

**THE RELATIONSHIP BETWEEN LIQUIDITY AND  
PROFITABILITY OF NONFINANCIAL COMPANIES LISTED IN  
NAIROBI SECURITIES EXCHANGE**

**BY**

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## DECLARATION

This Research Project is my original work and has not been presented for any academic award in any university.

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# TABLE OF CONTENT

|  |            |
|--|------------|
| <b>ACKNOWLEDGEMENTS .....</b>                                | <b>iii</b> |
| <b>DEDICATION.....</b>                                       | <b>iv</b>  |
| <b>LIST OF TABLES .....</b>                                  | <b>ix</b>  |
| <b>LIST OF FIGURES .....</b>                                 | <b>x</b>   |
| <b>LIST OF ABBREVIATIONS .....</b>                           | <b>xi</b>  |
| <b>ABSTRACT.....</b>   | <b>xii</b> |
| <b>CHAPTER ONE .....</b>                                     | <b>1</b>   |
| <b>INTRODUCTION.....</b>                                     | <b>1</b>   |
| 1.1 Background of the Study.....                             | 1          |
| 1.1.1 Liquidity .....  | 4          |
| 1.1.2 Profitability.....                                     | 6          |
| 1.1.3. Relationship between Liquidity and Profitability..... | 8          |
| 1.1.4 Nairobi Securities Exchange .....                      | 9          |
| 1.2 Research Problem.....                                    | 10         |
| 1.3 Research Objective.....                                  | 12         |
| 1.4 Value of the Study.....                                  | 12         |
| <b>CHAPTER TWO .....</b>                                     | <b>14</b>  |
| <b>LITERATURE REVIEW .....</b>                               | <b>14</b>  |
| 2.1 Introduction .....                                       | 14         |
| 2.2 Theoretical Review .....                                 | 14         |

|   |           |
|---|-----------|
| 2.2.1 Keynesian Theory of Money .....                       | 14        |
| 2.2.2 Baumol Inventory Model.....                           | 15        |
| 2.2.3 The Modern Quantity Theory.....                       | 16        |
| 2.2.4 Miller and Orr’s Cash Management Model.....           | 16        |
| 2.2.5 Trade off Theory of Liquidity .....                   | 17        |
| 2.3 Determinants of Profitability.....                      | 18        |
| 2.4 Empirical Review .....                                  | 20        |
| 2.4.1 International Evidence .....                          | 20        |
| 2.4.2 Local Evidence .....                                  | 27        |
| 2.5 Summary of Literature Review .....                      | 29        |
| <b>CHAPTER THREE .....</b>                                  | <b>31</b> |
| <b>RESEARCH METHODOLOGY .....</b>                           | <b>31</b> |
| 3.1 Introduction .....                                      | 31        |
| 3.2 Research Design.....                                    | 31        |
| 3.3 Population.....   | 31        |
| 3.4 Data Collection.....                                    | 32        |
| 3.5 Data Analysis .....                                     | 33        |
| 3.5.1 Analytical Model .....                                | 33        |
| 3.5.2 Variables and Variable Measurement and Selection..... | 34        |
| 3.5.3 Test of Significance .....                            | 35        |
| <b>CHAPTER FOUR.....</b>                                    | <b>37</b> |

|   |           |
|---|-----------|
| <b>DATA ANALYSIS, RESULTS AND DISCUSSION.....</b>   | <b>37</b> |
| 4.1 Introduction .....  | 37        |
| 4.2 Descriptive Analysis .....  | 37        |
| 4.3 Quantitative Analysis .....   | 39        |
| 4.3.1 Test for multi-collinearity.....  | 40        |
| 4.4 Regression Analysis .....   | 41        |
| 4.4.1 Test for Autocorrelation/ Serial Correlation.....                                       | 42        |
| 4.5 Interpretation of the Findings.....   | 44        |
| <b>CHAPTER FIVE .....</b>   | <b>45</b> |
| <b>SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>  | <b>45</b> |
| 5.1 Introduction .....  | 45        |
| 5.2 Summary .....   | 45        |
| 5.3 Conclusion.....   | 46        |
| 5.4 Recommendations for Policy .....  | 47        |
| 5.5 Limitations of the Study .....  | 47        |
| 5.6 Suggestions for Further Research .....  | 48        |
| <b>REFERENCES.....</b>  | <b>49</b> |
| <b>APPENDICES .....</b>   | <b>55</b> |
| <b>APPENDIX I: LISTED NONFINANCIAL COMPANIES AS AT 31<sup>ST</sup> DECEMBER<br/>2013.....</b> | <b>55</b> |

|  |           |
|--|-----------|
| <b>APPENDIX II: FINANCIAL DATA OF THE NONFINANCIAL COMPANIES LISTED IN THE NSE .....</b> | <b>57</b> |
| <b>APPENDIX III: COMPANIES EXCLUDED FROM THE STUDY.....</b>                              | <b>64</b> |



## LIST OF TABLES

|   |    |
|---|----|
| Table 4.1: Descriptive statistics.....                      | 38 |
| Table 4.2: Pearson's Correlation Coefficients Analysis..... | 39 |
| Table 4.3: Model Summary.....                               | 41 |
| Table 4.4: Analysis of Variances (ANOVA).....               | 42 |
| Table 4.5: Regression Coefficients (ROA).....               | 43 |

## **LIST OF FIGURES**

|  |    |
|--|----|
| Figure 1.1 Relationship between liquidity and profitability..... | 9  |
| Figure 2.1 Miller and Orr's Cash Management Model.....           | 17 |

## **LIST OF ABBREVIATIONS**

|                |   |
|----------------|---|
| CA             | Current Assets                          |
| CCC            | Cash Conversion Cycle                   |
| CL             | Current Liabilities                     |
| CR             | Current Ratio                           |
| CV             | Coefficient of Variation                |
| EBIT           | Earnings Before Interest and Tax        |
| GPM            | Gross Profit Margin                     |
| Ln             | Natural Logarithm of Sales              |
| LR             | Cash Ratio                              |
| NASI           | NSE All Share Index                     |
| NOM            | Net Operating Margin                    |
| NSE            | Nairobi Securities Exchange             |
| QR             | Quick Ratio/Acid Test Ratio             |
| ROA            | Return on Assets                        |
| ROCE           | Return on Capital Employed              |
| ROE            | Return on Equity                        |
| ROI            | Return on Investment                    |
| SD             | Standard Deviation                      |
| SG             | Sales Growth                            |
| SPSS           | Statistical Package for Social Sciences |
| WCM            | Working Capital Management              |
| R <sup>2</sup> | Coefficient of Determination            |

## **ABSTRACT**

Liquidity management and profitability are very important issues in the growth and survival of business and the ability to handle the trade-off between the two is of great concern for financial managers. This study has investigated the relationship between liquidity and profitability of nonfinancial companies listed in the NSE. The objective of the study was to establish the relationship between liquidity and profitability of nonfinancial companies listed in the Nairobi securities exchange. The study adopted a descriptive research design that enabled the researcher to meaningfully describe a distribution of scores or measurements using various statistics. The study covered 39 listed nonfinancial companies in NSE Kenya. Analysis was based on data extracted from audited annual financial statements of listed nonfinancial companies for a period of five years from year 2009 to 2013. Correlation and regression analysis were employed to establish the relationship between liquidity and profitability. The ROA was used as proxy for companies' profitability and the companies' liquidity was measured using the current ratio, quick ratio and the absolute liquid ratio. Firm size, sales growth and firms' leverage were used as the control variables. Findings established a significant weak positive relationship between liquidity and profitability with a Spearman correlation coefficient of 0.398 and  $R^2$  of 15.9% among the listed nonfinancial companies in Kenya. However, the findings are based on a study conducted on the nonfinancial companies listed in the NSE; hence the results are not generalizable to non-listed companies. Secondly, the sample only comprises nonfinancial companies. Therefore, the results are not valid for the financial companies. The study recommends the following for policy and investment decisions: The trading companies should maintain an optimal liquidity level so as to maximize company's profitability and shareholders' wealth. Trading companies should pursue profit maximization since so doing simultaneously enhances liquidity. Investors should be guided by the true liquidity and profitability positions of a company in making their investment decisions.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The importance of liquidity management as it affects corporate profitability in today's business cannot be over emphasized. Proper management of working capital is required in maintaining liquidity in day-to-day operation to ensure the smooth running and meeting obligation as they fall due (Eljelly, 2004). Liquidity plays a significant role in the successful functioning of nonfinancial companies. A company should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions. A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business (Bhunia, Khan and Mukhuti, 2011). Dilemma in liquidity management is to achieve desired tradeoff between liquidity and profitability (Nasr and Raheman, 2007). Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a nonfinancial company can maintain in order to ensure positive impact on its profitability.

The concern of business owners and managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholders wealth. Liquidity management is considered from the perspective of working capital management as most of the ratios used for measuring corporate liquidity are a function of the components of working capital.

Liquidity and its management determines to a great extent the growth and profitability of a nonfinancial company. This is because either inadequate liquidity or excess liquidity may be injurious to the smooth operations of the organization (Janglani and Sandhar, 2013). Non financial companies are no exception to this problem of excess liquidity or inadequate liquidity and they have to maintain an optimal liquidity level as they pursue their profitability objective.

Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the company. It deals with current assets and current liabilities (Nasr and Raheman, 2007). Financial liquidity and profitability are equally important and the core enterprise activities may not function efficiently if the two are ignored (Ajanthan, 2013). The growth of an enterprise financial liquidity may negatively affect the company profitability. If the company is too liquid it will influence negatively the company profitability since resources will be held up in current assets. For a business to run effectively and efficiently there has to be proper flow of working capital which is defined as the net current assets or the current assets less current liabilities. Management of working capital has profitability and liquidity implications (Bhunja et al., 2011). While a company's prime objective is to maximize profitability and increase shareholders wealth, there is need to obtain a balance between liquidity and profitability in conducting the day to day operations to ensure its smooth running and meets the obligation the company (Eljelly, 2004).

Liquidity entails meeting obligations as they fall due and striking a balance between the current assets and current liabilities. For a match between short term assets and liabilities, proper working capital management practices require to be embraced through shortening of the cash conversion cycle. This will ensure sufficient liquidity level which guards an enterprise from external funding which comes at a cost (Oduol, 2011). A liquid company takes advantage of available investments, cash discounts and lower interest charges on borrowings. Jensen (1986) observes that companies are strained when their level of liquidity is low and have negative working capital. Companies find themselves in a state where they are unable to pay their obligation on due dates. Nonfinancial institutions must ensure that they maintain an optimal level of liquidity even though no regulations are imposed by any regulator for them to maintain a certain liquidity level.

The ultimate objective of any firm is to maximize the profit. But, preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a tradeoff between these two objectives of the firms. One objective should not be at cost of the other because both have their importance. If we do not care about profit, we cannot survive for a longer period. On the other hand, if we do not care about liquidity, we may face the problem of insolvency or bankruptcy. For these reasons liquidity management for nonfinancial companies should be given proper consideration and will ultimately affect the profitability of the company. Eichengreen and Gibson (2001) observed that the fewer the amounts of funds tied up in liquid investments, the higher the expected profitability. Chong and Sufian (2008) argue that liquidity risk from the inability of a

company to handle decrease in liabilities or to fund increase in the assets thus liquidity is considered an important determinant of profitability for nonfinancial companies.

### **1.1.1 Liquidity**

Dalgaard (2009) describes Liquidity as the degree to which an asset or security can be bought or sold in the market without affecting the asset's price. He further explains that a liquid asset is characterized by a high level of trading activity and plays a vital role in the functioning of financial markets. Markets are liquid when those who have assets holdings can sell them at prices that do not involve considerable losses so as to gain the finance they need to fulfill other commitments (Amihud, 2002).

According to Mahavidyalaya, Niranjana and Suvaran (2010) the term liquidity refers to the capability of a firm to meet short term financial obligations [that is Current Liabilities (CL)] by converting the short term assets [that is Current Assets (CA)] into cash without suffering any loss. The liquidity of a firm actually depends on the effective management of the composition of CA vis-a-vis CL. A business enterprise making no profit may be considered as sick but one having no liquidity will die soon. As a matter of fact, liquidity is a necessary condition (or a pre-requisite) for the very survival of a nonfinancial company. The liquidity position of a firm is generally analyzed with the help of some important ratios computed on the basis of different constituents of working capital either in isolation or in aggregate or both.



The ratios reflecting the liquidity position of a company as identified by Mahavidyalaya et al. (2010) includes the Current Ratios (CR): It is the ratio of current assets to current liabilities; Quick Ratio (QR) / Acid Test Ratio: It is the ratio of quick assets to Current liabilities; Absolute Liquid Ratio/ cash ratio: Cash and near cash is the most liquid asset. Absolute liquid ratio is more accurate test of liquidity than current ratio and liquid ratio (Bhunja et al., 2011) and the Cash Conversion Cycle (CCC). The cash conversion cycle is used as a comprehensive measure of working capital management (WCM). The cash conversion cycle is simply [number of days accounts receivable + number of days inventory - number of days accounts payable]. Number of days accounts receivable is calculated as [accounts receivable x 365]/sales. Number of days inventories is [inventories x 365]/cost of sales. Number of days accounts payable is [accounts payable x 365]/purchases.

