RELATIONSHIP BETWEEN SELECTED ECONOMIC INDICATORS AND WORKING CAPITAL OF SMALL AND MEDIUM ENTERPRISES IN KENYA

BY:

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE MASTERS IN BUSINESS ADMINISTRATION (MBA) DEGREE OF THE UNIVERSITY OF NAIROBI
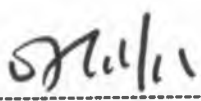
OCTOBER 2012

DECLARATION

I declare that this project is my original work and has never been presented in any other learning insitution for an award of any Diploma or Degree program.

Name   **Adm. No.:**   **Signature**   **Date**

KENNETH ODIWUOR OCHIENGD61/61672/2010 ....07/11/2012

This research project has been submitted for evaluation within my approval as the university supervisor

SUPERVISOR: DR. JOSIAH ADUDA

Sign: -------------------------------------   Date: ---

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DEDICATION

To my family and all those who supported me in the completion of this project writing. God bless you abundantly.

ACKNOWLEDGEMENT

ABSTRACT

Small and Medium enterprises are acknowledged in Kenya as significant contributors to economic growth. Despite this, it is estimated that up to 40% of the start-ups fail by year 2 and at least 60% close their doors by year 4. SMEs comprise the largest proportion of businesses in most economies and frequently offer greatest potential for job creation and promotion an enterprise culture. SMEs are believed to be an impetus to the economic progress of developing countries and its importance is gaining widespread recognition. However, given their reliance on short-term funds, it has been recognized that the efficient management of working capital is crucial for the survival and growth of small firms.

The objective of this study was to examine the relationship between selected economic indicators and working capital of small and medium enterprises in Kenya. While recent research supports the view that smaller firms tend to be more liquid than larger firms, availability of short term funds throughout the economy is affected by economic conditions prevailing at a particular point in time. A sample of 30 SMEs within Nairobi area was used. The selected firms were studied over a period of five years from 2006 to 2010. The findings from this study showed that there is a positive relationship between selected economic indicators and working capital for these firms during periods of economic expansion. This shows that proper management and forecasting working capital requirements in line with projected economic growth is a very important task of finance managers and policy makers. The study corroborates other research findings such as Lamberson (1995) that established a positive relationship between working capital of small and medium enterprises and economic indicators.

From the research findings, it can be concluded that since working capital needs of organizations change over time as does its internal cash generation rate, small firms should ensure a good synchronization of its assets and liabilities as economic conditions change in order to remain viable.

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LIST OF ABBREVIATIONS

CPI   Consumer Price Index

FDI   Foreign Direct Investment

GDP   Gross Domestic Product

KAM   Kenya Association of Manufacturers

NSE   Nairobi Security Exchange

R&D   Research & Development

SME   Small and Medium Enterprises

U.S.   United States

CHAPTER ONE:

INTRODUCTION

1.1 Background of the Study

In order to support any feasible economic effort at the firm level, short term finances are required to support operational costs. Finances of this nature are known as working capital. Working capital is fundamental to the finance structure of every enterprise since it drives the liquidity position of the firm in the short-term. Ideally, the firm invests in working capital so as to dispose itself in a manner that will assure timely and obligatory payment to creditors, employees, interest to providers of finance and other pecuniary falling due on short notice. According to a study by Gitman and Maxwell (2), financial managers devote approximately 60% of their time on short term activities. The dynamic and highly volatile nature of short term markets, the constant need to replace current assets and to pay off current liabilities, and the fact that long term funds are raised infrequently help explain the larger time allocation to short term activities.

The current dynamism in the business environment calls for vigilance and accuracy especially in policy formulation (Lamberson 1991). Managers including financial planners must thus be well versed not only with the traditional skills of running a firm but must also be able to synthesize a firm's working capital needs within a background of competition within the industry (Moyer, Mcguigan and Krettlow). While recent research supports the view that smaller firms tend to be more liquid than larger firms, availability of short term funds throughout the economy is affected by economic conditions that exist at a point in time (Lamberson, 1991). The purpose of this study will be to analyze how the working capital positions of SMEs in Kenya respond to changes in the level of economic activities.

Some companies are better placed than others when it comes to working capital issues. For example, insurance companies receive premiums upfront before having to make any payment (though they have unpredictable cash outflows inform of claims lodged). Also big retailers such as supermarkets have low receivable levels because customers pay on the spot and it's only the inventories that represent the greatest problems for them and they must perform vigorous

entory forecasting. Manufacturing companies on the other hand incur substantial costs of raw aterials, machinery, and labor upfront before receiving any payments. A research carried out in : United States of America in 1991 by Lamberson indicated that there was more liquidity in ge firms compared to small firms. Current assets accounted for 60.3% of the total assets iong the manufacturing firms with assets valued at $5 million. It also indicated that small firms recent years have had current and quick ratios that exceeded those of large firms and the mary reasons that can be attributed to the differences between large and small firms with pect to working capital are: large firms have an advantage of economies of scale and can vote more resources and expertise to manage current assets. According to Pinches (1990), ge firms can become capital intensive relative to small firms. Indeed small firms have got ver alternatives than the large counterparts in raising funds as well as fewer safety nets in iich to rely. Based on these expected relationships and relatively large investments in current counts, small firms should respond to the expanding economic activity by increasing their vestments in the various components of current assets. Also firms would likely increase their e of short term financing. The expected impact of such actions would be a decrease in the uidity position of the firms and an increase in the percentage of assets held in the form of rrent assets during an expanding economy. The opposite impact would be expected during a wn turn in the economy.

1.1.1. Working capital concept

ccording to Bhattacharya (2006), the concept of working capital was perhaps evolved by Karl arx, though in somewhat different form, and the term he used was "variable capital". ithmann and Dougall (1948) defined working capital as the current assets minus current bilities and their view was elaborated by Park and Gladson (1963). Irrespective of the size of : firm, components of working capital will be recognized as cash, inventories and accounts eivables commonly referred to as current assets on one side and trade creditors, bank erdrafts, tax provisions as well as other payables also known as current liabilities on the other. ccordingly, finance mangers must engage in concerted effort to ensure that the amount of rrent asset investment levels is just adequate to cover the current liabilities held or which may e in the course of doing business. An investment in current assets denies a firm an opportunity

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to invest in non-current assets whose life is longer and better and stable returns which yield higher profitability and greater shareholders wealth. On the other hand, failure to adequately cover current liabilities diminishes the firm's credibility, goodwill and profitability in the long run. The balance between the two extremes must be smoothened using working capital management principles.

