THE EFFECT OF LIQUIDITY ON THE FINANCIAL PERFORMANCE OF CONSTRUCTION AND ALLIED COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY:

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DECLARATION

This research proposal is my original work and it has not been presented for any academic award in any university or institution of higher learning.

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This research proposal has been presented for examination with my approval as the University Supervisor.

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DEDICATION

I would like to dedicate my research project to the Almighty God, for His wisdom and providence without which I would not have accomplished this much; and to my family and friends for their prayers and infinite support during this study.

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LIST OF ABBREVIATIONS

CCC	Cash Conversion Cycle
CMA	Capital Market Authority
EBIT	Earnings Before Interest and Tax
GDP	Gross Domestic Product
KNBS	Kenya National Bureau of Statistics
NSE	Nairobi Securities Exchange
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investments
USA	United States of America
WCM	Working Capital Management
UK	United Kingdom

ABSTRACT

The financial performance of any business can be assessed using the concept of liquidity. Liquidity and financial performance are very important issues in the growth and survival of business and the ability to handle the trade-off between the two a source of concern for financial managers. Hence, the main purpose of this study was to determine the effect of liquidity on financial performance of construction and allied companies listed at the Nairobi Securities Exchange (NSE). The objective of the study was to establish the effect of liquidity on the financial performance of construction and allied companies listed at the NSE. The study covered a period of past 10 years from 2005 to 2014. Secondary data was collected from NSE and multiple regression analysis used in the data analysis. The study revealed that liquidity positively affects the financial performance of construction and allied companies listed at the NSE. The study established that current ratio positively affects the financial performance of construction and allied companies listed at the NSE. The study also revealed that an increase in operating cash flow ratio positively affects the financial performance of construction and allied companies listed at the NSE. The study found that an increase in debt to equity negatively affects the financial performance of construction and allied companies listed at the NSE. The study found that an increase in total assets negatively affects the financial performance of construction and allied companies listed at the NSE. The study found that an increase in total sales positively affects the financial performance of construction and allied companies listed at the NSE. The study recommends that there is need for construction and allied companies listed at the NSE to increase their current assets so as to increase their liquidity as it was found that an increase in current ratio positively affects the financial performance. The study further recommends that there is need for construction and allied companies listed at the NSE to increase their operating cash flow, through reduction of their credit repayment period in order to positively influence their financial performance and reduce the underutilized assets and increase sales to positively influence their financial performance.

CHAPTER ONE: INRODUCTION

1.1 Background of the Study

Liquidity is a concept that has been a source of worry to the management of firms of the uncertainty of the future. The liquidity of an asset means how quickly it can be transformed into cash. When referring to company liquidity one usually means its ability to meet its current liabilities and is usually measured by different financial ratios (Priya, 2013). The objective of business owners and managers is to conceive a strategy of managing their day to day operations in order to meet their obligations as they fall due and increases profitability and shareholders value.

Liquidity management affects corporate performance. Liquidity management requires maintaining liquidity in day to day operations to ensure its smooth running and meet its obligations when they fall due (Eljelly, 2004). A company should ensure that it possess sufficient liquidity to meet its short-term obligations. The challenge in liquidity management is to achieve desired balance between profitability and liquidity (Nasr and Raheman, 2007). Poor management of liquidity in terms solvency, operating efficiency and profitability is imputable to inadequate financial performances (Bhunia, 2006). Management of liquidity is a very sensitive area in the field of managing finances.

The profitability of a company can be described as its ability to generate income which surpasses its expenses. Profitability is usually measured by different ratios such as ROA

and ROE. The management of liquidity determines to a large extent the quantity of profit that results as well as the wealth of stakeholders (Ben, 2008). A company in order to survive must remain liquid as failure to meet its compulsions in due time results in bad credit rating by the short term creditors, reduction in the value of reputation in the market and may ultimately lead to bankruptcy (Bhavet, 2011). Thus a good and firm financial management policy seeks to maintain adequate liquidity in order to meet its short-term maturing obligations without diminishing profitability. However the principal focus of most organizations is profitability maximization while the concern for efficient management of liquid assets is neglected. This perspective is justified by the belief that profitability and liquidity are conflicting objectives. Therefore a company can only pursue one at the expense of the other, in consonance with the tradeoff theory of liquidity and profitability.