Naser, Nuseibeh and Hadeya (2013) in the study of factors influencing corporate working capital management concluded that short CCC is expected to result in positive operating cash flows; this gives indication about working capital management, companies with short CCC tend to have more cash flows than companies with long CCC implying that companies reporting high operating cash flows have high net liquid balance.

The management of working capital affects the liquidity and the profitability of the corporate firm and consequently its net worth (Smith, 1980). Working capital management therefore aims at maintaining a balance between liquidity and profitability while conducting the day to day operations of business concern. Inefficient working

capital management not only reduces the profitability of business but also ultimately lead to financial crisis (Chowdhury and Amin, 2007).

A company's ability to sustain its short-term debt-paying ability is important to all users of financial statements. If the company cannot keep a long-term debt-paying ability, nor will it be able to satisfy its stockholders. Even a very profitable company will find itself bankrupt if it fails to meet its obligations to short-term creditors. The ability to pay current obligations when they fall due is also related to the cash-generating ability of the company. Analyzing the short-term debt-paying ability of the company, reveal a close relationship between the current assets and the current liabilities. Generally, the current liabilities will be paid with cash generated from the current assets. The profitability of the firm does not determine the short-term debt-paying ability. In other words, using accrual accounting, the company may report very high profits but may not have the ability to pay its current bills because it lacks available funds. If the entity reports a loss, it may still be able to pay short-term obligations (Nimer, Warrand and Omari, 2013). The aim of this study is to establish whether there is any relationship between a company liquidity and profitability of the nonfinancial companies listed in the Nairobi securities exchange.

### **1.1.2 Profitability**

Every business is most concerned with its profitability. Profitability is the ability to make profit from all the business activities of an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. One of the most frequently used tools of measuring profitability is profitability ratios.

Profitability ratios show a company's overall efficiency and effectiveness. Profitability is related to the goal of shareholders of wealth maximization, and investment in current assets is made only if an acceptable return is obtained. While liquidity is needed for a company to continue business, a company may choose to hold more cash than needed for operational or transactional needs or for precautionary or speculative reasons. If there will be an unjustifiable over investment in current assets then this would negatively affect the rate of return on assets (vishnani and shah, 2007). Managers of nonfinancial companies must ensure maximum return from the investments of their principal and therefore must ensure they invest resources in high yielding ventures other than holding excess investments in current assets.

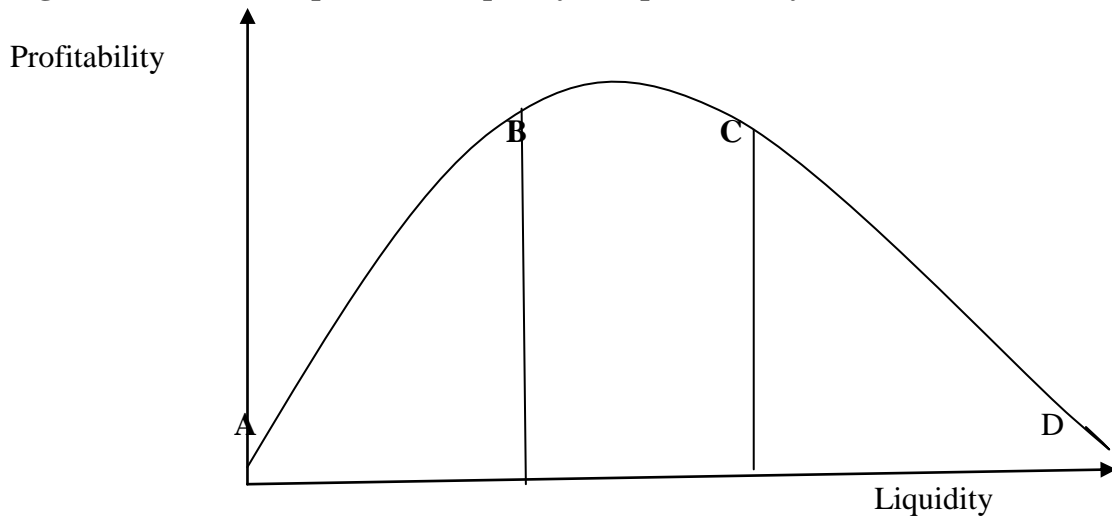
Janglani and Sandhar (2013) identified the following Measures of corporate profitability; two major types of profitability ratios are computed: profitability in relation to sales and profitability in relation to investment. Gross profit margins (GPM), net operating margin (NOM), return on assets (ROA), return on equity (ROE), and return on capital employed (ROCE) are the main measures of profitability. Therefore, profit is an absolute measure and profitability is a relative measure of efficiency of the operations of an enterprise. Nonfinancial companies must earn profit to survive and grow over a long period of time. Profits are essential, but all management decision should not be profit centered at the expense of the concerns for customers, employees, suppliers or social consequences. The profitability ratios are calculated to measure the operating efficiency of the company.

According to Janglani and Sandhar (2013) Return on Assets (ROA) expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA measures management's ability to earn a return on the firm's resources (assets). The income amount used in this computation is income before the deduction of finance costs, since finance cost is the return to creditors for the resources that they provide to the company. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is also computed on a pretax basis using EBIT as the return measure. This results in a ROA measure that is unaffected by differences in a firm's tax position as well as financing policy, ROA is computed by dividing earnings before interest and tax by total asset.

### **1.1.3. Relationship between Liquidity and Profitability**

A company must preserve adequate amount of liquidity to meet its daily obligations but liquidity in excess of what is adequately required by the company to finance its operations may be counter-productive. The liquidity requirement of firms differs depending on the circumstances of the company (Pandy, 2005). Theoretically a company requires preserving a liquidity level that is not detrimental to its profitability. Empirical evidence shows a negative correlation between liquidity and profitability but a company cannot operate with zero liquidity in order to maximize its profits. This relationship is depicted using figure 1.1; liquidity increase leads to increase in profitability (point A to B) up to a certain point where any further increase in liquidity; profitability remains constant (point B to C) beyond this point any further increase in liquidity will lead to decrease in profitability (point C to D).

**Figure 1.1 Relationship between liquidity and profitability**



**Source: Mahavidyalaya et al. (2010)**

#### **1.1.4 Nairobi Securities Exchange**

In Kenya, dealing in shares and stocks started in the 1920's when the country was still a British colony. Trading took place on a 'gentleman's' agreement. In 1951, an Estate Agent by the name of Francis Drummond established the first professional stock broking firm. He also approached the then Finance Minister of Kenya, Sir Ernest Vasey and impressed upon him the idea of setting up a stock exchange in East Africa. The two approached London Stock Exchange officials in 1953 and the London officials accepted to recognize the setting up of the Nairobi Stock Exchange (NSE) as an overseas stock exchange.

In 1954 the Nairobi Stock Exchange was then constituted as a voluntary association of stockbrokers registered under the Societies Act. At the dawn of independence in 1963, stock market activity slumped, due to uncertainty about the future of independent Kenya.

In year 2006 live trading on the automated trading systems of the Nairobi Stock Exchange was implemented. In 2008, the NSE All Share Index (NASI) was introduced as an alternative index. Its measure is an overall indicator of market performance. The Index incorporates all the traded shares of the day. In 2011, the Nairobi Stock Exchange Limited changed its name to the Nairobi Securities Exchange Limited. The change of name reflected the strategic plan of the Nairobi Securities Exchange to evolve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. This study seeks to establish the relationship between liquidity and profitability of nonfinancial companies listed in the Nairobi securities exchange and the NSE is the ultimate market for the research.

## **1.2 Research Problem**

The study of profits is important not only because of the information it provides about the health of the economy in any given year, but also because profits are a key determinant of growth and employment in the medium-term. Changes in profitability are an important contributor to economic progress. The existence, growth and survival of a business organization mostly depend upon the profit which an organization is able to earn. The profitability of the organization will definitely contribute to the economic development of the nation by way of providing additional employment and tax revenue to government exchequer. Moreover, it will contribute the income of the investors by having a higher dividend and thereby improve the standard of living of the people (Aremu et al, 2013).

Mwangi, Muathe and Kosimbei (2014) identified that a number of public and private companies have been under statutory management in the last decade, including the Kenya Planters Co-operative Union KPCU (2010), Ngenye Kariuki Stockbrokers (2010), Standard Assurance (2009), Invesco Assurance (2008), Hutchings Beimer (2010), Discount Securities (2008), Uchumi Supermarkets (2006), and Pan Paper Mills (2009). Uchumi supermarket Ltd annual report (2005, p 10) reported that the company had a tight cash flow position that made it difficult for the company to maintain supplier relations and consistent supplies. This condition led to loss of customers to competition and worsened the cash flow position which resulted into receivership. Based on these cases of corporate failures, it is therefore worth investigating the effect of liquidity on profitability of nonfinancial companies listed on the NSE.

Companies listed at NSE are viewed as essential element of a healthy and vibrant economy (Waweru, 2011). A number of studies on the relationship between working capital management and financial performance have been done in Kenya though no research has been conducted to establish the relationship between liquidity and profitability of listed nonfinancial companies in Kenya. Most of the studies carried out focus on working capital management policies and corporate performance. For instance, Shin and Soenen (1998) conducted a study on the relationship between CCC and corporate profitability of listed American firms' and found a strong negative relationship. Deloof (2003) investigated whether working capital management affect profitability of Belgian firms and found a negative relationship between a firm's profitability and liquidity on listed companies in Saudi Arabia. Apuoyo (2010) studied the relationship

between working capital management policies and profitability of companies listed at NSE and found a positive relationship between conservative WCM policy and profitability. Waweru (2011) in the study of relationship between WCM and firm value of companies listed at NSE found a negative relationship between cash collection period, inventory turnover, CCC and firm profitability. Waithaka (2012) carried out a similar study and found a negative relationship. As mentioned earlier no study has been done on the relationship between liquidity and profitability of nonfinancial companies listed in the NSE, this study seeks to bridge the gap by undertaking a study on the same. This study intends to address the research question; Does a relationship exist between liquidity and profitability of the nonfinancial companies listed at the NSE?

### **1.3 Research Objective**

To establish the relationship between liquidity and profitability of the nonfinancial companies listed at the Nairobi securities exchange.

### **1.4 Value of the Study**

The purpose of the study is to identify whether a relationship exists between profitability and liquidity of the nonfinancial companies listed in the Nairobi securities exchange. In business cash is an important thing, without cash company cannot survive and to take advantage of business opportunities, it's necessary to maintain liquidity position to overcome the difficulties. The working capital management plays an important role for success or failure of firm because of its effect on firm's profitability as well as on liquidity. The study will enable the managers to establish optimal liquidity levels and



adopt better working capital management policies. The research will enable the policy makers to devise standards in establishing an appropriate level of liquidity for firms and come up with more effective methods of managing liquidity levels of a company. The study will also enable the investors to know the kind of information to be disclosed by firms on the financial statements as pertains to liquidity and profitability. Finally, the study will be of importance to academics and scholars. The study will add to the existing body of knowledge on the liquidity and how liquidity impact on profitability. This study makes recommendations that will be of significance to those who may wish to carry out further studies in the area. The study also provides a base for further research especially in the areas of liquidity. The study is also of importance to the management of companies as they will be able to use the information as a base for making decisions, understand its importance and observe the trend of the impact of liquidity on profitability.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides information from studies on topics related to the research problem. It examines what various scholars and authors have said about the relationship between liquidity and company's profitability. The chapter is divided into four main areas: theoretical review, determinants of profitability, empirical review and summary of literature review.

#### **2.2 Theoretical Review**

Theories are analytical tools for understanding, explaining, and making predictions about a given subject matter. There are various theories with regard to liquidity management and profitability as discussed below.

##### **2.2.1 Keynesian Theory of Money**

Keynes (1936) in his study "The general Theory of employment, interest and money" identified three reasons why liquidity is important, the speculative motive, the precautions motive and the transaction motive. The speculative motive is the need to hold cash to be able to take advantage of, for example, bargain purchase, and favorable exchange rate fluctuations in the case of international firms. For most firms, reserve borrowing ability and marketable securities can be used to satisfy speculative motives. Precautionary motive is the need for a safety supply to act as a financial reserve. Once

again, there is probably a precautionary motive for liquidity. However, given that the value of money market instruments is relatively certain and that instruments such as Treasury bills are extremely liquid; there is no real need to hold substantial amount of cash for precautionary purpose. The transaction motive is the need to have cash on hand to pay bills. Transactions related needs come from collection activities of the firm. The disbursement of cash includes the payment of wages and salaries, trade debts, taxes and dividends. Therefore there is need for a firm to be liquid in order to meet the three needs. The implication of this theory is that a company needs to maintain a level of liquidity which may have impact on its profitability.