1.1.2. Economic activity and trade cycles

Arthur Burns and Wesly Mitchell (1946) in their book of measuring trade cycles, defined trade cycle as a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprise. They went ahead to define economic activity, as an activity that involves the use of scarce resources in the provision of goods and services to satisfy unlimited wants. Economic activity according to them; is a measure for meeting the problem of making a living; other categories of work are not related to this problem. There may be differences in nature between one source of livelihood and another but the underlying similarity in all spheres of economic activities is that work is performed against a ware or remuneration. In the modern social scheme of things, these activities rotate around the financial axis and that is why all the activities involving money earning and spending are called economic activities. Many theories have been floated to try to explain the causes of such fluctuations in the business or economic environment. Clement Juglar (1862) was among the first to call for an "economic" theory of the cycle. He found the economic cycle to be related to the credit cycle. However, Juglar had no explanation of the credit cycle-he only posited that a relationship existed.

1.1.3. The relationship between economic activity and working capital

A commonly held view is that short term credit will be more readily available during periods of low economic activity in contrast to periods of high economic activity (Lamberson, 1991). Also business needs for working capital increase during expanding economic activity and decreases during contracting economic activity. The level of investment in working capital accounts should increase as economic activity increases and vice versa (Gupta, 1983 and Schall and Haley, 1991). During periods of economic expansion, small firms are expected to increase their investments in receivables, inventories and other current assets such as use of spontaneous sources of funds and short term debt. Based on the matching principal, during economic

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expansion, it is likely that a firm's liquidity will have a down ward trend and the opposite is likely to happen during economic contraction (Lambserson, 1991).

1.1.4. Importance of Small and Medium Enterprises in economic growth

Small and Micro Enterprises (SMEs) comprise the largest proportion of businesses in most economies and frequently offer the greatest potential for job creation and promotion of an enterprise culture (Asquinth et al, 1994). Small and Medium Enterprises are believed to provide an impetus to the economic progress of developing countries and its importance is gaining widespread recognition; Storey (1994) notes that small firms constitute the bulk of enterprises in all economies in the world. However, given their reliance on short-term funds, it has been recognized that the efficient management of working capital is crucial for the survival and growth of small firms (Grablowsky, 1984). A large number of small business failures have been attributed to inability of financial managers to plan and control properly the current assets and current liabilities of their respective firms (Smith, 1973).

1.1.5. Roles of Small and Medium Enterprises as an engine for economic growth in Kenya

The small and Medium Enterprises play an important role in the Kenyan Economy. The government of Kenya has placed a lot of emphasis on the development of SMEs as a means of encouraging self employment, poverty reduction and accelerating economic growth. This has seen SMEs contribute over 50% of the employment opportunities in Kenya and over 40% of the GDP (Economic Survey, 2010). Small and Medium Enterprises are less capital intensive and highly labor intensive, there are huge opportunities for this sector in labor-abundant capital-scarce economy like Kenya. The other factors that are responsible for the fast growth of this sector are extensive promotion and support by the government, available grants and subsidies, raw material procurement, rising export demand for Kenyan products and rising domestic demand which is the result of overall economic growth.

1.2 Problem Statement

According to Ezra and John (1997), modern micro-economic theory on how the private firm should behave is based on the profit maximization as the decision criteria and actions that

increase the firms profit are undertaken and those that decrease profits avoided. To maximize profit implies that the firm must maximize output for a given set of scarce inputs or minimize the cost of production of a given output (Weinraub, 1998), the firm must be efficient in its use of working capital. Thus, from the perspective of economic theory, profit maximization is a criterion for economic efficiency. In light of the foregoing, it would be right to speculate that a number of factors that may both be internal and external to the business would affect the management and planning of the working capital available in the economy. The availability of short term funds throughout the economy is affected by the economic conditions that exist at a specific point in time. A commonly held view is that credit is readily available during periods of low economic activity (Lamberson 1991). It is possible that during periods of low economic activity most investors would prefer to lend on short term basis due to risks associated with long term lending in a declining economy (Weinraub 1998). However the management of working capital is critical during periods of declining economy.

In Kenya studies have been done on working capital management and profitability. Bett (2009) did a study on working capital management practices and profitability in Kenyan referral hospitals. He identified that there are policies that are not adhered to leading to poor performance of the institutions. Ochieng (2006) did study on effects of the relationship between working capital of firms listed at NSE and the economic activity in Kenya found that the liquidity of firms, as measured by the current and quick ratios, increases during the economic expansion and decreases during economic slowdowns. Nganga (2009) did a study on the relationship between working capital management and profitability of listed companies on Nairobi Stock Exchange. He found that average collection period and leverage significantly and negatively affect profitability while increase in accounts receivables period also increases sales which in return increases profitability. These results are contradicting; it shows working capital increasing and also negatively affecting profitability.

A review of literature has indicated an increasing volume of research on the subject of working capital management, but very little published local research on working capital changes of small and medium sized firms in relation to changes in economic activity. No published local research

is available that address the subject of the relationship between changes in working capital position of small firms and changes in the level of economic activity. Since these firms make enormous contribution to the economy (Martin, Scott and Keown, 1991), research is needed that will provide insight into the behavior of such businesses. The purpose of this study will be evaluate how the working capital position of Small and Micro Enterprises in Kenya responds to changes in the level of economic activity in the country.

1.3 Objective of the study

The research objective of this study is to examine relationship between selected economic indicators and working capital of small and medium enterprises in Kenya.

1.4 Significance of the study

Efficient financial management requires existence of some objectives or goal (Kim et al 1992). This is so because judgment as to whether or not financial decision is efficient must be made in light of some standard. The study would greatly benefit finance managers and company heads. By understanding the relationship between economic activity and the management of working capital, finance managers would be able to plan their working capital strategy based on the changes of economic activities prevailing at a particular time.

The study would also be important to human resource professionals and government planners to enable them plan for the required economic resources over a particular economic year.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction:

Working capital management is a significant area of financial management and the administration of working capital may have an important impact on the liquidity of the firm (Shin and Soenen, 1998). Pertinent to this is the Transaction cost theory at its core, focuses on transactions and costs that attend completing transactions by one institutional mode rather than another (Williamson, 1985). Working capital management is concerned with ensuring that the firm has the right amount of money and credit lines at all times (McClure, 2003). Cash is the lifeline of a company and should not be left to go beyond the optimal level as the firm's ability to fund operations, reinvesting, and capital requirements will be affected (McClure, 2003). Understanding a company's cash flow position at all times is essential to making investment decisions; and a good way to judge a company's cash flow prospect is to look at its working capital management (David, 2003).

