0.6183	0.1773
	2007	0.0600	67.5940	1.0984	0.5760	-0.0048
	2008	0.0463	94.1560	1.1206	0.5108	-0.0356
	2009	-0.0180	75.4000	1.0034	0.5247	-0.243
	2010	-0.0317	105.8800	1.1994	0.4384	-0.219
13	2006	0.0094	9.7938	5.0153	0.0248	1.0000
	2007	0.0067	235.4500	9.4528	0.0248	-0.8525
	2008	0.0039	300.8900	3.1342	0.0580	0.1878
	2009	0.0109	250.4400	4.2098	0.0664	0.1964
	2010	0.0496	240.6700	3.0381	0.0860	0.1490
14	2006	0.0076	30.0890	0.9816	0.8470	1.0000
	2007	0.0136	22.9820	0.9761	0.8849	-0.0447
	2008	0.0603	25.6780	1.0023	0.9272	0.0231
	2009	0.0661	25.4080	0.9827	0.9400	0.1966
	2010	0.0695	48.5890	1.0471	0.9367	0.1975
15	2006	0.0156	-1.6370	0.9827	0.9798	0.4140
	2007	0.0219	-14.1700	1.0070	0.9585	0.3157
	2008	0.0145	-1.2790	0.9384	0.9691	-1.7814
	2009	0.0116	16.9960	0.9743	0.9652	0.7683
	2010	0.0093	6.0977	1.0223	0.8916	0.2875
16	2006	0.0408	56.0160	1.4210	0.6474	0.1995
	2007	0.0250	66.0610	1.4956	0.6629	0.1195
	2008	0.0107	90.0440	1.2629	0.7883	-0.0346

	2009	-0.0155	109.5600	1.3350	0.7386	-0.3373
	2010	0.0073	45.9360	1.3199	0.7508	0.0658
17	2006	0.0692	-30.7600	0.7702	1.0709	0.0378
	2007	-0.3205	387.0300	0.5969	1.4169	-3.0642
	2008	0.0091	-253.5000	0.5317	1.4779	0.2852
	2009	0.1362	-41.8800	0.7755	1.1643	0.2847
	2010	-0.3021	856.9300	2.0435	0.434	-0.6199
18	2006	0.0808	-42.9600	0.0727	12.996	-0.1027
	2007	0.1073	-35.7600	0.8110	1.1778	0.0780
	2008	0.1055	-14.3600	0.9704	1.0058	0.1707
	2009	0.0226	-2.5150	0.9837	1.0008	0.2805
	2010	0.0651	1.8647	1.0382	0.9545	0.0247
19	2006	-0.0942	4.7883	0.9144	-1.0500	1.0000
	2007	0.0787	-1.9840	1.0164	0.9779	0.4579
	2008	0.0792	-56.8400	0.9913	0.9142	-0.3012
	2009	0.0412	-0.9720	1.1461	0.8135	0.0997
	2010	0.0509	3.7036	1.1609	0.8359	0.0933
20	2006	0.0340	-5.4130	0.976	0.9543	-0.2914
	2007	0.0586	-1.7220	0.8963	0.9271	0.0714
	2008	0.0979	-3.6030	1.0514	0.8457	0.0938
	2009	0.0766	5.3071	0.5672	0.9006	0.3736
	2010	0.1084	6.6254	0.5561	0.8512	0.3128
21	2006	0.0438	-245.7000	0.581	0.8390	-0.2843
	2007	0.0580	-224.0000	0.4242	0.7781	-0.0544
	2008	0.0292	-143.2000	0.2433	0.8742	0.2625
	2009	0.0207	-191.5000	0.2591	0.7932	-0.2404
	2010	-0.0558	89.0820	0.6534	0.4175	0.1163
22	2006	0.0684	287.2300	2.9222	0.3401	0.0645
	2007	0.0972	283.9800	2.8447	0.3423	0.1600
	2008	-0.0234	267.2800	1.3019	0.7367	-0.5483
	2009	0.0507	357.9500	3.6692	0.2642	0.0753
	2010	0.0576	182.0900	3.7537	0.2598	0.1353
23	2006	0.0035	7.8530	0.8760	0.9884	0.0527
	2007	0.0052	-0.74800	0.9841	0.8840	-0.0685
	2008	0.0053	142.7700	1.0320	0.7427	-0.4942
	2009	-0.6696	10.2080	0.9551	0.8107	-0.2288
	2010	-0.0556	16.2930	0.9004	0.9229	0.0332
24	2006	-0.0936	161.8300	0.5859	1.6999	0.3020
	2007	-0.0477	90.8420	0.5595	1.6857	-0.0574
	2008	-0.0736	358.4900	0.5443	1.6958	-0.3469