### **2.2.2 Baumol Inventory Model**

Baumol (1952) developed the inventory model to determine the amount of cash an entity should hold. The Baumol model is based on the Economic Order Quantity (EOQ). The objective is to determine the optimal target cash balance. Baumol made the following assumptions in his model; The firm is able to forecast its cash requirements with certainty and receive a specific amount at regular intervals; The firm's cash payments occur uniformly over a period of time that is; a steady rate of cash outflows; the opportunity cost of holding cash is known and does not change over time; cash holdings incur an opportunity cost in the form of opportunity foregone; the firm will incur the same transaction cost whenever it converts securities to cash. The limitations of the Baumol model are as follows; assumes a constant disbursement rate; in reality cash outflows occur at different times, different due dates; assumes no cash receipts during the projected period, obviously cash is coming in and out on a frequent basis; no safety stock

is allowed for, reason being it only takes a short amount of time to sell marketable securities. This theory therefore requires a target cash balance to be maintained by the company; this may impact negatively on the company's profitability because of holding idle cash.

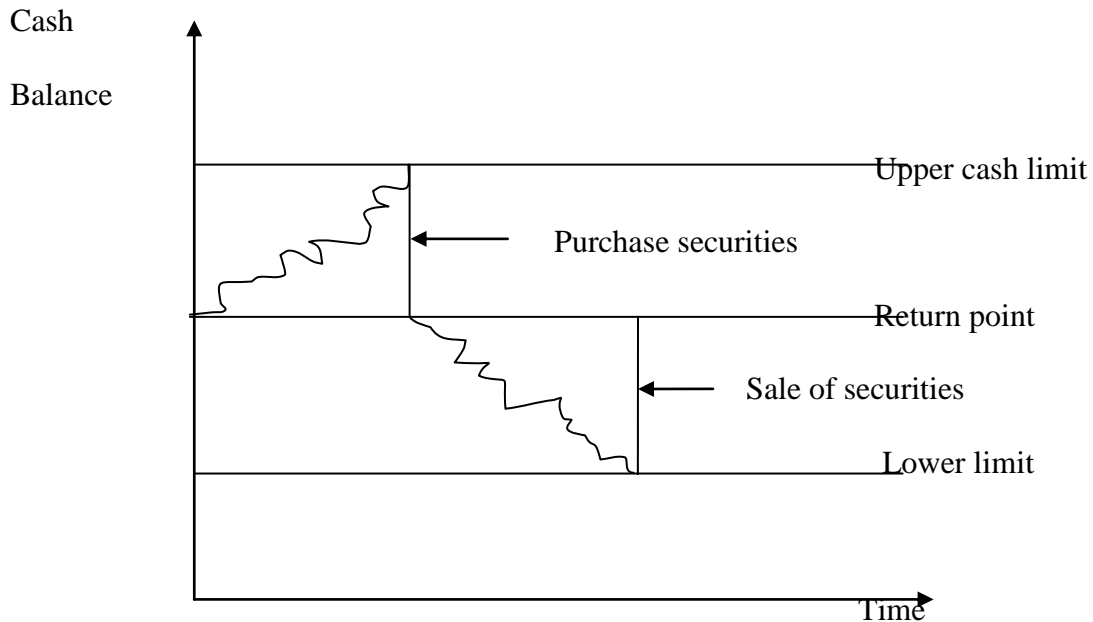
### **2.2.3 The Modern Quantity Theory**

Friedman (1956) restated the quantity theory of money, a theory of demand for money and this "modern quantity theory" has become the basis of news put forward by monetarists. In this theory, money is seen as just one of a number of ways in which wealth can be held, along with all kinds of financial asset, consumer durables, property and human wealth. According to Friedman, money has a convenience yield in the sense that its holding saves time and effort in carrying transactions. Holding wealth in terms of excess cash does not increase shareholders wealth rather it erodes because it loses purchasing power thereby impacting on profitability negatively.

### **2.2.4 Miller and Orr's Cash Management Model**

Miller and Orr (1966) came up with another model of cash management. As per the Miller and Orr's model of cash Management the companies let their cash balance move within two limits the upper limit and the lower limit. The companies buy and sell the marketable securities only if the cash balance is equal to any one of these. The model rectified some of the deficiencies of the Baumol model by accommodating a fluctuating cash flow situation stream that can either be inflow or outflow. The Miller-Orr's model has an upper limit and lower limit as shown in the figure 2.1 below:

**Figure 2.1 Miller and Orr's Cash Management Model**



**Source: Waweru (2011)**

### **2.2.5 Trade off Theory of Liquidity**

Under perfect capital market assumptions holding cash neither creates nor destroys value. The firm can always raise funds from capital markets when funds are needed, there are no transaction costs in raising these funds, and the funds can always be raised at a fair price because the capital markets are assumed to be fully informed about the prospects of the firm. The trade-off theory suggests that firms target an optimal level of liquidity to balance the benefit and cost of holding cash. The cost of holding cash includes low rate of return of these assets because of liquidity premium and possibly tax disadvantage. The benefits of holding cash are in twofold: First the firms save transaction costs to raise funds and do not need to liquidate assets to make payments. Secondly the firm can use liquid assets to finance its activities and investment if other sources of funding are not

available or are extremely expensive. As theory, the use of trade off model cannot be ignored, as it explains that, firms with high leverage attracts high cost of servicing the debt thereby affecting its profitability and it becomes difficult for them to raise funds through other sources (Jensen, 1986).

## **2.3 Determinants of Profitability**

Profit is the most important financial measure to most businesses. In order to survive and succeed in a competitive market firms must focus on maximizing profit, or they will eventually be driven out of business (Dutta and Radner, 1999). Jovanovic (1982) supports this claim by saying that only efficient firms stay in the market, and that less productive firms will eventually exit the market. Many companies are thus very understandably interested in what factors influence profits. The existing literature on firm profits point to several key determinants of profits as discussed below.

### **2.3.1 Liquidity**

Mahavidyalaya et al. (2010) observed that firm's profitability is highly influenced by different liquidity ratios taken as the explanatory variables. Different components of working capital influence profitability differently. Therefore the change of composition of working capital should be analyzed to get a clear picture about the corresponding change in the profitability of a firm. Bolek (2013) argues that connected to the liquidity - working capital is a very important element of a company financial management since it affects the profitability linked to a level of risk. Moreover it can be assumed that the more the liquid the company is, the lower risk is associated with such an entity and moreover

the more liquid the company, the less profitable it is. This suggests that profitability decreases with increase in liquidity. There is need to balance working capital position of the business enterprise in order to maintain adequate liquidity, minimize risks and raise profitability (Janglani and Sandhar, 2013).

### **2.3.2 Productivity**

Stierwald (2010) documented that productivity is measured as the degree of cost-efficiency in the production process. There are a number of reasons why some firms operate more cost-efficiently than others. Potential factors are lower average costs of production, better quality of products and services or higher output quantities produced with fewer inputs. Higher productivity levels can also be the result of strategic management or due to employing state-of-the-art technologies or a highly skilled workforce. Stierwald (2010) further argues that there is another way of interpreting the positive link between productivity and profitability. It could be that the level of productivity is the result of firms' innovative activity. The rationale behind it is that investments into research and development (R&D) raise the probabilities of introducing product, process or organizational innovation which, if successful, lead to increases in profitability.

### **2.3.3 Firm Size**

Stierwald (2010) found positive and significant parameter estimate for firm size. The study shows that bigger firms are more profitable than smaller firms. The size of a firm significantly enhances its performance. Stierwald (2010) suggested a possible reason is

that large firms exploit scale economies and benefit from economies of scope. An alternative interpretation is that large firms can access capital at lower costs than small firms.

### **2.3.4 Leverage**

The results of the study by Bothwell, Cooley and Hall (1984) indicate that higher leveraged firms (with relatively high liabilities) are more profitable. Evidently, the more extensively firms use debts as the source of financing the higher its profits. An explanation can be that more profitable firms have had easier access to debt financing and do not need to rely exclusively on equity capital. Alternatively, it could be argued that higher leveraged firms bear greater risks of bankruptcy and need to compensate stakeholders with higher profits.

## **2.4 Empirical Review**

This section gives evidence of what other researchers have observed and the findings in their study relating to the relationship between liquidity and profitability. Empirical evidence is the record of one's direct observations or experiences which has been analyzed quantitatively or qualitatively.

### **2.4.1 International Evidence**

Shin and Soenen (1998) investigated the relationship between a measure of the cash conversion cycle and corporate profitability in their study of a large sample of listed



American firms for the period 1975-1994; they found a strong negative relation. This result indicates that managers can create value for their shareholders by reducing the cash conversion cycle to a reasonable minimum.

Deloof (2003) investigated the relation between Working Capital Management (WCM) and corporate profitability for a sample of 1,009 large Belgian nonfinancial firms for the 1992-1996 periods. Number of days' accounts receivable, inventories and accounts payable were used as measures of trade credit and inventory policies. The cash conversion cycle is used as a comprehensive measure of WCM. Using descriptive, correlation and regression analysis, the results of the study found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms. The results suggested that managers can create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The results also shown a negative relation between accounts payable and profitability which is consistent with the view that less profitable firms wait longer to pay their bills.

Eljelly (2004) examined the relationship between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) on a sample of 929 joint stock companies in Saudi Arabia. Using correlation and regression analysis the study found significant negative relationship between the firm's profitability and its liquidity level, as measured by current ratio. The study also revealed that the relationship is more evident in firms with high current ratios and longer cash conversion cycles. At the industry level,

however, the study found that the cash conversion cycle or the cash gap is of more importance as a measure of liquidity than current ratio that affects profitability. The size variable is also found to have significant effect on profitability at the industry level.

Charitou, Elfani and Lois (2010) empirically investigated the effect of working capital management on firm's profitability: evidence from an emerging market, data set was obtained from firms listed in the Cyprus Stock Exchange for the period 1998-2007. Using multivariate regression analysis, the results indicated that the cash conversion cycle and all its major components; namely, days in inventory, days' sales outstanding and creditors' payment period – are inversely associated with the firm's profitability.

Chary, Kasturi and Kumar (2011) stressed that effective working capital decisions contribute to the profitability and attainment of overall objectives of an entity on one hand and provide liquidity to the firm on the other. In their study using data available from H.G. Pharma Ltd, during the period 2003-2008 in India found that investment in total current assets has a negative correlation with the profitability with a coefficient of -0.81. This concludes that excess investment in working capital has adverse effect on profitability. Further Chary et al. (2011) found a strong negative correlation of -0.83 on the relationship between levels of inventory and profitability. This indicates that excess investment in inventory results in low profitability. They also observed that current ratio has a strong negative correlation with profitability. This concurs to the theory that excess working capital results in low profitability.

Bhunias et al. (2011) investigated effectiveness of working capital in terms of short-term liquidity of the private sector steel companies in India; data on current ratio, liquid ratio, absolute liquid ratio, short-term debt-equity ratio, age of inventory, age of debtors, and age of creditors was obtained from samples of private sector steel companies from the year 1997 to 2006. The correlation and regression results indicated that there is a high relationship existing between liquidity and profitability of all the selected steel companies under the study. Working capital management is important part in firm financial management decision. The optimal of working capital management could be achieved by firm that manages the tradeoff between profitability and liquidity. Thus, firm manager should concern on inventory and receivables in purpose of creation of shareholder wealth.

Obida and Owolabi (2012) carried out a study on liquidity management and corporate profitability on manufacturing companies listed on the Nigerian stock exchange, the result of the study was obtained using descriptive analysis and the finding shows that liquidity management measured in terms of the companies Credit Policies, Cash Flow Management and Cash Conversion Cycle has significant impact on corporate profitability and it is concluded that managers can increase profitability by putting in place good credit policy, short cash conversion cycle and an effective cash flow management procedures.

Mahavidyalaya and Ray (2012) studied the impact of working capital management components on corporate profitability using a sample of 311 Indian manufacturing firms

for a period of 14 years from 1996/97 to 2009/10. The study used different variables of working capital management including the average collection period, inventory turnover in days, average payment period, cash conversion cycle and current ratio, debt ratio, size of the firm and financial assets to total assets ratio on the net operating profitability of Indian firms. The results of the study found that the optimal working capital management could be achieved by firms that manage the tradeoff between profitability and liquidity. Their study found a strong negative relationship between the measures of working capital management including the number of days' accounts receivables and cash conversion cycle with corporate profitability.