2.2 Review Working Capital Theories

Although several theories have been put forward on the working capital management, the study will focus on three theories thus:

2.2.1 Baumol Model

Baumol Model (Baumol 1952) of cash management provides a formal approach for determining a firm's optimal cash balance under uncertainty. It considers cash management similar to an inventory management problem. As such firms attempt to minimize the cost of holding cash and the cost of converting marketable securities to cash. The model is applicable under several assumptions: that the firm is able to forecast its cash needs with certainty; the firm's cash payments occur uniformly over a period of time; the opportunity cost of holding cash is known and it does not change over time; and the firm will incur the same transaction cost whenever it converts securities to cash. The firm incurs holding costs for keeping the cash balance. It is an opportunity cost i.e. the return foregone on the marketable securities. If the opportunity cost is k, then the firm's holding cost for maintaining an average cash balance is as follows:

Holding Cost = $k\{^C/_2\}$

The firm incurs a trading cost whenever it converts marketable securities to cash. Total number of transactions during the year will be total funds requirements, T divided by the cash balance, C, i.e. T/C. The cost per transaction is assumed to be constant. If per transaction cost is c, then the total trading cost will be;

Trading cost= $c\left\{^T/_C\right\}$

The total annual cost of the demand for cash will be;

Total annual cost = $K\left\{\frac{C}{2}\right\} + c\left\{\frac{T}{C}\right\}$

The optimum cash balance C* is obtained when the total cost is minimum. Hence the formula for the optimum cash balance is as follows:

$$C^{\cdot} = \sqrt{^{2cT}/_k}$$

2.2.2   The Miller-Orr model

One limitation of Baumol model is that it does not allow cash flows to fluctuate. Firms in practice do not use their cash balance uniformly nor are they able to predict daily cash inflows and outflows. The Miller-Orr Model (Miller and Orr 1966) overcomes this shortcoming and allows for daily cash flow variation. It assumes that net cash flows are normally distributed with a zero value of mean and standard deviation. The model provides two control limits namely; the upper and lower control limits as well as a return point. If the firm's cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance. Similarly, when the firm's cash flows goes below the lower limit, it

sells sufficient marketable securities to bring the cash balance back to the marketable level as shown in the diagram below.

Determining the distance between upper and lower control limits (Z) is as follows; the difference between the upper limit and the lower limit depends on the following factors: the transaction cost (c) and the interest rate (i); and the standard deviation (s) of net cash flows. The formula for determining the distance between the upper and lower control limits (c) is as follows:

Upper limit =Lower limit+3z

Return point= Lower limit+z

The net effect is that the firm holds average cash balance equal to:

Average Cash balance = lower limit+4/3z

Figure 1 Miller Orr-Model
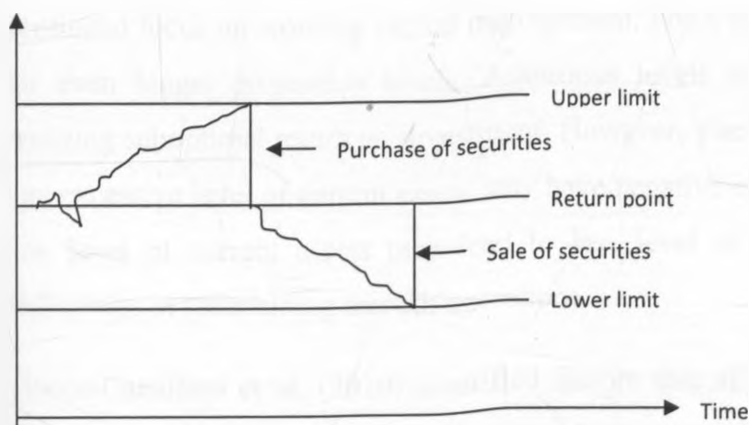
2.2.3 Value Network Theory

Rappaport (1986) theory on shareholder's value network explains the linkages between corporate objectives of value creation and its value drivers. He argues that to be effective, management must be guided by a set of principles that can be applied in decision making in various situations. To this effect, he also developed a number of financial management approaches and basic principles applicable for the management of working capital. Two of the most important of these

principles are the objective of the shareholder value creation and the cash flow approach to decision making. The objective of the shareholder is value creation according to Rappaport because; owners of firms hire managers to act in order to maximize their wealth by generating profits. Therefore the criterion of shareholder value creation becomes a basic approach to formulate and evaluate firm objectives. Value drivers are the variables that create value and are taken as the building blocks by which firms create a product valuable to buyers. Rappaport's shareholder value network depicts essential link between the corporate objective and the basic drivers: sales growth rate, operating profit margin, income tax rate, working capital investment, cost of capital and value growth duration. Value composition, cash flows from operations and the discount rate are the factors used to measure the achievements of the corporate objective of the firm.

2.3 Working Capital Management

Working capital plays an important role in the firm's going concern and risk as well as its value as noted by Smith (1980). Financial management experts have found several reasons for the continued focus on working capital management. For a typical manufacturing firm, they account for even bigger proportion levels. Ambitious levels of current assets may result in a firm realizing suboptimal return on investment. However, Van Horne and Wachowiz (2005) point out that excessive level of current assets may have negative effect on a firm's profitability whereas a low level of current assets may lead to low level of liquidity and stock-outs, resulting in difficulties in maintaining smooth operations.

Banos-Caballero et al. (2010) identified factors that affect firm's working capital policy. His findings suggest that firms with larger capacity to generate internal resources have higher current assets levels. This could be because of the lower cost of funds invested in working capital for these firms generated by great cash flows. Chiou& Cheng (2006) found that firms have more efficient working capital management when operating cash increases. Hill et al. (2010) and Banos-Caballero et al. (2010) found that firms with greater operating cash flows manage working capital more conservatively which is inverse result. He further argues that firms with more debt have to pay higher risk premium. This means higher cost for working capital, which

means firms with high leverage tend to reduce their working capital. Large leverage is negatively related to the amount of working capital. Leverage has a negative relation to the cash conversion cycle in two studies (Dong & Su 2010, Mathuva 2010) and positive in three studies (Deloof 2003, Garcia-Teruel& Martinez-Solano 2007, Falope&Ajilore 2009).

Although finance managers in the past have focused mainly on transactions in domestic markets, the rapid expansion of global trade today requires them to be equally concerned with transactions involving global markets. This has led credence to efficient management of short term financial accounts globally. A study by Gitman, Moses and White (1979) reported corporate cash management practices of both large and small US Corporations; it provided useful information that helped to bridge the gap between the theory and practice of cash management in the US. Other studies followed, which basically investigated various aspects of cash management. Gitman and Maxwell (1985), in a survey of Chief Financial officers of major US firms, found that financial planning, budgeting and working capital management are the activities on which domestic finance managers spend most of their times; this study confirmed anecdotal evidence relating to

2.4 Economic activity and determinant of Economic growth

An economic activity involves the use of scarce resources in the provision of goods to satisfy unlimited wants. It is a measure for meeting the problem of making a living and there may be differences in the nature between one source of livelihood and another but the underlying similarity in all spheres of economic activities. Conceptually the most encompassing descriptor of an area economy is its output; the value of what it has that the area produces in total by sector. Over the last two decades, the determinants of economic growth have attracted increasing attention in both theoretical and applied research. Yet, the process underlying economic performance is inadequately conceptualized and poorly understood, something which can be partly attributed to the lack of a generalized or unifying theory, and the myopic way conventional economics approach the issue (Artelaris et al, 2007).