	2009	0.0662	498.7500	0.4934	1.9984	0.0556
	2010	-0.1836	398.1700	0.4060	2.4055	-0.0085

25	2006	0.1476	-282.6000	0.1845	0.9872	0.0237
	2007	0.3228	-158.6000	0.5593	0.3296	-0.0317
	2008	0.0784	-117.2000	0.4077	0.3573	0.0428
	2009	0.0106	-117.2000	0.8514	0.2984	0.1215
	2010	0.0267	-68.36000	1.6152	0.2023	-0.0205
26	2006	0.1082	17.6660	4.4156	0.2148	0.1163
	2007	0.0075	35.3640	1.2059	0.7992	0.0220
	2008	0.0183	23.0040	1.2676	0.8409	0.0776
	2009	0.0237	24.8440	1.2547	0.8390	-0.1440
	2010	0.0284	22.3540	1.2910	0.8432	0.0761
27	2006	0.0791	40.4270	0.3773	0.7536	0.0947
	2007	0.0624	46.5580	0.3352	0.7818	0.2991
	2008	0.0083	25.0680	0.5840	0.0664	0.4468
	2009	0.0114	38.4030	0.5239	0.0823	-0.5471
	2010	0.0141	29.6630	0.6404	0.0674	0.2397
28	2006	0.0619	-0.4440	1.1300	0.6754	-0.0998
	2007	0.0597	0.4735	1.1184	0.7453	0.4399
	2008	0.3089	7.8368	1.4436	0.2657	0.4333
	2009	0.3919	4.7404	1.4192	0.8527	0.7045
	2010	0.1869	-6.5100	1.4570	0.2965	0.4337
29	2006	0.0141	37.6200	1.3024	0.7477	0.0815
	2007	0.0357	17.0570	1.2075	0.8064	0.0764
	2008	0.0385	11.3970	1.1058	0.8437	0.1693
	2009	0.0518	5.7712	1.1204	0.8246	0.0605
	2010	0.0381	-3.6410	1.0460	0.8917	-0.0441
30	2006	0.0132	-13.5500	1.0341	0.9647	0.0976
	2007	0.0084	-10.3400	0.8502	0.9734	0.1555
	2008	0.0089	-15.9200	0.8049	0.7749	0.1524
	2009	0.0086	-13.5800	0.7759	0.8604	-0.0701
	2010	0.0031	-19.5700	0.1608	0.9830	-0.0458
31	2006	0.0232	9.3655	1.0034	0.9761	-0.0338
	2007	0.0357	-11.7100	1.0427	0.9453	0.0520
	2008	0.0246	-11.9400	1.0870	0.9167	0.0952
	2009	0.0329	10.6890	1.1793	0.8785	-0.4494
	2010	0.054	16.0020	1.1793	0.7174	0.4002
32	2006	0.0599	44.1650	1.0375	0.9427	0.1748
	2007	0.0566	57.2840	1.0670	0.9175	-0.1279
	2008	0.0343	38.2810	1.0733	0.9192	0.1486
	2009	0.0649	41.4710	1.1153	0.8851	0.1541
	2010	-0.0226	51.4380	1.0644	0.9395	-0.1964
33	2006	-0.0421	99.8360	1.0093	0.9622	-0.0498
	2007	-0.0983	67.5570	0.8740	1.0583	-0.1851

	2008	-0.1201	113.6200	1.6033	1.1808	-0.0825
	2009	-0.1126	159.7000	1.5933	1.2729	0.0213
	2010	-0.1177	88.3890	1.6078	1.4136	-0.1581
34	2006	0.0271	-6.2730	0.9304	1.0463	0.0231
	2007	0.023	-7.7090	0.9384	1.0363	0.0250
	2008	0.0121	-50.8300	0.9641	1.0197	0.2119
	2009	0.0032	142.8000	0.9934	1.0035	0.0153
	2010	0.0024	-116.9000	0.9886	1.0045	0.3566
35	2006	0.1267	34.0990	1.3745	0.5540	0.1396
	2007	0.1282	47.4640	1.7713	0.4365	-0.1550
	2008	0.0846	72.0250	1.7526	0.4682	-0.2425
	2009	0.0560	49.6470	2.1201	0.3847	0.3050
	2010	0.0866	39.4000	2.9123	0.3558	0.0377
36	2006	0.0619	-0.4440	1.1300	0.6754	-0.0998
	2007	0.0597	0.4735	1.1184	0.7453	0.4399
	2008	0.3089	7.8368	1.4436	0.2657	0.4333
	2009	0.3919	4.7404	1.4192	0.8527	0.7045
	2010	0.1869	-6.5100	1.4570	0.2965	0.4337