Ashraf (2012) investigated the relationship between working capital efficiency and profitability using a sample of 16 Indian firms, listed on Bombay Stock Exchange for a period of five years starting from 2006 to 2011, by examining the effect of different variables of working capital management including the Debt ratio, Average collection period, Inventory turnover in days, Average payment period, Cash conversion cycle and Current ratio on the Net operating profitability of sample firms. Descriptive and Regression analysis were used. It was concluded that there is a strong negative relationship between variables of working capital and firm's profitability except the sales (Size of the company) which had a positive relationship between size of the firm and its profitability. A significant negative relationship between debt used by the firm and its profitability was also concluded.

Vural, Sokmen and Cetenak (2012) investigated the effects of working capital management on firm's performance using secondary data collected from 75 manufacturing firms listed on Istanbul Stock Exchange Market for the period 2002-2009. From the panel data it was concluded that there are significant relations between working capital management and firm performance. The results show that collection period of account receivables and cash conversion cycle are negatively related with firm's profitability and this means by shortening collection period and cash conversion cycle firms can increase their profitability. According to results, relationship between other working capital management components and firm's profitability is insignificant. Relationship between leverage and firm's profitability is negative while the relationship between firm size and firm's profitability is positive. Leverage as a control variable has a significant negative relationship with firm value and profitability of firms. This means, increase in the level of leverage will lead to decline in the profitability of the firm and the value of the firm.

Arshad and Gondal (2013) studied the relationship between working capital management and profitability of Pakistan cement sector using quantitative method of research approach using ratios of 21 listed cement companies in Karachi stock exchange during the period of 2004 – 2010, the result of study showed that there is significant negative relationship between working capital management on profitability of the firms.

Mutenheri and Zawaira (2013), in their study of the association Between Working Capital Management and Profitability of Non-Financial Companies Listed on the

Zimbabwe Stock Exchange, using a sample of 32 non-financial companies, regression results show that profitability was not associated with receivables collection period, inventory conversion period, cash conversion cycle, quick ratio, current asset to total asset ratio, current liabilities to total asset ratio, debt ratio and age of company. However, a negative and significant relationship between payables deferral period and profitability was found. In addition, liquidity and size were found to enhance profitability of firms. They concluded that firms can enhance profitability by shortening the payables deferral period.

Asiedu and Ebenezer (2013) in the study on the relationship between working capital management and profitability of listed manufacturing companies in Ghana, the regression results found out that, the major component of working capital management such as inventory days, account payable and cash conversion cycle have influence on the profitability of manufacturing companies. The cash conversion cycle was found to have a positive but insignificant effect on profitability, account payable days and inventory days in the study has negative coefficient but also has insignificant effect on profitability of manufacturing companies. The study recommended that, manufacturing companies should adopt efficient and effective ways of efficiently managing these components of working capital management.

The study by Majeed et al. (2013) investigated the relationship of cash conversion cycle and profitability of firms of Pakistani firms using a sample of 32 companies selected randomly from three manufacturing sectors i.e. chemical, automobiles and construction

& material for the period of five years from 2006 to 2010. The correlation and regression analyses were used to examine the relationship of CCC with performance of the firms: Return on Assets (ROA), Return on Equity (ROE) and Operating Profit (EBIT). The study revealed a negative relationship between the different variables of cash conversion cycle on firms' performance. The results suggested that managers can create value for their shareholders by reducing the number of days for accounts receivables. In addition, the negative relationship suggests that less profitable firms will pursue a decrease of their accounts receivables in an attempt to reduce their cash gap in the CCC. Managers can improve profitability by reducing the credit period granted to their customers.

#### **2.4.2 Local Evidence**

Apuoyo (2010) investigated the relationship between working capital management policies and profitability for companies quoted at the NSE using a sample of 19 listed companies for a period of five years and found that the firm's profitability as measured by ROA increases with firm's size, gross working capital efficiency and with a lesser aggressiveness of the asset management. Thus, contrary to the traditional theory of asset management, where a conservative policy is expected to sacrifice profitability at the expense of liquidity, the research study found out that there is a positive relationship between a conservative working capital management policy and the profitability of the companies quoted at the NSE.

Waweru (2011) in the study of the relationship between working capital management and the value of companies quoted at the Nairobi stock exchange using secondary data

obtained from a sample of 22 companies annual reports and audited financial statement for a period of seven years from 2003 to 2009 concluded that a negative relationship between average cash collection period, inventory turnover in days, cash conversion cycle and value of the firm existed. It further indicated a positive relationship between value of the firm and average payment period. This means that the managers can increase the value of their respective firms by handling correctly the cash conversion cycle and keeping each different component of working capital management at an optimal level. More specifically managers can increase value for their respective firms by reducing average cash collection period, inventory turnover period, cash conversion cycle and delaying payments to the suppliers.

Waithaka (2012) investigated the relationship between working capital management practices and financial performance of agricultural companies listed at the Nairobi securities exchange. Data from 7 listed agricultural companies in Kenya for a period of five (2007-2011) was used. The correlation analysis revealed that there a negative relationship exists between the accounts collection period and financial performance, the result suggests that firms can improve their profitability by reducing the number of days accounts receivable are outstanding. A positive relationship between Inventory Conversion period and ROA was identified, this means that that maintaining high inventory levels reduces the cost of possible interruptions in the production process and the loss of business due to stock out costs.



Mwangi et al. (2014) investigated the effect of working capital management on the performance of non-financial companies listed in the Nairobi Securities Exchange (NSE), Kenya. The study employed an explanatory non-experimental research design. A census of 42 non-financial companies listed in the Nairobi Securities Exchange, Kenya was taken. Using ROA and ROE as the dependent variable and working capital management as the independent variable, Feasible Generalized Least Square (FGLS) regression results revealed that an aggressive financing policy had a significant positive effect on return on assets and return on equity while a conservative investing policy was found to affect performance positively. The study recommended that managers of listed non-financial companies should adopt an aggressive financing policy and a conservative investing policy should be employed to enhance the performance of non-financial companies listed in the NSE, Kenya.

## **2.5 Summary of Literature Review**

From the review of empirical literature, it can be noted that most of the studies carried out on the relationship between the working capital management of firm and profitability revealed a negative relationship between a company's liquidity and profitability. This means that as the firms liquidity increases, its profitability decreases. Theoretical literature requires a company to maintain an optimal level of liquidity. This reveals a contradiction between theory and empirics. Excess investments in current assets may result in low profitability and lower investment in current assets may result in poor liquidity. It's therefore imperative that management finds a trade-off between liquidity and profitability to maximize shareholders wealth. In addition a firm may not survive

without adequate working capital. Effective liquidity optimization is critical to all organizations. An organization having a proper set of liquidity management policies and procedures will improve profits, reduce the risk of corporate failure and significantly improve its chances of survival. Liquidity also provides a strategic advantage especially in difficult economic times. Effective liquidity management will enable an organization to derive maximum benefits at minimal cost. It can therefore be concluded that the survival of a business entity depend extensively on its ability to meet its current obligations as they fall due. Therefore the firm must identify the optimal level of liquidity so that it can guarantee itself for its survival and also meet its bottom line objective of being profitable.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter explains the research design, the population of interest, sample design, data collection and the data analysis.

#### **3.2 Research Design**

Research design is the procedures for collection and analysis of data in a manner that aims to combine relevance of the research purpose with economy during research process. The study adopted a descriptive research design. A descriptive research design enables the researcher to meaningfully describe a distribution of scores or measurements using various statistics (Mugenda and Mugenda, 2003). Descriptive design provides the general overview giving some valuable pointers as to what variables are worth testing quantitatively. This was appropriate since it offered the researcher dual opportunities of observing and analyzing the historical data without bias (Waweru, 2011).

#### **3.3 Population**

Mugenda and Mugenda (2003) define a population as the entire group of individuals, events or objects having a common observable characteristic. The population of this study will comprise the 44 nonfinancial companies listed in the NSE. The companies in the financial sector were excluded from the study due to the uniqueness of the environment in which they operate and to remove any anomalies associated with this

sector which is highly regulated by the central bank prudential on issues of liquidity, asset and capital holding, and provision for bad debts among other factors (Mwangi et al. 2014). The study adopted a census approach because of the small number of non-financial companies in the NSE. According to Mwangi et al. (2014) a census approach enhances validity of the collected data by including certain information-rich cases for study. (Appendix I)

### **3.4 Data Collection**

The researcher used secondary source of data. The study utilized panel data which consist of time series and cross-sections. A combination of time series with cross-sections enhances the quality and quantity of data to levels that would otherwise be impossible to achieve with only one of the two dimensions (Mwangi et al. 2014). Data on liquidity and profitability were extracted from the audited financial statements of the listed nonfinancial companies at the NSE. Two types of financial statements were used; the audited statement of financial position and the statement of comprehensive income. The period of data collection was from 2009 to 2013 covering five years. The specific data collected for the five years period is in form of annual profit before tax, current assets, current liabilities, non-current assets, accounts receivable, prepayments, cash and bank balances, short term investments, sales/turnover, noncurrent liabilities and inventory for each year of study. The NSE was the ideal source of the secondary data for carrying out this study based on availability, accessibility, and reliability of the data (Aduda, Masila and Onsongo, 2012). The data assisted in showing the liquidity and the profitability of the nonfinancial listed companies in the NSE.

### 3.5 Data Analysis

Data was analyzed through the use of descriptive statistics, correlation analysis and multiple linear regression analysis. The multiple linear regression models were used to estimate the causal relationships between ROA and the independent variables and control variables. SPSS version 20 software was used for the analysis of the different variables in the study.

#### 3.5.1 Analytical Model

A multiple linear regression was used to analyze the relationship between the liquidity and the profitability of the nonfinancial companies listed at the Nairobi securities exchange.

The study used the following conceptual model:

$$ROA=f (CR, QR, LR, SG, FIRM SIZE, DR,)$$

The model was modified from Waithaka (2012) who studied the Relationship between Working Capital Management Practices and Financial Performance of Agricultural Companies Listed at the Nairobi Securities Exchange so as to include liquidity and profitability control variables. Other studies that have used similar model includes the studies carried out by Ajanthan (2013), Arshad and Gondal (2013), Bhunia (2011), Deloof (2003) and Mwangi et al (2014).

The empirical model was thus:

$$ROA_{it} = \beta_0 + \beta_1 (CR) + \beta_2 (QR) + \beta_3 (LR) + \beta_4 (LnTA) + \beta_5 (SG) + \beta_6 (DR) + \varepsilon$$

Where;

ROA<sub>it</sub> = Return on assets of a company i at time t;

$B_0$  = the intercepts of equation (the constant);

$\beta_i$  = Coefficients of independent variables of company  $i$  which measures the change in ROA for a unit change in independent variable;

$t$  = Time in years; 1, 2... 5 years;

$i = 1 \dots n$ , where  $n$  is the total number of companies;  $n = 39$ ;

CR = Current Ratio;

QR = Quick Ratio;

LR = Cash/Liquid Ratio;

LnTA = Natural Logarithm of Total Assets;

SG = Sales Growth;

DR = Debt Ratio;

$\varepsilon$  = the error term (residual).

### **3.5.2 Variables and Variable Measurement and Selection**

Mugenda and Mugenda (2003) define a variable as a measurable characteristic that assumes different values among the subjects. The dependent variable was defined as the profitability of the firms. The independent variable was interpreted as the commonly used liquidity ratios. The ratios used are chosen from those utilized by Bhunia et al. (2011), Ajanthan (2013) and Janglani & sandhar (2013). The dependent variable that was used is ROA. The researcher considered ROA as the best measure of profitability since it measures the return on all assets utilized in generating the profit for the period. ROA is computed by dividing the profit before interest and tax by the book value of total assets multiplied by 100. The independent variables used in the study included the following;

current ratio (CR) obtained by dividing current assets by current liabilities; acid test ratio or quick ratio (QR) obtained by dividing current assets net of inventories by current liabilities and the cash ratio (LR) obtained by dividing cash plus short term investments by current liabilities.

The control independent variables identified by the researcher in the study of the relationship between liquidity and profitability of nonfinancial companies listed in the NSE included the following; Firm size, sales growth and the debt ratio. Control variables are those variables that are likely to influence the research results (Mugenda and Mugenda, 2003). The control independent variables were calculated as follows: firm size was the natural logarithm of total assets (LnTA); sales growth (SG) = [(this year's sales - previous year's sales)/previous year's sales] multiplied by 100 and the debt ratio (DR) was determined by dividing the total liabilities by the total asset multiplied by 100.

### **3.5.3 Test of Significance**

Since this study sought to establish the relationship between liquidity and profitability of nonfinancial companies listed in the NSE, a correlation design was used for the purpose of the study. A correlation analysis attempts to determine the degree and direction of relationship between variables under the study. In a multivariate distribution, if the variables have the cause and effect relationship, they have high degree of correlation between them. Regression analysis was used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. Significance of coefficient values at 5% and 1% levels of significance was

tested using the  $R^2$ , Analysis of Variances (ANOVA), the t and the F statistics.  $R^2$  was used to measure the amount of variation in the dependent variable (ROA) which is explained by the variation in the independent variables. F Statistic is a statistic which essentially compares Sum of Square due to Regression to Sum Square due to Error. It enabled a hypothesis test to be carried out on the significance of the regression model. The t statistic was used to measure how well a particular independent variable predicts the dependent variable if all other predictors are not included or are assumed constant.



## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents data analysis, interpretation and discussion of the research findings. The findings are divided into two types: Descriptive results and those obtained from correlation and regression analysis. The statistical package for social sciences SPSS version 20 was used for both types of analysis. The findings were presented using tables. Data from this study was collected from the 39 listed nonfinancial companies on the NSE for the period 2009 to 2013. The total number of companies listed on the NSE as at 31<sup>st</sup> December 2013 was 44 companies. The study only included 39 companies. The five companies were excluded from the study for reasons relating to delisting while others were suspended. (Appendix III).

#### **4.2 Descriptive Analysis**

Table 4.1 shows the descriptive statistics presenting the mean, standard deviation, maximum values and minimum values of the different variables used in the study.

**Table 4.1: Descriptive statistics**

|         | N   | Minimum  | Maximum  | Mean      | Std. Deviation |
|---------|-----|----------|----------|-----------|----------------|
| ROA     | 195 | -22.3135 | 65.9032  | 12.183594 | 12.1640197     |
| CR      | 195 | .2015    | 22.4492  | 2.240736  | 2.8733322      |
| QR      | 195 | .0998    | 22.4394  | 1.723136  | 2.8526450      |
| LR      | 195 | .0032    | 7.8824   | .562260   | 1.1564354      |
| LnTA    | 195 | 11.1409  | 19.0555  | 15.634317 | 1.7387710      |
| DR      | 195 | 3.8647   | 109.0048 | 47.738163 | 20.5471161     |
| SG      | 195 | -65.6763 | 221.4526 | 13.063250 | 35.0893238     |
| Valid N | 195 |          |          |           |                |

**Source: Research Findings**

Table 4.1 above shows the mean, standard deviation, minimum values and maximum values for 39 companies listed on Nairobi Stock Exchange for years 2009 to 2013. The descriptive statistics show that over the period under study, profitability as measured by return on assets has a minimum -22.31% with a maximum of 65.9% and an average ROA of 12.18% with a standard deviation of 12.16%. Furthermore, the minimum current ratio was 0.20 and a maximum of 22.45. The minimum quick ratio was 0.1 and a maximum of 22.44 and the minimum cash ratio was 0.00325 with a maximum of 7.88. The mean values of current ratio were 2.24 with a standard deviation of 2.87, the mean values of quick ratio was 1.72 with a standard deviation of 2.85 and the mean values of cash ratio was 0.56 with a standard deviation of 1.156. These ratios as used to measure companies liquidity shows a health liquidity position of the companies listed on the NSE. These ratios were in line with those of standard conventional rule of 2:1 and 1:1 for current ratio

and quick ratio respectively. It can therefore be concluded that the nonfinancial companies listed on the NSE have maintained a healthy liquidity position and therefore they are in a position to meet short term obligations as they fall due.

### 4.3 Quantitative Analysis

Pearson's correlations are calculated for all the variables used in the study and the results are as shown in table 4.2 below. The Table presents correlation co-efficient for the variables used to measure liquidity whereas financial performance is measured by return on total assets.

**Table 4.2: Pearson's Correlation Coefficients Analysis**

|  |                     | ROA     | CR      | QR      | LR      | LnTA    | DR      | SG    |
|--|---------------------|---------|---------|---------|---------|---------|---------|-------|
| ROA  | Pearson Correlation | 1       | .294**  | .286**  | .229**  | -.039   | -.319** | .169* |
|  | Sig. (2-tailed)     |         | .000    | .000    | .001    | .590    | .000    | .018  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| CR   | Pearson Correlation | .294**  | 1       | .985**  | .500**  | -.321** | -.429** | -.018 |
|  | Sig. (2-tailed)     | .000    |         | .000    | .000    | .000    | .000    | .803  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| QR   | Pearson Correlation | .286**  | .985**  | 1       | .516**  | -.288** | -.414** | -.001 |
|  | Sig. (2-tailed)     | .000    | .000    |         | .000    | .000    | .000    | .992  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| LR   | Pearson Correlation | .229**  | .500**  | .516**  | 1       | -.018   | -.411** | .133  |
|  | Sig. (2-tailed)     | .001    | .000    | .000    |         | .806    | .000    | .063  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| LnTA   | Pearson Correlation | -.039   | -.321** | -.288** | -.018   | 1       | .090    | .119  |
|  | Sig. (2-tailed)     | .590    | .000    | .000    | .806    |         | .211    | .097  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| DR   | Pearson Correlation | -.319** | -.429** | -.414** | -.411** | .090    | 1       | -.048 |
|  | Sig. (2-tailed)     | .000    | .000    | .000    | .000    | .211    |         | .503  |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| SG   | Pearson Correlation | .169*   | -.018   | -.001   | .133    | .119    | -.048   | 1     |
|  | Sig. (2-tailed)     | .018    | .803    | .992    | .063    | .097    | .503    |       |
|  | N                   | 195     | 195     | 195     | 195     | 195     | 195     | 195   |
| **. Correlation is significant at the 0.01 level (2-tailed). |                     |         |         |         |         |         |         |       |
| *. Correlation is significant at the 0.05 level (2-tailed).  |                     |         |         |         |         |         |         |       |

**Source: Research Findings**

Correlation analysis was used to determine the strength and direction of the linear relationship between the variables under consideration (Table 4.2). The results indicate that all the predictor variables namely: current ratio (CR), quick ratio (QR), cash ratio (LR) has positive but weak relationship with profitability as measured by Return on Asset (ROA). The correlation coefficients of CR, QR and LR with ROA is 0.294, 0.286 and 0.229 respectively are found to be statistically significant at 1% level of significance with ROA. ROA is positively correlated with sales growth (SG). This is statistically significant at 5% level. This indicates that as the firms sales increases the profitability will also increase. The ROA has a negative but insignificant relationship with firm's size as measured by the total assets. This may be the case where the firm's assets are under utilized in generating profits. Further ROA is negatively correlated with the firm's leverage. This is statistically significant at 1% level of significant. This means that the firm's profitability will decrease as the firm's leverage increases. This may be the case due to increased finance costs.

#### **4.3.1 Test for multi-collinearity**

Table 4.2 shows high correlation between current ratio (CR) and quick ratio (QR) of 0.985 which was statistically significant at 1% level of significant. This was corrected by dropping the quick ratio (QR). The QR was dropped because it had a weak relationship with the dependent variable (ROA) of 0.286 compared to CR with a 0.294.

## 4.4 Regression Analysis

The researcher conducted a multiple linear regression analysis so as to investigate the impact of the components of working capital management on financial performance. The model used for the regression analysis is expressed in the general form as follows;

$$ROA_{it} = \beta_0 + \beta_1 (CR) + \beta_2 (QR) + \beta_3 (LR) + \beta_4 (LnTA) + \beta_5 (SG) + \beta_6 (DR) + \varepsilon$$

**Table 4.3: Model Summary**

| Model Summary <sup>b</sup>                      |                   |          |                   |                            |                   |          |     |     |               |               |
|---|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
| Model   | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               | Durbin-Watson |
|   |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |               |
| 1   | .398 <sup>a</sup> | .159     | .136              | 11.3038202                 | .159              | 7.130    | 5   | 189 | .000          | 1.190         |
| a. Predictors: (Constant), SG, CR, LnTA, DR, LR |                   |          |                   |                            |                   |          |     |     |               |               |
| b. Dependent Variable: ROA                      |                   |          |                   |                            |                   |          |     |     |               |               |

**Source: Research Findings**

From table 4.3, it can be observed that there exists a weak positive correlation between the independent variables and the dependent variable of 0.398. This means that as the liquidity of listed nonfinancial companies increases their profitability also increases and as the liquidity decreases the profitability increases. These results are consistent with the findings of Mutenheri and Zawaira (2013), however they contradict the findings of Shin & Soenen (1998), Deloof (2003), Eljelly (2004) who found a strong negative relationship between liquidity and profitability. The reasons for this contradiction may further be explored in future researches. This can be argued that as companies listed in the NSE maintains sufficient liquidity, it is in a position to pay its suppliers on time and therefore it is guaranteed of continuous supply of goods. This minimizes the risk of stock outs and the costs associated with stock outs. Saving on stock out costs makes the firm to be profitable. The R<sup>2</sup> of 15.9% shows that the independent variables can only explain/cause

15.9% of the changes in the dependent variable. The 84.1% balance can only be explained by other factors that influences profits. This shows that liquidity is not only the determinant of profitability but there are other factors that require to be identified through further studies. The F statistics of 7.130 is statistically significant at 5% level of significant. This shows that there is a statistically significant relationship between the dependent variable and the independent variables.

#### 4.4.1 Test for Autocorrelation/ Serial Correlation

The Durbin Watson statistic of 1.190 indicates that there is no auto correlation between the observations of the dependent variables and therefore multiple regressions is suitable for the analysis. In presence of auto correlation time series analysis would be suitable.

**Table 4.4: Analysis of Variances (ANOVA)**

| ANOVA <sup>a</sup>                              |            |                |     |             |       |                   |
|---|------------|----------------|-----|-------------|-------|-------------------|
| Model   |            | Sum of Squares | df  | Mean Square | F     | Sig.              |
| 1   | Regression | 4555.164       | 5   | 911.033     | 7.130 | .000 <sup>b</sup> |
|   | Residual   | 24149.730      | 189 | 127.776     |       |                   |
|   | Total      | 28704.895      | 194 |             |       |                   |
| a. Dependent Variable: ROA                      |            |                |     |             |       |                   |
| b. Predictors: (Constant), SG, CR, LnTA, DR, LR |            |                |     |             |       |                   |

**Source: Research Findings**

Table 4.4 show the sum of squares due to regression is 4555.164 and the sum of squares due to error (residual) is 24149.730. This indicates that the variations that are explained by the independent variables are much less than the variations explained by other factors not captured in the model. The unexplained variations forms the basis of further studies

to establish what mainly influences profitability of nonfinancial companies listed in the NSE.

**Table 4.5: Regression Coefficients (ROA)**

| Coefficients <sup>a</sup> |                             |            |                           |       |        |                                 |             |                         |      |        |
|---------------------------|-----------------------------|------------|---------------------------|-------|--------|---------------------------------|-------------|-------------------------|------|--------|
| Model                     | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig.   | 95.0% Confidence Interval for B |             | Collinearity Statistics |      |        |
|                           | B                           | Std. Error | Beta                      |       |        | Lower Bound                     | Upper Bound | Tolerance               | VIF  |        |
|                           | 1                           | (Constant) | 12.652                    |       |        | 8.505                           |             | 1.487                   | .139 | -4.126 |
|                           | CR                          | .858       | .364                      | .203  | 2.359  | .019                            | .140        | 1.576                   | .603 | 1.659  |
|                           | LR                          | .173       | .857                      | .016  | .202   | .840                            | -1.518      | 1.864                   | .670 | 1.492  |
|                           | LnTA                        | .193       | .503                      | .028  | .383   | .702                            | -.799       | 1.184                   | .862 | 1.160  |
|                           | DR                          | -.130      | .045                      | -.220 | -2.878 | .004                            | -.219       | -.041                   | .764 | 1.309  |
|                           | SG                          | .054       | .024                      | .157  | 2.304  | .022                            | .008        | .101                    | .964 | 1.038  |

a. Dependent Variable: ROA

**Source: Research Findings**

Table 4.5 shows the  $\beta$  coefficients of the model of the form;

$$ROA_{it} = \beta_0 + \beta_1 (CR) + \beta_2 (QR) + \beta_3 (LR) + \beta_4 (LnTA) + \beta_5 (SG) + \beta_6 (DR) + \varepsilon$$

The predictive model for the companies listed in the NSE was therefore formulated as follows;  $ROA_{it} = 12.652 + 0.858 CR + 0.173 LR + 0.193 LnTA + 0.054 SG + -0.130 DR$

The coefficient shows that ROA increases by 0.858 if CR is increased by 1 unit at 95% level of significance. The results are statistically significant with a P value of 0.019 at 5% level of significant. This means that as the firm increases its investment in current assets, the firm's profitability shall also increase. The results also indicate that an increase in cash ratio (LR) by 1 unit would increase profitability by 0.173 at 95% level of significance. This is statistically insignificant with a P value of 0.840 at 5% level of significance. A commonly given rule of thumb is that multi-collinearity exists when Tolerance is below 0.1 and values of Variance Inflation Factor (VIF) that exceed 10 are

often regarded as indicating multi-collinearity. From the analysis to test whether there is existence of multi-collinearity, it was found that correlations among independent variables are moderate since they do not exceed the general rule of thumb. Moreover tolerances for the variables are moderately high which also are beyond the specified minimum of 0.10 and VIF do not exceed the specified rule of thumb of 10. This indicates absence of multi-collinearity within the independent variables.