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2.4.1 Determinants of economic growth

A wide range of studies have investigated the factors underlying economic growth. Using differing conceptual and methodological viewpoints, these studies have placed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth. Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models. However, in the neoclassical model investment has impact on the transitional period, while the endogenous growth models argue for more permanent effects. The importance attached to investment by these theories has led to an enormous amount of empirical studies examining the relationship between investment and economic growth (Kormendi and Meguire, 1985; De Long and Summers, 1991; Levine And Renelt, 1992; Bond et al, 2001). Human capital is the main source of economic growth in several endogenous growth models as well as one of the key extensions of the neoclassical growth model. Majority of studies have measured the quality of human capital using proxies related to education such as school enrolment rates, test of mathematics and scientific skills. A large number of studies have found evidence suggesting that educated population is a key determinant of economic growth (Barro, 1991). However, there have been other scholars who have questioned these findings and, consequently, the importance of human capital as substantial determinant of economic growth (e.g. Levine and Renelt, 1992).

Innovation and R&D activities can play a major role in economic progress increasing productivity and growth. This is due to increasing use of technology that enables introduction of new and superior products and processes. This role has been stressed by various endogenous growth models, and the strong relation between innovation/R&D and economic growth has been empirically affirmed by many studies (Fagerberg, 1992; Ulku, 2004). Economic policies and macroeconomic conditions have, also, attracted much attention as determinants of economic performance (Kormendi and Meguire, 1985) since they can set the framework within which economic growth takes place. Foreign Direct Investment (FDI) has recently played a crucial role of internationalizing economic activity and its primary source of technology transfer and economic growth. This major role is stressed in several models of endogenous growth theory. The empirical literature examining the impact of FDI on growth has provided more-or-less

consistent findings affirming a significant positive link between the two (Lensink and Morrissey, 2006).

2.4.2 Measures of economic activity

The indicators of economic activity that are more frequently used in the literature include change over time in Gross Domestic Product, inflation, employment, earnings, business establishments, income, and property values, etc. of these, earnings and employment are, compared to output, the next most direct measures of economic activity. Earnings are highly correlated with output since they represent the labor component of output, while employment is an input to economic production rather than output; it is a relevant indicator of the extent to which an economy is utilizing its production capacity. Whatever the indicator being used, studies maybe concerned either with the economy as a whole (e.g. total output, employment, or earnings) or with specific sector or sectors of interest (e.g. output, employment or earnings in the manufacturing sector). Studies may attempt to explain the level of activity at a particular point in time or changes in these over time (Caroll and Wasylenko, 1994).

2.5 Review of empirical studies

Using economic indicators as independent variables and financial ratios as dependent variables,Lamberson (1995) explored the relationship between changes in working capital position and changes in the level of economic activity, taking a sample of 50 small U.S firms for the period 1980-1991. The study found evidences that liquidity slightly increased during economic expansion with no noticeable change in liquidity during economic slowdowns.

Chiou, Cheng and Wu (2006) explored the factors that impact working capital management, using 19,180 firm/quarter data extracted from Taiwan Stock Exchange, for period 1996-2004. The study indicated that the debt ratio and operating cash flow affected the company's working capital. On the other hand, the results did not provide evidences for the influence of the business cycle, industry effect, growth of the company, performance of the company and firm size on working capital management.

Sathymoorthi and Wally-Dima (2008) analyzed retail domestic companies listed in Botswana Stock Exchange, from 2004 to 2006, and found evidences that companies adopted a conservative

approach in working capital management, which suggests that it is not static overtime, but varies with the change of macroeconomic factors. In times of high business volatility, companies tend to adopt a conservative approach and tend to adopt an aggressive approach in times of low volatility.

Appuhami (2008) investigated the impact of firm's capital expenditure on working capital management, using data collected from listed companies in the Thailand Stock Exchange from 2000 to 2005. The research found a negative relationship with capital expenditure, indicating that companies tend to manage working capital efficiently when they find opportunities to growth by investing in fixed assets. Also, the study found positive and significant evidences between working capital requirement and operating and finance expenditure, suggesting that companies tend to increase working capital level as debt and interest expenditure increase. Also, the study suggested that companies tend to mange working capital efficiently, since it increases cash flows.

Using data on a panel of U.S. corporations from 1990 through 2004, Kieschnick, and Moussawi (2006) found evidences that industry practices, firm size, future firm sales growth, the proportion of outside directors on board, executive compensation (current portion), and CEO share ownership significantly influence the efficiency of a company's working capital monitoring in managing capital.

Nunn (1981) approached the working capital requirements splitting into seasonal and permanent needs (Gitman, 1997). The researcher explored the permanent portion of working capital that does not fluctuate with short-run changes in the business activity of the firm. Using multiple regression model, the study used a U.S. database taking product-line businesses in many different industries, from 1971 to 1078. The study found evidence of 19 possible determinants of working capital management related to the production process, sales, accounting method, and competitive position and industry factors.

Filbeck and Krueger (2005) provided insights to support the importance of efficient working capital management, assessing nearly 1,000 firms using data from a traditional working capital

management survey published by CFO magazine in United States, for the period 1996-2000. According to the study, there were both significant differences between industries in working capital measures across time and also significant changes in these measures within industries over the time. For researchers, these changes could be related to the macroeconomic factors such as interest rate, innovation rate and competition.

Chu et al. (1991) analyzed the hospital sector to observe the differences of financial ratios group between hospital sector and industrial firm sector. Their study concluded that financial ratios group were significantly different from those of industrial firm's ratios as well as these ratios were relatively stable over 5 years period. Sathymoorth (2002) focused on good corporate governance and in turn effective management of business assets. He observed that more emphasis is given to investment in fixed assets in management area and business research. However, effective management of working capital has been receiving little attention and yielding more significant results. He analyzed selected co-operatives in Botswana for a period of between 1993-1997 and concluded that an aggressive approach has been followed by these firms during all the four years of study.

Afza and MS Nazir (2008) investigated the relationship between the aggressive/conservative working capital policies for seventeen industrial groups and a large sample of 263 public limited companies listed at Karachi Stock Exchange for a period of 1998-2003. Using ANOVA and LSD Test, the study found significant differences among their working capital investment and financing policies across different industries. Moreover, rank order correlation confirmed that these significant differences were remarkably stable over the period of six years of study. Finally, ordinary least regression analysis found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies.

Ochieng (2006) on his studies on effects of the relationship between working capital of firms listed at NSE and the economic activity in Kenya found that the liquidity of firms, as measured by the current and quick ratios, increases during the economic expansion and decreases during economic slowdowns.

According to Nyaga (2007) working capital management policies are crucial instruments of success factors. He notes that it is only when a firm is profitable that it will realize market growth, market share and progress through product industry life cycles.