37	2006	-0.0555	114.2800	0.4995	1.4778	0.0942
	2007	0.0158	-94.3200	0.565	1.3916	0.1266
	2008	0.0634	-219.6000	0.5097	1.9238	-0.0067
	2009	0.1318	-140.2000	0.6417	1.5373	0.0595
	2010	0.1041	-112.0000	0.7437	1.2002	0.0176
38	2006	-0.1918	14.8150	0.9253	0.9883	-0.2359
	2007	-0.0399	65.5880	0.4802	1.8218	-0.4482
	2008	0.0640	-78.8100	0.4438	2.2603	0.0857
	2009	0.1083	-75.0500	0.8062	1.3514	-0.1130
	2010	0.2015	-48.1000	1.0475	1.0521	0.2885
39	2006	0.0286	2.3367	1.0937	0.8624	0.3402
	2007	0.0344	-5.5310	1.2121	0.7655	0.0672
	2008	0.0920	0.6316	1.1284	0.8386	0.4589
	2009	0.0392	2.3670	0.9356	0.8477	0.4049
	2010	0.0456	1.4903	0.8282	0.8194	-0.0685
40	2006	0.0619	-0.4440	1.1300	0.6754	-0.0998
	2007	0.0597	0.4735	1.1184	0.7453	0.4399
	2008	0.3089	7.8368	1.4436	0.2657	0.4333
	2009	0.3919	4.7404	1.4192	0.8527	0.7045
	2010	0.1869	-6.5100	1.4570	0.2965	0.4337
41	2006	0.5194	34.3180	0.8510	0.9083	-0.6552
	2007	-0.0215	-1036.0000	0.7125	0.8604	-14.1810
	2008	0.0496	122.1700	0.7066	0.9436	0.6431
	2009	0.0509	104.9000	0.7963	0.7599	0.1459

	2010	-0.0193	555.4000	1.3517	0.6130	-4.4079
42	2006	0.0298	-22.4600	0.6903	1.1034	0.0800
	2007	0.0669	41.2320	0.4878	0.9760	0.0015
	2008	0.0927	-33.4400	0.5722	0.8854	0.1674
	2009	0.0146	-6.8040	0.6611	0.8586	0.1721
	2010	0.0667	4.9745	0.6889	0.8308	0.1477
43	2006	0.0031	54.3380	0.9280	1.0454	-0.2529
	2007	0.0051	24.1070	1.0777	1.0477	-0.2265
	2008	0.0564	23.0370	1.0832	0.9870	-0.0700
	2009	0.0264	57.264	1.3974	0.9637	0.0652
	2010	0.0329	65.8270	1.3849	1.0160	0.0469
44	2006	0.0112	-4.0250	0.2265	0.7684	0.0492
	2007	0.0147	-3.6980	0.2093	0.7200	-0.3072
	2008	0.0120	-2.1640	0.9996	0.1512	-0.2905
	2009	0.0118	1.7490	0.5548	0.1549	1.0000
	2010	0.0135	1.4751	0.7811	0.0576	-0.3100
45	2006	0.0064	9.1471	1.3790	0.6197	0.0851
	2007	0.0131	10.1340	1.1759	0.6884	0.3066
	2008	0.0064	8.6589	1.0729	0.9701	0.1132
	2009	0.0492	11.3050	1.0255	0.6619	0.1612
	2010	0.0424	23.8550	1.1753	0.7087	-0.6719
46	2006	0.0487	14.3790	0.9578	0.9277	0.3170
	2007	0.0469	9.6233	0.8462	0.8917	0.0594
	2008	0.0253	2.2063	0.7939	0.9247	0.10330
	2009	0.0563	-10.3600	0.7436	0.9243	-0.2109
	2010	0.0221	-37.0700	0.5744	0.9127	0.0100
47	2006	0.1605	-29.9200	0.7717	1.1421	-0.0038
	2007	0.1305	-23.8600	0.8293	1.1219	-0.0181
	2008	0.1452	-33.2200	0.8503	0.9495	0.3115
	2009	0.1097	-49.6300	0.8541	1.0000	-0.2014
	2010	0.1442	63.9210	0.7972	1.0000	0.1059
48	2006	0.0892	31.2810	3.1299	0.2582	1.0000
	2007	0.0284	178.8200	3.8048	0.1131	-0.0066
	2008	0.0277	21.7460	1.1393	0.7326	0.5382
	2009	0.0204	57.4750	3.3026	0.2516	0.2727
	2010	0.0123	109.9100	4.6858	0.2074	-1.8420
49	2006	-0.1077	-17.8100	0.9127	0.9609	-0.0641
	2007	-0.0028	-20.8100	0.9114	0.9851	-0.0098
	2008	-0.0336	-18.5200	0.9024	1.1081	0.0295