#### **4.5 Interpretation of the Findings**

The findings of the study show that profitability of nonfinancial companies is positively correlated with company profitability. This may be taken to mean that as company increases its liquidity level; its profitability would also increase. Therefore managers can increase value for share holders by maintaining an optimal liquidity level that will ensure that the firm is in a position to meet the short term obligations as they fall due. This will ensure that the company does not incur unnecessary costs associated with stock outs and bankruptcy costs and the opportunity costs associated with excess liquidity. Liquidity level should not fall below minimum requirement as it will lead to the inability of the organization to meet short term obligation that are due. One of the major reasons that may cause liquidation is illiquidity and inability to make adequate profit. These are some of the basic ingredient of measuring the “going concern” of an establishment. For these reasons companies are expected to develop various strategies to improve their liquidity position.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the study in section 5.2, conclusion in 5.3, limitations of the study in 5.4, recommendations in 5.5, and suggestions for further research in 5.6. The different analyses have identified critical liquidity policies and practices of the listed nonfinancial firms at the NSE and are expected to assist managers in identifying areas requiring improved financial performance of their operations.

#### **5.2 Summary**

This study intended to determine the relationship between liquidity as measured by current ratio, quick ratio and cash ratio and profitability of listed nonfinancial companies quoted at the Nairobi Securities Exchange. In order to do this, the research was designed as a correlation study where relationships were tested. The population comprised of 39 listed nonfinancial companies in Kenya as at December 2014 and all of them formed the sample size. Secondary data from the financial statements was used in conducting the study. The study discovered that the management of nonfinancial companies in Kenya can create value for their shareholders by maintaining an optimum liquidity level. The management can create value for their shareholders by increasing their current assets to a reasonable level. In so doing, the profitability of firms is expected to increase. From the correlation analysis, it was noted that there exists a positive relationship between the liquidity and financial performance at 1% level of significance. Therefore, efficient

management of current assets reduces the cost of possible interruptions in the production process and the loss of business due to scarcity of products and stock outs. Most studies have not found the expected negative relationship between WCM and financial performance to be significant.

### **5.3 Conclusion**

The study concludes that there exists a weak positive relationship between working capital and financial performance though the results were significant at 1% level. Nonfinancial companies in Kenya to improve financial performance should put more emphasis in the area of efficient working capital management. It is with no doubt that the efficiency in working capital management practices as measured by efficiency in cash management, efficiency in receivables management and efficiency in inventory management has an influence on the growth rate of businesses' sales, market share, profits and total assets and consequently plays a role in the financial performance of a company. The study therefore recommends that nonfinancial companies ensure current assets are sufficient to meet short term obligations as they fall due at all times while at the same time avoiding holding unnecessary current assets that may increase opportunity costs of holding idle assets. The nonfinancial companies should employ working capital management models to ensure that they maintain their working capital at optimal levels.

## **5.4 Recommendations for Policy**

The study therefore recommends that nonfinancial companies should ensure that they maintain sufficient current assets to meet their short term financial obligations when they fall due while at the same time avoid holding excessive current assets which result to excess liquidity which only yields minimum return for the shareholders. The nonfinancial companies should seek to use of cash management models that will minimize the opportunity costs of excess liquidity. The study recommends the following for policy and investment decisions: The trading companies should maintain optimal liquidity level so as to maximize company's profitability and shareholders' wealth. Trading companies should pursue profit maximization since so doing simultaneously enhances liquidity. Investors should be guided by the true liquidity and profitability positions of a company in making their investment decisions.

## **5.5 Limitations of the Study**

The study focuses on nonfinancial companies listed in NSE in Kenya. As the study is purely based on listed nonfinancial companies, so the results of the study are only indicative and not conclusive. The results are therefore applicable only to nonfinancial companies in Kenya and any attempt to generalize findings to other firms outside this scope should be approached with care or may lead to misleading results. The analysis only covered nonfinancial companies listed in the NSE and this may limit the reasonable findings that could have been if the non listed firms were included. The sample size was only 39 nonfinancial companies listed on NSE and this may also have affected the results of the study and thus the findings should not be universally applied. Furthermore, data

representing the period of 5 years were used for the study, data for more than five years may yield a more conclusive results. There might be some data that is not publicly available, that could affect the analysis in a significant manner. The study considered only secondary data that is historical in nature; this may not necessarily reflect the future of the companies. There are other factors that affect profitability of companies therefore liquidity should not be used in isolation of those other factors. Further studies inclusive of other factors affecting financial performance together with liquidity would be more objective and useful to the management of nonfinancial companies in Kenya.

### **5.6 Suggestions for Further Research**

This study can be replicated in the financial companies to establish mechanisms in which liquidity can be optimized in a bid to increasing the company's financial performance. Further studies can also be carried out to establish other determinants of profitability that require to be managed and how that will impact in the overall goals of businesses in Kenya. Other studies that could be carried out in future include; the relationship between the liquidity of a company and financial performance of both the listed and non listed nonfinancial companies in Kenya which would ensure a more irrefutable conclusion.

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## APPENDICES

### APPENDIX I: LISTED NONFINANCIAL COMPANIES AS AT 31<sup>ST</sup>

#### DECEMBER 2013

- 1) Eaagads Ltd
- 2) Kakuzi Ltd
- 3) Kapchorua Tea Co. Ltd
- 4) The Limuru Tea Co. Ltd
- 5) Rea Vipingo Plantations Ltd
- 6) Sasini Ltd
- 7) Williamson Tea Kenya Ltd
- 8) Car & General (K) Ltd
- 9) CMC Holdings Ltd
- 10) Marshalls (E.A.) Ltd
- 11) Sameer Africa Ltd
- 12) Express Kenya Ltd
- 13) Hutchings Biemer Ltd
- 14) Kenya Airways Ltd
- 15) Longhorn Kenya Ltd
- 16) Nation Media Group Ltd
- 17) Scangroup Ltd
- 18) Standard Group Ltd
- 19) TPS Eastern Africa Ltd
- 20) Uchumi Supermarket Ltd
- 21) ARM Cement Ltd
- 22) Bamburi Cement Ltd
- 23) Crown Paints Kenya Ltd
- 24) E.A.Cables Ltd
- 25) E.A.Portland Cement Co. Ltd
- 26) KenGen Co. Ltd

- 27) KenolKobil Ltd
- 28) Kenya Power & Lighting Co Ltd
- 29) Total Kenya Ltd
- 30) Umeme Ltd
- 31) Centum Investment Co Ltd
- 32) Olympia Capital Holdings Ltd
- 33) Trans-Century Ltd
- 34) A.Baumann & Co Ltd
- 35) B.O.C Kenya Ltd
- 36) British American Tobacco Kenya Ltd
- 37) Carbacid Investments Ltd
- 38) East African Breweries Ltd
- 39) Eveready East Africa Ltd
- 40) Kenya Orchards Ltd
- 41) Mumias Sugar Co. Ltd
- 42) Unga Group Ltd
- 43) Safaricom Ltd
- 44) Home Afrika Ltd

**Source: NSE hand book (2009-2013), retrieved from <http://www.nse.co.ke>**

## APPENDIX II: FINANCIAL DATA OF THE NONFINANCIAL COMPANIES LISTED IN THE NSE

| Year                           | Cash &<br>cash<br>equivalents | Inventory  | Current<br>Assets | Current<br>Liabilities | Total<br>Liabilities | Total<br>Assets | PBIT       | Sales      |
|--------------------------------|-------------------------------|------------|-------------------|------------------------|----------------------|-----------------|------------|------------|
|                                | Ksh. '000'                    | Ksh. '000' | Ksh. '000'        | Ksh. '000'             | Ksh. '000'           | Ksh. '000'      | Ksh. '000' | Ksh. '000' |
| 1) Eaagads Ltd                 |                               |            |                   |                        |                      |                 |            |            |
| 2008                           |                               |            |                   |                        |                      |                 |            | 132987     |
| 2009                           | 368                           | 31000      | 41887             | 6250                   | 65600                | 260061          | 85432      | 120298     |
| 2010                           | 370                           | 6622       | 78928             | 66380                  | 92823                | 293447          | 97561      | 146452     |
| 2011                           | 605                           | 5589       | 86803             | 14604                  | 88677                | 354922          | 101480     | 184597     |
| 2012                           | 524                           | 6877       | 84987             | 4530                   | 91907                | 573356          | 36178      | 157075     |
| 2013                           | 512                           | 8759       | 47242             | 35475                  | 97425                | 499561          | -83223     | 68025      |
| 2) Kakuzi Ltd                  |                               |            |                   |                        |                      |                 |            |            |
| 2008                           |                               |            |                   |                        |                      |                 |            | 1620319    |
| 2009                           | 342231                        | 148091     | 618438            | 413155                 | 984961               | 2873255         | 578363     | 2008157    |
| 2010                           | 529621                        | 140355     | 795570            | 383679                 | 1008087              | 3218591         | 554348     | 2113774    |
| 2011                           | 897332                        | 179830     | 1174645           | 351157                 | 1060555              | 3817320         | 920093     | 2582262    |
| 2012                           | 897540                        | 65428      | 1237473           | 146023                 | 770475               | 3571700         | 567806     | 2055168    |
| 2013                           | 920143                        | 77365      | 1170655           | 147181                 | 813515               | 3717543         | 239306     | 1384375    |
| 3) Kapchorua Tea Co. Ltd       |                               |            |                   |                        |                      |                 |            |            |
| 2008                           |                               |            |                   |                        |                      |                 |            | 574997     |
| 2009                           | 85624                         | 117774     | 347641            | 206617                 | 478537               | 1167797         | 104992     | 743079     |
| 2010                           | 94556                         | 192842     | 678761            | 413617                 | 680199               | 1498931         | 201431     | 1130108    |
| 2011                           | 154047                        | 113196     | 575942            | 274093                 | 593806               | 1570203         | 269384     | 1246636    |
| 2012                           | 190721                        | 127374     | 752190            | 456895                 | 829262               | 1962897         | 112576     | 1406794    |
| 2013                           | 310772                        | 193376     | 823337            | 388985                 | 794462               | 2078475         | 255753     | 1353206    |
| 4) The Limuru Tea Co. Ltd      |                               |            |                   |                        |                      |                 |            |            |
| 2008                           |                               |            |                   |                        |                      |                 |            | 69528      |
| 2009                           | 9525                          | 0          | 65751             | 17138                  | 28831                | 84794           | 38731      | 91130      |
| 2010                           | 6234                          | 0          | 89227             | 11196                  | 38978                | 158305          | 104328     | 123859     |
| 2011                           | 6048                          | 0          | 100341            | 5487                   | 41532                | 191242          | 59849      | 102504     |
| 2012                           | 6923                          | 36         | 130762            | 10537                  | 77790                | 320023          | 146621     | 116012     |
| 2013                           | 7767                          | 59         | 135391            | 6031                   | 79503                | 339715          | 41556      | 104000     |
| 5) Rea Vipingo Plantations Ltd |                               |            |                   |                        |                      |                 |            |            |
| 2008                           |                               |            |                   |                        |                      |                 |            | 1356427    |
| 2009                           | 31068                         | 280448     | 502524            | 224412                 | 438634               | 1414084         | 231316     | 1371090    |
| 2010                           | 16100                         | 322998     | 586491            | 436849                 | 717917               | 1707016         | 123541     | 1441668    |
| 2011                           | 32701                         | 531612     | 894146            | 425236                 | 819880               | 2288740         | 703585     | 2115616    |
| 2012                           | 28301                         | 461210     | 879556            | 257984                 | 654473               | 2376618         | 582510     | 2571725    |