Zubiri (2010) studied the impact of working capital management on company profitability in a research performed on the automobile production industry in Pakistan from 2000 to 2008. The researcher has used current ratio as an indicator for working capital management policies and financial leverage as the indicator for the capital structure. Variables in this research were tested using the correlation coefficient and multi variable regression. Results of the research indicate that companies must increase current assets and decrease current liabilities for maximizing profitability. Findings reflect that the increase in cash flow would result in an increase in profitability. Moreover a positive relationship exists between profitability and the financial leverage. The relationship does have its limits; a point exists where the increase in financial leverage results in reduced profitability. In this research the relationship between operational leverage and profitability was evaluated as well. Results indicated that an inverse relationship exists between the two variables. The researcher has provided the justification that an increase in company capacity does not necessarily lead to an increase in sales and it may be absolutely possible that the company may have been going through a period of recession.

Chatreji (2010) studied the impact of working capital management on profitability in companies listed in London Stock Exchange throughout the years 2006-2008. The researcher used the Pierson correlation coefficient to evaluate the impact of cash transformation cycle, the period of collection of receivables, inventory retention period, liability settlement period, the current to quick ratio, to net operational profit. Results indicated that a negative relationship exists between working capital management and profitability. Moreover results have also stated that a negative relationship exists between liquidity and profitability as well.

2.6 Conclusion

According Kesseven (2006), the different analyses have identified critical management practices and are expected to assist managers in identifying areas where they might improve the financial

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performance of their operations. The result will provide owner managers with information regarding the basic financial management practices used by their peers and their peers attitudes toward these practices. The working capital needs of an organization change over time as does its internal cash generation rate. As such, the small firms should ensure a good synchronization of its assets and liabilities as economic conditions change in order to remain viable.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methods and procedures that were adopted to meet the objectives of the study. It is sub-divided into research design, research population, sampling and sample size, data collection and data analysis

3.2 Research Design

The research used a descriptive survey method to assist the researcher to achieve the objective of the study. Mugenda and Mugenda, (1999) stated that the descriptive survey is a method that collect data from the population and help the researcher to get the descriptive existing phenomena. It involves making decisions on what type of data is required, where the data will be found, techniques of data collection, analysis and interpretation.

3.3 Target Population

The target population of the study comprised of all the SME's institutions registered in Kenya and operating within Nairobi area as per the attached appendix1. It was obtained from KPMG Kenya annual performance survey report on the SMEs and the Kenya association of Manufacturers (KAM). The period under study was from year 2006 to year 2010.

3.4 Sample method and sample Size

The convenient sampling technique was used. The main features of this method are the fact that subjects are easily and conveniently available, have been operating over the period under study and located in Nairobi. The sample size of the study was 30 SMEs in Nairobi.

3.5 Data Collection

The study solely used secondary data. Current ratios of selected firms were sought from KPMG annual performance report on SMEs in Kenya as well as trends of the selected economic indicators as published by the Kenya National Bureau of Statistics over a five year period from

2006 to 2010. The averages of working capital of these firms over the period of study was used and compared with trends of economic indicators.

3.5.1 Measurement of the Variables

The index of annual average coincident economic indicators was used as the measure of economic activity. Moffart in his paper "How markets use information to set prices" defines an economic indicator as simply an economic statistic, such as the unemployment rate, GDP, or the inflation rate, which indicate how well the economy is doing and will do in the future.

Inflation: This is a sustained increase in the general price level. It is important for firms to monitor inflation as they need to assess what to do with their own prices. Their input costs are likely to be rising and hence their margins will be shrinking. They also, however need to assess what their competitors are doing. Inflation is also likely to lead to wage demand by employees since the cost of living will be moving upwards during inflation. Inflation is measured by Consumer Price Index (CPI)

Economic growth: This is the growth in the level of national income. Although there are various measures of national income, the most commonly used is the Gross domestic Product which is normally measured as a percentage change in real Gross Domestic Product which means change in GDP after inflation has been taken into account. The measure of GDP is important to firms since the demand of their goods and services is likely to depend on the income level of consumers.

Unemployment: The level of unemployment is determined by counting the people who are currently not working but who are willing to work. This is an important indicator factor because it shows how "tight" the labor market is. If unemployment is very low, then the labor market can be described as "tight" as there are few people to fill any vacant jobs. This means that firms may find it increasingly difficult to fill vacancies and may even have to offer higher wages. Unemployment data which was retrieved from Kenya National bureau of Statistics, was incomplete hence was not used in the analysis.

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Working capital: Generally companies that have a lot of working capital are more successful since they can expand and improve operations. Companies with negative working capital may lack the funds necessary for growth. Working capital ratio was used in this study in order to standardize the statistics. Liquidity aspect of working capital examined was presented by the current ratio. The dependent variable was hence working capital.

Model of the Study:

Generally, it is expected that the change in working capital will be determined by the combined changes in the various economic indicators. The following model was used in the study:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Whereby:

$y = dependent\ variable\ (Current\ Ratio)$

$\beta_0 = constant\ factor$

$\beta_1 = Coefficient\ of\ independent\ variable\ X_1$

$X_1 = independent\ variable\ 1\ (Real\ GDP)$

$\beta_2 = Coefficient\ of\ independent\ variable\ X_2$

$X_2 = independent\ variable\ 2\ (Annual\ Inflation\ Rate)$

$\varepsilon = error\ term$

3.6 Data Analysis

Financial ratios were used to evaluate changes in working capital position. The aspect of working capital position examined in this study was liquidity of firms as represented by the average of the current ratios of the selected firms. Researchers in articles of early 1980s found that finance managers reported that they did not consider ratios very important in managing liquidity (John, Campbell, and Savoie, 1983). These same studies indicated that managers considered ratios more important as their firms became less liquid. Another study by Johnson, Campbell, and Wittenbach (1982) indicated that the primary tool used by managers to respond to liquidity problems is to decrease stocks levels.

The average of the current ratios for the thirty selected firms was computed for the period from year 2006 to 2010. Using the annual Coincident economic indicator as independent variables and the average annual financial ratios calculated as dependent variables, the correlation coefficient between the two variables was calculated to determine the relationship between changes in working position and changes in economic activity. Analysis of variance (ANOVA) was used to measure significance. The level of significance was taken at 5%. The statistical package for social sciences (SPSS) was used to analyze the data.

CHAPTER FOUR:

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

The objective in this study was to examine the relationship between working capital and selected economic indicators. The data used and the related variables are in appendix two. The selected economic indicators included Inflation (CPI), Real GDP and Unemployment rate. Unemployment rate data was incomplete hence was not used in the analysis. The independent variable, working capital ratio represented by the average of the current ratio of the thirty selected firms is also in the appendix two. This chapter presents the various findings and analyses on the economic indicators and working capital of small and medium enterprises. The relationship model between the selected economic indicators and working capital is presented in a regression equation and their significance tested at 95% level in a test of hypothesis. Besides, an analysis of variance to test the significance of relationship between the two predictor variables was carried out and the outcome outlined. Finally, information about the goodness of fit of a model is presented and explanations given.