	2009	0.0492	-19.4800	0.9505	0.9743	0.0349
	2010	0.0424	-8.6650	1.2267	0.7836	-0.0981
50	2006	-0.1565	13.3910	0.6341	1.4152	0.2438

	2007	0.0489	20.4560	1.3498	0.6782	0.5025
	2008	0.1086	8.3575	1.3683	0.6311	0.1048
	2009	0.3717	17.1910	10.1554	0.0869	-0.1235
	2010	0.0212	28.2430	0.9776	0.1419	0.1556
51	2006	0.0330	-27.0100	0.9777	0.9017	-0.2794
	2007	0.0348	15.8010	1.0230	0.9128	0.2547
	2008	0.0118	25.9740	1.0434	0.8999	-0.0426
	2009	-0.0447	53.5520	1.0536	0.8615	-0.1383
	2010	0.0451	89.0690	1.2420	0.7511	0.0685
52	2006	0.0411	30.6510	1.0494	0.6183	0.1773
	2007	0.0600	67.5940	1.0984	0.576	-0.0048
	2008	0.0463	94.1560	1.1206	0.5108	-0.0356
	2009	-0.0180	75.4000	1.0034	0.5247	-0.2430
	2010	-0.0317	105.8800	1.1994	0.4384	-0.2190
53	2006	0.0094	9.7938	5.0153	0.0248	1.0000
	2007	0.0067	235.4500	9.4528	0.0248	-0.8525
	2008	0.0039	300.8900	3.1342	0.058	0.1878
	2009	0.0109	250.4400	4.2098	0.0664	0.1964
	2010	0.0496	240.6700	3.0381	0.0860	0.1490
54	2006	0.0076	30.08900	0.9816	0.8470	1.0000
	2007	0.0136	22.9820	0.9761	0.8849	-0.0447
	2008	0.0603	25.6780	1.0023	0.9272	0.0231
	2009	0.0661	25.4080	0.9827	0.9400	0.1966
	2010	0.0695	48.5890	1.0471	0.9367	0.1975
55	2006	0.0156	-1.6370	0.9827	0.9798	0.4140
	2007	0.0219	-14.1700	1.0070	0.9585	0.3157
	2008	0.0145	-1.2790	0.9384	0.9691	-1.7814
	2009	0.0116	16.9960	0.9743	0.9652	0.7683
	2010	0.0093	6.0977	1.0223	0.8916	0.2875
56	2006	0.0408	56.0160	1.4210	0.6474	0.1995
	2007	0.0250	66.0610	1.4956	0.6629	0.1195
	2008	0.0107	90.0440	1.2629	0.7883	-0.0346
	2009	-0.0155	109.5600	1.3350	0.7386	-0.3373
	2010	0.0073	45.9360	1.3199	0.7508	0.0658
57	2006	0.0692	-30.7600	0.7702	1.0709	0.0378
	2007	-0.3205	-387.0000	0.5969	1.4169	-3.0642
	2008	0.0091	-253.5000	0.5317	1.4779	0.2852
	2009	0.1362	-41.8800	0.7755	1.1643	0.2847
	2010	-0.3021	856.9300	2.0435	0.4340	-0.6199
58	2006	0.0808	-42.9600	0.0727	12.996	-0.1027
	2007	0.1073	-35.7600	0.8110	1.1778	0.07800
	2008	0.1055	-14.3600	0.9704	1.0058	0.17070

	2009	0.0226	-2.5150	0.9837	1.0008	0.2805
	2010	0.0651	1.8647	1.0382	0.9545	0.0247
59	2006	-0.0942	4.7883	0.9144	1.0504	1.0000
	2007	0.0787	-1.9840	1.0164	0.9779	0.4579
	2008	0.0792	-56.8400	0.9913	0.9142	-0.3012
	2009	0.0412	-0.9720	1.1461	0.8135	0.0997
	2010	0.0509	3.7036	1.1609	0.8359	0.0933
60	2006	0.0340	-5.4130	0.9760	0.9543	-0.2914
	2007	0.0586	-1.7220	0.8963	0.9271	0.0714
	2008	0.0979	-3.6030	1.0514	0.8457	0.0938
	2009	0.0766	5.3071	0.5672	0.9006	0.3736
	2010	0.1084	6.6254	0.5561	0.8512	0.3128
61	2006	-0.0436	8.4456	0.9956	0.8627	0.3158
	2007	0.0247	18.4960	1.0440	0.8778	0.2292
	2008	0.0553	19.5450	1.0958	0.8806	0.3860
	2009	-0.0411	48.3240	1.0405	0.9207	-0.6473
	2010	0.0299	25.966	1.0339	0.9350	0.4628