|                             |         |         |          |         |         |          |         |          |
|-----------------------------|---------|---------|----------|---------|---------|----------|---------|----------|
| 2013                        | 233723  | 443017  | 1040887  | 220663  | 701560  | 2797430  | 655678  | 2570103  |
| 6) Sasini Ltd               |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 1442072  |
| 2009                        | 548646  | 219259  | 1041011  | 407361  | 2336411 | 7998233  | 831371  | 2182090  |
| 2010                        | 626408  | 278757  | 1227656  | 519045  | 2570082 | 9060061  | 1454298 | 2297927  |
| 2011                        | 489103  | 385614  | 1243233  | 583435  | 2699855 | 9462027  | 1038221 | 2665877  |
| 2012                        | 268481  | 430589  | 1109871  | 585628  | 2496178 | 8922980  | -58045  | 2820737  |
| 2013                        | 275364  | 370264  | 1295043  | 731249  | 2671455 | 9054366  | 165038  | 2816834  |
| 7) Williamson Tea Kenya Ltd |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 1185755  |
| 2009                        | 106509  | 270808  | 915042   | 490105  | 1291714 | 3921165  | 163576  | 1489982  |
| 2010                        | 462086  | 444794  | 1929587  | 948494  | 1858225 | 5328706  | 1234424 | 2723187  |
| 2011                        | 840296  | 318958  | 2326779  | 687396  | 1761515 | 6032743  | 1302855 | 3284909  |
| 2012                        | 754517  | 357901  | 2447223  | 1017203 | 2298171 | 7243227  | 1214979 | 3607409  |
| 2013                        | 1098343 | 615738  | 2684364  | 738619  | 2165577 | 8023834  | 1167025 | 3490681  |
| 8) Car & General (K) Ltd    |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 2997342  |
| 2009                        | 79480   | 1409482 | 2191107  | 1681144 | 1902696 | 3210498  | 429720  | 4349489  |
| 2010                        | 121058  | 1694544 | 2686734  | 2048108 | 2324149 | 3880055  | 457521  | 4779318  |
| 2011                        | 197489  | 2290769 | 3487990  | 3105247 | 3641917 | 5562239  | 614578  | 6086106  |
| 2012                        | 171892  | 2200610 | 3397179  | 2928463 | 3562246 | 5705400  | 616234  | 5711529  |
| 2013                        | 170488  | 2557040 | 4188592  | 3766604 | 4397252 | 6901430  | 672256  | 7056021  |
| 9) CMC Holdings Ltd         |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 11481773 |
| 2009                        | 120334  | 6285374 | 10887567 | 7560184 | 8020021 | 13293168 | 1183974 | 11728127 |
| 2010                        | 144764  | 7134919 | 12224987 | 8788430 | 9212728 | 14667707 | 1057006 | 12726920 |
| 2011                        | 172773  | 8531892 | 12308768 | 9002281 | 9433683 | 14579112 | -231087 | 11805399 |
| 2012                        | 132264  | 6908574 | 10057428 | 6541365 | 7220955 | 12957113 | 1140470 | 11738774 |
| 2013                        | 100940  | 6352302 | 9389483  | 5811490 | 6460837 | 12298273 | 802959  | 12227882 |
| 10) Marshalls (E.A.) Ltd    |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 894585   |
| 2009                        | 2036    | 289451  | 555572   | 626752  | 956736  | 1433970  | -22273  | 592843   |
| 2010                        | 9892    | 162739  | 284076   | 570532  | 993695  | 1126208  | -251296 | 604815   |
| 2011                        | 5033    | 115693  | 182914   | 673297  | 673797  | 1076865  | 258865  | 263078   |
| 2012                        | 11291   | 79512   | 197102   | 174466  | 174966  | 567095   | -125749 | 234306   |
| 2013                        | 10127   | 103852  | 147219   | 220552  | 233016  | 515116   | -106629 | 230463   |
| 11) Sameer Africa Ltd       |         |         |          |         |         |          |         |          |
| 2008                        |         |         |          |         |         |          |         | 3026747  |
| 2009                        | 213141  | 1134061 | 2075045  | 605763  | 722807  | 3005374  | 267372  | 3278118  |
| 2010                        | 158284  | 871990  | 2160005  | 796233  | 677165  | 2845307  | 116695  | 3675226  |
| 2011                        | 147558  | 1091500 | 2277373  | 754107  | 875252  | 3125040  | 260548  | 3344895  |
| 2012                        | 300619  | 1086087 | 2665330  | 940764  | 1072928 | 3399651  | 359021  | 4083631  |

|                            |          |         |          |          |          |           |          |           |
|----------------------------|----------|---------|----------|----------|----------|-----------|----------|-----------|
| 2013                       | 482833   | 1268150 | 2822531  | 836561   | 988874   | 3668487   | 498947   | 4029841   |
| 12) Express Kenya Ltd      |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 802973    |
| 2009                       | 2254     | 8872    | 153785   | 501750   | 891663   | 1304116   | 104214   | 892928    |
| 2010                       | 7448     | 2418    | 180583   | 557185   | 958836   | 1343199   | 85180    | 856512    |
| 2011                       | 14362    | 0       | 137662   | 409479   | 611522   | 766797    | -123329  | 450324    |
| 2012                       | 19379    | 0       | 63986    | 161491   | 297322   | 495609    | 16518    | 229908    |
| 2013                       | 18291    | 0       | 103198   | 161186   | 282009   | 480525    | 6318     | 387494    |
| 13) Kenya Airways Ltd      |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 60471000  |
| 2009                       | 7450000  | 1474000 | 18661000 | 20674000 | 57755000 | 74931000  | -4070000 | 71829000  |
| 2010                       | 6123000  | 1543000 | 17860000 | 20580000 | 53290000 | 73263000  | 4156000  | 70743000  |
| 2011                       | 7254000  | 1907000 | 23622000 | 22214000 | 55600000 | 78743000  | 6381000  | 85836000  |
| 2012                       | 6840000  | 2683000 | 21833000 | 23756000 | 54409000 | 77432000  | 3487000  | 107897000 |
| 2013                       | 14393000 | 2532000 | 28608000 | 50841000 | 91461000 | 122670000 | -8919000 | 98860000  |
| 14) Nation Media Group Ltd |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 8251500   |
| 2009                       | 1473500  | 611300  | 3765600  | 1769400  | 6572400  | 6572400   | 1667800  | 8189800   |
| 2010                       | 2603200  | 676300  | 5076800  | 2553100  | 2597600  | 7975200   | 2148300  | 9602500   |
| 2011                       | 2744700  | 1034300 | 5855100  | 2530900  | 2693900  | 8816300   | 2823000  | 11245800  |
| 2012                       | 3960300  | 1015200 | 7248200  | 3216700  | 3353900  | 10677400  | 3534600  | 12346800  |
| 2013                       | 4093700  | 1094800 | 7854300  | 3116400  | 3200800  | 11444200  | 3602400  | 13373700  |
| 15) Scangroup Ltd          |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 5789716   |
| 2009                       | 676768   | 31926   | 313445   | 1555306  | 1566926  | 3933148   | 545014   | 5920012   |
| 2010                       | 2199804  | 61672   | 7117892  | 4240483  | 4431626  | 8009431   | 838396   | 11363839  |
| 2011                       | 2648740  | 32072   | 7778587  | 3797599  | 4135029  | 8489938   | 1280100  | 11763664  |
| 2012                       | 1954878  | 8276    | 7735575  | 3389273  | 3747331  | 8646961   | 1095061  | 13056890  |
| 2013                       | 2795611  | 15931   | 10720755 | 4351702  | 4697880  | 12949665  | 1038416  | 14168001  |
| 16) Standard Group Ltd     |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 2818860   |
| 2009                       | 6033     | 163783  | 1081798  | 850966   | 1742538  | 3003966   | 477954   | 2767835   |
| 2010                       | 24598    | 347197  | 1369287  | 1035672  | 1770222  | 3306000   | 558540   | 3105436   |
| 2011                       | 21489    | 310190  | 1287683  | 1194519  | 1858191  | 3512257   | 349551   | 3174907   |
| 2012                       | 39636    | 278478  | 1248272  | 1118703  | 1662646  | 3501548   | 423290   | 3617816   |
| 2013                       | 19514    | 303035  | 1643577  | 1421651  | 2108367  | 4136762   | 419808   | 4818808   |
| 17) TPS Eastern Africa Ltd |          |         |          |          |          |           |          |           |
| 2008                       |          |         |          |          |          |           |          | 3243203   |
| 2009                       | 352384   | 266901  | 1522281  | 988035   | 2931806  | 6996196   | 644294   | 4077657   |
| 2010                       | 1049247  | 299776  | 2335982  | 1657965  | 4426752  | 11923137  | 903716   | 4480128   |
| 2011                       | 403114   | 375588  | 2414929  | 1615296  | 5085016  | 13131840  | 1016980  | 5465975   |
| 2012                       | 257205   | 369306  | 2070277  | 2045961  | 5302666  | 13484076  | 921450   | 5343960   |

|                                 |         |         |          |         |          |          |         |          |
|---------------------------------|---------|---------|----------|---------|----------|----------|---------|----------|
| 2013                            | 275259  | 506857  | 2374820  | 2245691 | 5207601  | 16239878 | 1150682 | 6841420  |
| 18) Uchumi Supermarket Ltd      |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 6972354  |
| 2009                            | 213438  | 607949  | 1089612  | 1849054 | 2669143  | 2448648  | 330406  | 8202221  |
| 2010                            | 220968  | 709390  | 1193567  | 1294438 | 1614578  | 3153511  | 536750  | 9559682  |
| 2011                            | 227308  | 838891  | 1397650  | 1542187 | 1725555  | 4004720  | 518463  | 10770961 |
| 2012                            | 132463  | 1067959 | 1594146  | 2203769 | 2284078  | 4941888  | 428425  | 13802191 |
| 2013                            | 104459  | 1185065 | 1725315  | 2448121 | 2648121  | 5573533  | 501964  | 14270598 |
| 19) ARM Cement Ltd              |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 4619473  |
| 2009                            | 812527  | 1084286 | 3362746  | 3353762 | 8012161  | 12141091 | 1025208 | 5144822  |
| 2010                            | 1198925 | 1129885 | 4240062  | 3206460 | 11638041 | 16564900 | 1339278 | 5964670  |
| 2011                            | 337133  | 1420153 | 3723221  | 4420053 | 14413414 | 20515940 | 1669139 | 8180992  |
| 2012                            | 333741  | 3315623 | 7936410  | 6502840 | 19832580 | 26953100 | 2267244 | 11400569 |
| 2013                            | 161800  | 2529995 | 6848562  | 7246584 | 21481522 | 29705254 | 2439993 | 14179208 |
| 20) Bamburi Cement Ltd          |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 27467000 |
| 2009                            | 6427000 | 4338000 | 12773000 | 4944000 | 11171000 | 32122000 | 9610000 | 29994000 |
| 2010                            | 7616000 | 3523000 | 12863000 | 7464000 | 11680000 | 33306000 | 7655000 | 28075000 |
| 2011                            | 7136000 | 4305000 | 13356000 | 5097000 | 9328000  | 33502000 | 8840000 | 35884000 |
| 2012                            | 8769000 | 5606000 | 16462000 | 7011000 | 12177000 | 43038000 | 7427000 | 37491000 |
| 2013                            | 8876000 | 5357000 | 16037000 | 5981000 | 11506000 | 43016000 | 5637000 | 33928000 |
| 21) Crown Paints Kenya Ltd      |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 2389520  |
| 2009                            | 65189   | 519322  | 1326166  | 923649  | 1021509  | 1858452  | 188022  | 2543657  |
| 2010                            | 112136  | 445785  | 1480069  | 991781  | 1069992  | 1972337  | 197218  | 3068468  |
| 2011                            | 160919  | 694858  | 1569315  | 1071998 | 1162932  | 2215352  | 238449  | 3853569  |
| 2012                            | 176485  | 690713  | 1589244  | 1034709 | 1082061  | 2258263  | 281318  | 4432877  |
| 2013                            | 148696  | 898871  | 2167353  | 1568798 | 1583720  | 2945434  | 363544  | 5158992  |
| 22) E.A.Cables Ltd              |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 3929312  |
| 2009                            | 11132   | 711064  | 1699156  | 1247084 | 1882603  | 3543383  | 603969  | 2811861  |
| 2010                            | 44634   | 662452  | 1795686  | 1399362 | 2272136  | 4518445  | 324864  | 3604366  |
| 2011                            | 31161   | 727918  | 2407504  | 2074312 | 2719200  | 4993032  | 576901  | 4971665  |
| 2012                            | 64738   | 911951  | 3031439  | 2532226 | 3323613  | 6248642  | 809323  | 4300608  |
| 2013                            | 29927   | 804627  | 3583184  | 2746108 | 3742727  | 6809265  | 636664  | 4502964  |
| 23) E.A.Portland Cement Co. Ltd |         |         |          |         |          |          |         |          |
| 2008                            |         |         |          |         |          |          |         | 7204479  |
| 2009                            | 1511962 | 792606  | 3131045  | 1512392 | 5939115  | 12035963 | 2802863 | 8101377  |
| 2010                            | 951779  | 1189533 | 2911680  | 1836650 | 6336364  | 12037565 | -256048 | 9408711  |
| 2011                            | 564374  | 1551254 | 3172070  | 2100179 | 7268415  | 13530871 | 7706    | 10172140 |
| 2012                            | 79121   | 1724887 | 2570423  | 2275422 | 9251616  | 14091006 | -563689 | 8614806  |