NB: The assumption in this study was that the amount of working capital available for firms depends on economic conditions that exist at a point in time.

4.2 Data Presentation

4.2.1   Multiple Regression analysis and the regression equation

Multiple regression analysis was used to deduce the model that could be used to explain the relationship between the selected economic indicators and working capital.

Table 1 below shows the contribution of each variable in explaining working capital position as shown by standardized beta values which assess the contribution of each variable towards the prediction of the depended variable. Real GDP had the greatest on working capital with a change in Real GDP, holding Annual inflation rate constant, resulting to a 17.7% increase in the working capital.

Table 1 Regression analysis table

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.046	1.216		.861	.391
	Real GDP Rate (X1)	.108	.146	.177	.741	.460
	Annual Inflation Rate (X2)	.047	.068	.164	.686	.494
a. Dependent Variable: Current Ratio						

From the output in the table above, the overall equation as suggested in the conceptual framework can be represented by use of unstandardized coefficients as below. This means that even without the two variables under study, working capital is expected to be 1.046.

$$y = 1.046 + 0.108X_1 + 0.047X_2$$

4.2.2   Test of hypotheses

I wish to test whether at the 5% significance level, any of the predictor variables can be removed from the full model as unnecessary/ insignificant in predicting the working capital.

> **Hypothesis 1: Real GDP rate**

Step 1: Hypotheses 1

$H_0: \beta_0 = 0$ (Real GDP rate is a significant predictor of working capital)

$H_1: \beta_1 \neq 0$ (Real GDP rate is an insignificant predictor of working capital)

Step 2: Significance Level

$\alpha = 0.05$

Step 3: Rejection Region

Reject the null hypothesis if p-value ≤ 0.05.

Step 4: p-value

(See above) p-value=0.460

Step 5: Conclusion

Since p-value > 0.05, we shall accept the null hypothesis and reject the alternative hypothesis.

Step 6: Conclusion Statement

At $\alpha = 0.05$ level of significance, it can be concluded that the real GDP rate is a significant economic predictor variable.

➢ **Hypothesis 1: Real GDP rate**

Step 1: Hypotheses 2

$H_0: \beta_0 = 0$ (Annual inflation rate is a significant predictor of working capital)

$H_1: \beta_1 \neq 0$ (Annual inflation rate is an insignificant predictor of working capital)

Step 2: Significance Level

$\alpha = 0.05$

Step 3: Rejection Region

Reject the null hypothesis if p-value ≤ 0.05.

Step 4: p-value

(See above) p-value=0.494

Step 5: Conclusion

Since p-value > 0.05, we shall accept the null hypothesis and reject the alternative hypothesis.

Step 6: Conclusion Statement

At the $\alpha = 0.05$ level of significance, it can be concluded that the annual inflation rate is a significant working capital predictor variable.

4.2.3   Goodness of fit (R2)

R^2 is a statistic that will give some information about the goodness of fit of a regression model. In regression, the R^2 coefficient of determination is a statistical measure of how well the regression line approximates the real data points. An R^2 of 1.0 indicates that the regression line perfectly fits the data.

Table 2 Coefficient of multiple determinations (R^2)

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.061[a]	.004	-.010	1.32698

The coefficient of multiple determinations (R Square) is 0.004; therefore, about 0.4% of the variation in the working capital is explained by changes in inflation and GDP rates. Comparing the value of R^2 and adjusted R^2 gives a difference of 0.014 which is very small since its shrinkage is less than the 0.5 threshold suggested by Field (2005).

4.2.4 Analysis of variance (ANOVA)

Table 3 Analysis of variance

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.131	2	.566	.323	.725[a]
	Residual	257.523	147	1.752		
	Total	258.654	149			
a. Predictors: (Constant), Real GDP Rate, Annual Inflation Rate						
b. Dependent Variable: Current Ratio						

We wish to determine if, at 5% significance level, the model is useful for predicting the working capital. To achieve this, an analysis of variance was carried out. The output (SPSS) is as shown in Table 3 above.

We proceed as shown below:

Step 1: Hypothesis

$H0: \beta1 = \beta2 = 0$: There is no significant difference in the effects of the real GDP rate and the annual inflation rate on working capital.

$H1$: *at least one* $\beta i \neq 0$: At least one of the predictor variables has different effect on the working capital.

Step 2: Significance Level

$\alpha = 0.05$

Step 3: Rejection Region

Reject the null hypothesis if p-value ≤ 0.05.

Step 4: ANOVA Table (p-value)

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(See above) p-value = 0.725

Step 5: Conclusion

Since p-value > 0.05, we shall accept the null hypothesis.

Step 6: Conclusion statement

At the $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that there is no significant difference in the effects of the real GDP rate and the annual inflation rate on working capital; therefore the regression model above is useful.

4.3 Summary and Interpretation of the Findings

The two predictor variables (the real GDP rate and the annual inflation rate) under the study, both contributed positively to the working capital. This is evident from the regression equation as was obtained, i.e. $y = 1.046 + 0.108X_1 + 0.047X_2$. The two predictors contribute positively since their coefficients (i.e. 0.108 and 0.047) are all positive. This means that an increase in the value of real GDP rate translates to an increase in the value of the working capital. Likewise, an increase in the value of annual inflation rate translates to an increase in the value of the working capital.

Although there is a positive relationship between working capital and selected economic indicators, the relationship was a weak one represented a coefficient of multiple determinations (R^2) of 0.004 meaning only about 0.4% of the variation in working capital is explained by changes in inflation and GDP rates. Further, comparing the value of R^2 and adjusted R^2 we get a very small difference of 0.014.

It is also important to note that, from the hypothesis test carried out at 95% significance it was established that both the real GDP rate and the annual inflation rate are significant predictors of working capital.

The study also carried out analysis of variance to determine if the model is useful for predicting the working capital at 5% significance level and from the SPSS output the p-value of 0.725 achieved was greater than 0.5 hence it can be concluded that there was no significant difference

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in the effects of the Real GDP and the annual inflation rate on working; hence the regression model was useful.

There are previous studies on the same research topic whose outcome compared with this study. Gupta (1983) and Schall and Haley (1991), observed that business needs for working capital increase during expanding economic activity and decreases during contracting economic activity. The level of investment in working capital accounts should increase as economic activity increases and vice versa. Lamberson (1995) while using economic indicators as independent variables and financial ratios as dependent variable, explored relationship between changes in working capital position and changes in the level of economic activity, taking a sample of 50 small U.S. firms for the period 1980 to 1991. His study found evidence that liquidity slightly increased during economic expansion with no noticeable changes in liquidity during economic slowdowns. Further, according to Lambserson (1991), based on the matching principal, during economic expansion, it is likely that a firm's liquidity will have a down ward trend and the opposite is likely to happen during economic contraction. Ochieng (2006) in his study on the relationship between working capital of firms listed at NSE and the economic activity in Kenya found that liquidity of firms, as measured by the current and quick ratios, increases during economic expansion and decreases during economic slowdowns.