|                                   |          |          |          |          |           |           |          |           |
|-----------------------------------|----------|----------|----------|----------|-----------|-----------|----------|-----------|
| 2013                              | 402620   | 2191123  | 3602063  | 3319478  | 9053446   | 16133703  | 1731090  | 9211462   |
| 24) KenGen Co. Ltd                |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 11548176  |
| 2009                              | 5853475  | 752767   | 12748759 | 5867743  | 45290651  | 108603879 | 5312600  | 12652388  |
| 2010                              | 21850647 | 1443374  | 32599036 | 6969815  | 80296903  | 143611431 | 3155244  | 11142729  |
| 2011                              | 3506725  | 1168240  | 19539034 | 11256593 | 91574703  | 160993290 | 5648258  | 14389027  |
| 2012                              | 1078922  | 1955564  | 22288066 | 15000957 | 92965319  | 163144873 | 7017498  | 15999078  |
| 2013                              | 6546772  | 836259   | 25127810 | 17672629 | 114544543 | 188673282 | 7093876  | 16451195  |
| 25) KenolKobil Ltd                |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 134518341 |
| 2009                              | 3806455  | 13172275 | 25170657 | 19293187 | 19834229  | 31288857  | 2519547  | 96692834  |
| 2010                              | 2133091  | 12750781 | 26062068 | 18879407 | 19511118  | 32216630  | 3815077  | 101760803 |
| 2011                              | 3271736  | 24007999 | 40145862 | 32794177 | 34323843  | 45974304  | 6346346  | 222440715 |
| 2012                              | 2191005  | 8884066  | 24540381 | 25340816 | 26238441  | 32684166  | -6613479 | 192527486 |
| 2013                              | 1775058  | 6528533  | 19381669 | 20738754 | 21455379  | 28121673  | 2235677  | 109687453 |
| 26) Kenya Power & Lighting Co Ltd |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 23917599  |
| 2009                              | 4798881  | 7570854  | 21257075 | 18555066 | 44715745  | 71563808  | 5827955  | 36458817  |
| 2010                              | 2609191  | 8387030  | 19610149 | 18715246 | 51472593  | 80213470  | 6126842  | 39107277  |
| 2011                              | 11569212 | 8960830  | 35150676 | 30370607 | 80135930  | 119878993 | 7253924  | 42485593  |
| 2012                              | 3661208  | 10286376 | 28159384 | 31383138 | 78258103  | 134131983 | 9722965  | 45007884  |
| 2013                              | 4660420  | 14915622 | 36577986 | 39646409 | 113664333 | 177157755 | 8919702  | 47916237  |
| 27) Total Kenya Ltd               |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 54807521  |
| 2009                              | 509654   | 7876468  | 20745441 | 18588005 | 22566005  | 31528196  | 1260087  | 41311598  |
| 2010                              | 874673   | 9516941  | 20114577 | 17090899 | 20795824  | 30375677  | 2365338  | 79206640  |
| 2011                              | 1670112  | 12039014 | 25338951 | 22982764 | 26003348  | 35198166  | 1650170  | 105590360 |
| 2012                              | 499174   | 13794942 | 23348459 | 17933163 | 18787928  | 32980604  | 1490414  | 119788989 |
| 2013                              | 4979505  | 14953214 | 30037264 | 23488077 | 24605105  | 39984165  | 2363212  | 154626092 |
| 28) Centum Investment Co Ltd      |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 581514    |
| 2009                              | 10131    | 0        | 109512   | 253906   | 253906    | 6569939   | 488636   | 391586    |
| 2010                              | 393641   | 0        | 505565   | 399804   | 399804    | 8255971   | 1230825  | 1038257   |
| 2011                              | 6776     | 0        | 246916   | 754219   | 2742199   | 12301576  | 2449126  | 2261431   |
| 2012                              | 322410   | 0        | 358489   | 395507   | 1526459   | 11567701  | 1596547  | 1272313   |
| 2013                              | 2497082  | 0        | 2757907  | 339616   | 5318811   | 18961552  | 3648736  | 3905657   |
| 29) Olympia Capital Holdings Ltd  |          |          |          |          |           |           |          |           |
| 2008                              |          |          |          |          |           |           |          | 1366927   |
| 2009                              | 54983    | 59803    | 275810   | 193997   | 230167    | 787577    | 62734    | 501868    |
| 2010                              | 86770    | 100694   | 391643   | 264127   | 376275    | 974479    | 29776    | 618124    |
| 2011                              | 64632    | 111027   | 378674   | 325788   | 426977    | 1074236   | 54240    | 666629    |
| 2012                              | 72352    | 129501   | 692789   | 305346   | 800392    | 1867621   | 53806    | 774286    |

|  |         |         |          |          |          |          |          |          |
|--|---------|---------|----------|----------|----------|----------|----------|----------|
| 2013                                   | 84944   | 141281  | 730355   | 260928   | 823045   | 1897407  | 26836    | 824934   |
| 30) Trans-Century Ltd                  |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 6442438  |
| 2009                                   | 482451  | 1472136 | 3693959  | 2046941  | 5215486  | 8733331  | 926665   | 5414887  |
| 2010                                   | 207084  | 1944264 | 4094701  | 2571506  | 5943024  | 11236478 | 1064295  | 6794650  |
| 2011                                   | 2759356 | 1709228 | 9385598  | 6656797  | 10269791 | 21742258 | 1677938  | 10701621 |
| 2012                                   | 274416  | 1593541 | 7509767  | 5846150  | 9777159  | 21845754 | 2128599  | 3673193  |
| 2013                                   | 361195  | 1540428 | 8784234  | 5907129  | 10621885 | 23840273 | 1594215  | 11807576 |
| 31) B.O.C Kenya Ltd                    |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 1283832  |
| 2009                                   | 327760  | 223635  | 970458   | 367524   | 454607   | 1988401  | 231682   | 1285373  |
| 2010                                   | 304605  | 232549  | 864695   | 402014   | 498425   | 1904995  | 114685   | 1155379  |
| 2011                                   | 348157  | 191511  | 890082   | 458790   | 488252   | 1816803  | 219218   | 1205372  |
| 2012                                   | 629137  | 204267  | 1087971  | 523229   | 540054   | 1994865  | 356579   | 1294550  |
| 2013                                   | 676166  | 182813  | 1211504  | 544011   | 557033   | 2633093  | 417345   | 1242602  |
| 32) British American Tobacco Kenya Ltd |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 10283369 |
| 2009                                   | 251575  | 2299571 | 4244326  | 4633075  | 5871922  | 10543998 | 2221219  | 11094396 |
| 2010                                   | 120865  | 2972758 | 4804289  | 4106653  | 6007249  | 11121561 | 2939519  | 13539233 |
| 2011                                   | 720680  | 4374777 | 6979714  | 5340629  | 7338478  | 13750545 | 4662416  | 20138122 |
| 2012                                   | 194314  | 4393589 | 7129828  | 6052680  | 8078578  | 15176495 | 5104229  | 19409000 |
| 2013                                   | 207341  | 3510174 | 8518000  | 6781000  | 9414000  | 10205000 | 5771000  | 19619000 |
| 33) Carbacid Investments Ltd           |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 387115   |
| 2009                                   | 422616  | 34833   | 707107   | 66549    | 208786   | 1376380  | 367027   | 552853   |
| 2010                                   | 119292  | 58316   | 385105   | 66558    | 66549    | 1512166  | 438041   | 620083   |
| 2011                                   | 152397  | 31798   | 404113   | 45698    | 272620   | 1739985  | 374210   | 576092   |
| 2012                                   | 424470  | 27203   | 639388   | 150166   | 360046   | 2012816  | 535444   | 921753   |
| 2013                                   | 696934  | 36883   | 892067   | 88417    | 279970   | 2204399  | 634686   | 952836   |
| 34) East African Breweries Ltd         |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 32488112 |
| 2009                                   | 6585870 | 3953930 | 15958710 | 9432296  | 12098470 | 34546993 | 11568909 | 34407715 |
| 2010                                   | 7895115 | 3465054 | 17358873 | 11684390 | 14468065 | 38420691 | 11614454 | 38679196 |
| 2011                                   | 1649453 | 4399365 | 16320457 | 15509186 | 22824003 | 49712130 | 12521660 | 44895037 |
| 2012                                   | 997973  | 7957272 | 18057773 | 22483782 | 45868436 | 54584316 | 19815586 | 55522166 |
| 2013                                   | 1406091 | 7470607 | 18593102 | 26606846 | 50121863 | 58556053 | 15173577 | 59061875 |
| 35) Eveready East Africa Ltd           |         |         |          |          |          |          |          |          |
| 2008                                   |         |         |          |          |          |          |          | 1774675  |
| 2009                                   | 62214   | 497211  | 795254   | 528176   | 602976   | 997672   | 68232    | 1645193  |
| 2010                                   | 6718    | 685669  | 943397   | 668833   | 792425   | 1195824  | 72633    | 1635106  |
| 2011                                   | 23250   | 509131  | 727664   | 652383   | 731459   | 1010864  | -43707   | 1374847  |
| 2012                                   | 93437   | 592597  | 869688   | 689409   | 794885   | 1144374  | 68097    | 1374789  |

|                          |          |         |          |          |          |           |          |           |
|--------------------------|----------|---------|----------|----------|----------|-----------|----------|-----------|
| 2013                     | 14789    | 446584  | 683971   | 444019   | 545882   | 940652    | 102393   | 1428278   |
| 36) Kenya Orchards Ltd   |          |         |          |          |          |           |          |           |
| 2008                     |          |         |          |          |          |           |          | 23958     |
| 2009                     | 125      | 14107   | 27168    | 23665    | 79937    | 78704     | 251      | 22412     |
| 2010                     | 485      | 13317   | 24466    | 18945    | 75217    | 74491     | 647      | 23194     |
| 2011                     | 402      | 11875   | 21867    | 14169    | 70441    | 70372     | 1311     | 26894     |
| 2012                     | 738      | 9196    | 21682    | 12543    | 68815    | 68936     | 780      | 29684     |
| 2013                     | 366      | 6923    | 22812    | 11844    | 68116    | 70597     | 998      | 47091     |
| 37) Mumias Sugar Co. Ltd |          |         |          |          |          |           |          |           |
| 2008                     |          |         |          |          |          |           |          | 11970101  |
| 2009                     | 182381   | 796096  | 5111932  | 3760339  | 7436246  | 17475715  | 1384318  | 11791708  |
| 2010                     | 1346127  | 955078  | 6506885  | 3250021  | 7334258  | 18334110  | 2548765  | 15617738  |
| 2011                     | 681702   | 1191114 | 6511659  | 2961691  | 8700509  | 23176516  | 2942110  | 15795300  |
| 2012                     | 225100   | 1676088 | 7232860  | 5720655  | 11676427 | 27400113  | 1905667  | 15542686  |
| 2013                     | 70923    | 2463064 | 7059940  | 8408773  | 13859423 | 27148393  | -1511011 | 11957823  |
| 38) Unga Group Ltd       |          |         |          |          |          |           |          |           |
| 2008                     |          |         |          |          |          |           |          | 9450824   |
| 2009                     | 524200   | 2270794 | 3832857  | 2085012  | 2419154  | 5565541   | 300334   | 11643639  |
| 2010                     | 629041   | 1958201 | 3419837  | 1344363  | 1699717  | 5064420   | 351614   | 11524454  |
| 2011                     | 1060135  | 1926221 | 4086617  | 1618796  | 1963946  | 5708897   | 643342   | 13214442  |
| 2012                     | 644591   | 2115489 | 4644891  | 1967953  | 2421041  | 6410259   | 523160   | 15976763  |
| 2013                     | 619076   | 3172479 | 5835732  | 3166864  | 3813012  | 8316927   | 680848   | 15759078  |
| 39) Safaricom Ltd        |          |         |          |          |          |           |          |           |
| 2008                     |          |         |          |          |          |           |          | 61369408  |
| 2009                     | 4361629  | 2929683 | 17502526 | 35760664 | 40535244 | 91682324  | 16318192 | 70479587  |
| 2010                     | 10723415 | 2887029 | 22570645 | 33819970 | 41825732 | 104120850 | 23407924 | 83960677  |
| 2011                     | 5259035  | 5880837 | 21701296 | 34117726 | 46400671 | 113854762 | 20269146 | 94832227  |
| 2012                     | 8808058  | 2653125 | 21194195 | 37615900 | 49817979 | 121899677 | 21025680 | 106995529 |
| 2013                     | 14996922 | 2234294 | 25356024 | 36591029 | 48591029 | 128856157 | 28289814 | 124287856 |

**Source: Research Findings**

### APPENDIX III: COMPANIES EXCLUDED FROM THE STUDY

|    | Company              | Reason for exclusion   |
|----|----------------------|--|
| 1. | Longhorn Kenya Ltd   | This company was listed on 30 <sup>th</sup> May 2012 therefore data for years 2008, 2009, 2010 was not available.              |
| 2. | Umeme Ltd            | This company was listed in April 2013 in Uganda Securities exchange and as well cross listed in NSE, hence data not available. |
| 3. | Hutchings Biemer Ltd | The company was suspended from trading in the NSE.   |
| 4. | Home Afrika Ltd      | This company was listed on 15 <sup>th</sup> July 2013 hence data for year 2009, 2010, 2011, 2012 not available.                |
| 5. | A.Baumann & Co Ltd   | This company was suspended as at the time of the study.  |

**Source: Research Findings**