It was also important to investigate whether the effect of any of the two predictors on working capital is greater than the other or whether their differences are insignificant. The analysis of variance output as shown gave a significance value (P-value) of 0.725. This therefore calls for the rejection of the alternative hypothesis which suggests a difference in the effect of the two variables. Therefore the difference in the effect of the predictor variables is insignificant/ they have a more or less similar effect on the working capital.

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study aimed to empirically investigate the relationship between economic activity as represented by Real GDP, annual inflation rate and unemployment rate as the selected economic indicators representing the independent variables. Full data for unemployment rate under the period of study could not be retrieved from the Kenya National Bureau of Statistics hence it was not included in the analysis. Working capital ratios data as represented by current ratios of the 30 SMEs in Kenya selected were retrieved from annual performance survey report conducted by KPMG in conjunction with Ipsos Synovate Kenya. The main purpose of the study was to contribute to financial decisions on working capital of SMEs in Kenya after taking into account of the prevailing economic conditions, which is not a theme traditionally, focused inside corporate finance literature, especially in Kenya.

To determine if there is any relationship that existed between the selected economic indicators and working capital, the correlation coefficient between the two variables was calculated which yielded positive result as expected. Also to determine the goodness of fit of the regression model that was achieved, the R^2 was calculated and a result of 0.004 was achieved which signified that the relationship was not a strong one.

The study found out that inflation was a significant economic predictor variable (p-value of 0.494 against 0.05 level of significance). This means that working capital decisions are affected by inflation. This is according to expectations. Real GDP rate was another significant economic indicator which responded positively according to expectation with a significant effect on the working capital position of SMEs (p-value of 0.460 against 0.05 level of significance).

According to the outcome of the research regression equation, the two predictor variables (the real GDP and the annual inflation rate), both contributed positively to the working capital. The

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study also found out from the test of the hypothesis carried out at 95% significance that both Real GDP rate and annual inflation rate are significant predictors of working capital.

5.2 Conclusions

Working capital management is highly important in SMEs as it is used to generate further returns to stakeholders; however, it has attracted less attention of researchers and practitioners. When working capital is managed improperly, allocating more than enough of it will render management non-efficient and reduce the benefits of short term investments. On the other hand, if working capital is too low, the company may miss a lot of profitable investment opportunities or suffer short term liquidity crisis leading to degradation of company's credit, as it cannot respond effectively to temporary capital requirements.

Government agencies such as Kenya National Bureau of Statistics, the Central Bank, the ministry of labor and others not mentioned, which are tasked with the responsibility of collecting and storing data in regards to economic indicators such as the GDP rate, annual inflation rate and even unemployment rate, all should be serious with their responsibilities and carry out regular surveys on these economic indicators. This is because although such indicators are very important to the government during policy formulations, they are also used at individual levels by serious companies when compiling and coming up with their financial and overall company performance forecast.

Working capital management is an integral function of any organization especially those organizations whose nature entail carrying a high proportion of their assets and liabilities in working capital hence it is a function that should be treated with the kind of attention it deserves. Furthermore, companies in Kenya operates in a dynamic environment whose economic indicators keeps on changing and normally small and medium business organizations are the worst affected with those changes. This call for a thorough scrutiny of the economic environment by financial managers of SMEs in order to plan and forecast appropriately taking into account the changes expected in the economic environment in which they operate in.

5.3 Policy Recommendations

The study could not give conclusive results as far as unemployment rate as an economic indicator is concerned as there was no consecutive annual unemployment data available from the Kenya Bureau of Statistics. Unemployment rate is such a serious national economic indicator of which the ministry of national planning should take seriously and annual surveys on unemployment rates in Kenya are determined. This will help economic planners during their economic policy formulation.

The study concludes that working capital management might be a cause of small business failure and recommends financial management training for the managers of SMEs and the recruitment of field officers by the government to provide counsel and other non-financial services to the small business operators so as to help improve their working capital management efficiency levels. The SMEs managers should invest their cash surpluses in ventures that yield high returns such as treasury bills rather than in current accounts and make use of computerized accounting packages to help improve their efficiency in working capital management.

Generally, working capital of financial institutions is different from other firms and it would be interesting to find out how finance managers of these institutions manage their working capital and if at all their finance managers lay any emphasis on the same.

The government of Kenya through the relevant ministries such as the ministry of planning and national development should be funded adequately and enough budget allocated to such ministries for onward disbursement to the relevant parastatals such as Kenya National Bureau of Statistics. This will ensure that such bodies are able to carry out survey and research in the economic environment and compile appropriate data that will be readily available to interested parties for their utilization.

5.4 Limitations

The study was carried out based on secondary data available from KPMG Kenya and Kenya National Bureau of Standards. It was assumed that the financial reports that were used by KPMG to compile the current ratios were accurate and that all disclosures were made by Finance managers and accountants. In the study, it was assumed that the finance managers actually understood the importance of working capital strategies and hence employs sound ones. This might not be true in some cases.

Time period (2006-2010) included in this study did not provide sufficient time and relatively stable economic conditions in which trends in working capital management could be adequately observed. Therefore, conclusions of this study concerning small firms, although provided useful insight into the behavior of small firms with respect to their management of working capital as changes occur in economic activity, a clearer picture could be observed if the time period extended to a further period, say ten years.

The researcher set out to study the effects of three economic indicators namely Real GDP rate, Inflation rate, and Unemployment rate. Full data for unemployment rate could not be gathered hence only two economic indicators were used. Probably if more other economic indicators were used such as interest rates, etc, then a clearer picture could be achieved.

5.5 Suggestions for further studies

The present limitations can be addressed in future or further studies.

One proposition is that a further research be carried out in understanding whether finance managers of small firms in Kenya indeed employ any sort of strategy in working capital management taking into consideration the prevailing economic conditions at a point in time.

Further, probably a more comprehensive study covering a long period of time say twenty years with several economic indicators should be carried out when the economy is stable with no erratic movements in economic indicators.

Lastly, a similar research should be carried out on financial institutions specifically microfinance sector in order to determine the behavior of their working capital in relation to changes in economic activity. This is because financial institutions' working capital composition is much different say from a manufacturing organization.

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APPENDIX 1: List of SMEs in Nairobi

1. Jungle Macs EPZ Ltd
2. Pentapharm Ltd
3. Kema E.A. Ltd
4. P.G. Bison Kenya Ltd
5. MukuruweiniWakulima Dairy
6. Software Technologies Ltd
7. Kentons Ltd
8. SBO Research Ltd
9. Lee Construction Ltd
10. Satguru Travels & Tours Ltd
11. Dawa Ltd
12. Trans Business Machines
13. Unes Ltd
14. Health Care Direct
15. Print Fast Ltd
16. Gap Marketing Ltd
17. Radar Ltd
18. Spice World Ltd
19. Victoria Furniture Ltd
20. Muranga Forwarders Ltd
21. Investeq Capital Ltd
22. Canon Aluminum Fabricators Ltd
23. Kenbro Industries Ltd
24. Lantech Africa Ltd
25. Chemicals & School Supplies Ltd
26. Oasis Ltd
27. Seasons Restaurants & Hotels Ltd
28. Charleston Travel Ltd

29. Sheffield Steel Systems Ltd

30. Sunpower Products Ltd

31. Biselex Kenya Ltd

32. Planning Interiors Ltd

33. Furniture International Ltd

34. Master Power Systems Ltd

35. BBC Auto Spares Lts

36. Transport & Lifting Services Ltd

37. General Aluminum Fab Ltd

38. Computer Planet Ltd

39. Vajra Drill Ltd

40. Autotech Systems Ltd

41. Tyremasters Ltd

42. Complast Industries ltd

43. Hebattulah Brothers Ltd

44. Optiware communications Ltd

45. Ganatra Plant & Equipment Ltd

46. Africa Tea brothers Ltd

47. Sai Pharmaceuticals Ltd

48. Silverbird Travel Plus Ltd

49. Warren Enterprises Ltd

50. Pelican Signs Ltd

51. Nairobi Garments Enterprises Ltd

52. Chemserve Cleaning Services Ltd

53. Gina Din Corporation Ltd

54. Madhu paper Kenya Ltd

55. Kevian Kenya Ltd

56. Biodeal Laboratories

57. Viva Product Line Ltd

58. Capital Colours Creative Design Ltd

59. Kinpash Enterprises Ltd

60. Faram E.A. Ltd

61. The Phoenix Ltd

62. Kandia Fresh Produce Supplies Ltd

63. Dalco Kenya Ltd

64. Union Logistics Ltd

65. Creative Edge Ltd

66. Market power International Ltd

67. Waumini Insurance Brokers Ltd

68. Stoic Fleet Watch

69. R&R Plastics Ltd

70. East Africa Elevator Company Ltd

71. Alpine Coolers Ltd

72. Specialized Aluminum Renovators Ltd

73. Panesars Ltd

74. Nationwide Electricals Industries Ltd

75. Tool Crafts Ltd

76. Circuit Business Systems Ltd

77. Sahajanand Enterprises Ltd

78. Wines of The World Ltd

79. Airtouch Cooling Systems Ltd

80. Hardware & Welding Supplies Ltd

81. Limelight Creative Ltd

82. Axel Engineering and Manufacturing Ltd

83. Virgin Tours Ltd

84. Skylark Creative Products Ltd

85. EggenJoinex Ltd

86. Desbro Engineering Ltd

87. Tiger Brands Kenya Ltd

88. Catalyst Travels Ltd

89. Professional Clean care Ltd

90. Premier Industries Ltd

91. Chuma Fabricators Ltd

92. Prafulchandra& Bothers Ltd

93. Parapet Ltd

94. Rongai Workshop & Transport Ltd

95. ZaverchandPunja Ltd

96. Travelshoppe Co. Ltd

97. Eurocon Tiles & Products Ltd

98. Global Trade Market place

99. VarsaniBraklining Ltd

100. Rangechem Pharmaceuticals Ltd

APPENDIX 2: Working capital & Economic indicators data used

A: Current ratio data of 30 selected firms:

Serial No.	Company / Organization Name	Sector	Current Ratio				
			2006	2007	2008	2009	2010
1	General Aluminium Fab Ltd	Manufacturing	3.66	3.86	3.28	3.73	3.71
2	Manji Food Industries	Manufacturing	1.89	2.23	1.63	1.95	1.82
3	Trufoods Ltd	Manufacturing	1.79	2.21	2.24	1.45	1.54
4	Rosewood Furniture Manufacturers	Manufacturing	1.21	1.39	1.39	1.45	1.76
5	Panesar's Kenya Limited	Manufacturing	1.35	1.53	1.49	1.15	0.87
6	Dawa Limited	Manufacturing	2.42	2.88	1.24	2.43	2.32
7	Hebatullah Brothers Ltd	Retail	1.18	2.39	2.24	1.68	1.78
8	Chemicals & School Supplies Limited	Retail	3.57	3.78	3.36	3.64	4.82
9	International Paper & Board Supplies Ltd	Retail	1.64	1.69	1.66	1.62	1.62
10	Wines of the World Limited	Retail	1.28	1.42	1.39	1.56	1.63
11	Viva Productline Limited	Retail	3.87	4.22	4.20	5.46	4.48
12	House Wife's Paradise	Retail	0.89	1.07	1.02	0.99	1.17
13	Health Care Direct	Health	2.64	2.99	2.96	2.78	1.97
14	Kentons Limited	Health	1.20	1.23	1.20	1.28	1.66
15	Rangechem Pharmaceuticals Ltd	Health	0.82	0.98	0.95	0.91	0.94
16	Physical Therapy Services Ltd	Health	0.75	0.98	0.92	1.01	1.08
17	Faram EA Limited	Health	1.17	1.27	1.23	1.19	1.29
18	Baus Optical Company Limited	Health	7.94	8.32	7.65	2.92	1.42
19	Biselex Kenya Limited	Construction	1.16	1.24	1.20	1.25	1.70
20	Lee Construction Ltd	Construction	4.27	4.92	4.84	1.85	1.24
21	Philafe Engineering Ltd	Construction	1.79	1.84	1.79	1.83	1.88
22	Kirloskar Kenya Limited	Construction	0.94	1.08	0.88	1.41	1.47
23	Vajra Drill Limited	Construction	0.96	1.02	0.93	1.11	1.13
24	Ganatra Plant &	Construction	1.21	1.47	1.43	1.33	1.33

	Equipment Ltd						
25	Trans Business Machines	Information Technology	1.53	1.58	1.08	1.15	1.36
26	Cellnet Limited	Information Technology	1.47	1.58	1.54	1.46	1.66
27	Techno Brain	IT and Business	0.67	0.83	0.81	1.74	1.13
28	Microskills IT (K) Ltd	Information Technology	1.22	1.24	1.21	1.25	1.27
29	Software Technologies Ltd	Information Technology	1.34	1.36	1.32	2.94	2.08
30	Express Automation Ltd	IT and Telecommunication	1.05	1.43	1.41	1.53	1.20

B: Selected Economic Indicators:

YEAR	ANNUAL WEIGHTED AVERAGE INDEX	ANNUAL INFLATION RATE	REAL GDP RATE IN %	UNEMPLOYMENT RATE
2006	76.95	6.0	6.3	12.7
2007	80.24	4.3	7.0	
2008	92.36	16.2	1.5	40.0
2009	102.09	10.5	2.6	
2010	106.26	4.1	5.6	