According to Padachi (2006) a firm is required to maintain a balance between liquidity and profitability while conducting its daily activities. Profitability is directly affected by both inadequate and surplus liquidity (Ogundipe, Idowu & Ogundipe, 2012). For instance, when the "necessary" level of liquid assets is exceeded, their surpluses when the market risks remain stable become a source of ineffective utilization of resources which has an adverse effect on profitability.

Liquidity-profitability relationship is linked with the continuance of the appropriate intensity of working capital. Profitability has to do with making an adequate return on the capital and assets invested in the business. Liquidity is having an adequate cash flow that

allows the business to make necessary payments and ensure the continuity of operations. The liquidity is essential for company existence. The significance of liquidity to a company performance might lead to the conclusion that it determines the profitability level of a company (Eljelly, 2004).

The output of the Kenya construction industry rose 13.1% in 2014 compared to 5.8% in 2013 (KNBS, 2015). According to Economic Survey 2015 attributed the double-digit expansion to steady growth in property development and the ongoing infrastructure projects. The construction industry contributed 4.8% of Kenya's Gross Domestic Product (GDP), which rose to Sh.5.36 trillion from Sh.4.73 trillion in 2013, representing a nominal growth of 13.3%. The construction growth was also mirrored in cement consumption which registered a 21.8% to 5,197 thousand tonnes in 2014, buoyed by enhanced construction activities.

The construction and allied companies listed at the Nairobi Securities Exchange (NSE) are: Athi River Mining Limited, Bamburi Cement Limited, Crown Berger Limited, East Africa Cables Limited and East African Portland Cement Company Limited.

1.1.1 Liquidity

According to Reider and Heyler (2003), liquidity refers to having an adequate cash flow that allows the business to make necessary payments and ensure the continuity of operations. Liquidity relates to solvency of a firm's overall financial position. Cash is the

most liquid asset of all. In terms of accounting, liquidity can be defined as the ability to satisfy short-term obligation as they fall due. In terms of investment, it is the ability to quickly convert an investment portfolio to cash with little or no loss in value. A liquid company is one that stores enough liquid assets and cash together with the ability to raise funds quickly from other source to enable it meet its payment obligation and financial commitment in a timely manner. A liquid asset is one that trades in an active market and can be quickly converted into cash at the going market price (Mudida & Ngene, 2010).

There are various ratios used to measure liquidity. These include: the current ratio, which is the simplest measure and is calculated by dividing total current assets by total current liabilities; and the quick ratio, calculated by deducting inventories from current assets and then dividing the remainder by current liabilities (Mudida & Ngene, 2010). Even though the two ratios are similar, the quick ratio provides a more accurate assessment of a business's ability to pay its current liabilities. The quick ratio takes into account the most liquid of current assets. Inventory is the least liquid because it is not speedily convertible to cash. The quick ratio is a reasonable marker of a business's short term liquidity. The quick ratio gauges a company's ability to meet its short term obligations with its most liquid assets. The higher the quick ratio the better the position of the business.

1.1.2 Financial Performance

According to Investopedia (2015), financial performance is subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The

term is used as a general measure of a firm's overall financial health over a given period of time by ability to meet its financial and operational goals. The financial performance is often measured using traditional accounting Key Performance Indicators such as Return on Assets, Operating Profit margin, Earnings Before Interest and Tax, Economic Value Added or Sales growth (Ittner & Larcker, 1997; Fraquelli & Vannoni, 2000; Crabtree & DeBusk, 2008). The advantage of these measurements is their general availability, since every profit oriented organization produces these figures for the yearly financial reporting (Chenhall & Langfield-Smith, 2007).

However, measurement issues can arise when there is lack of uniformity in maintaining of the financial data. In this regard, balance sheet manipulations and choices of accounting methods may also lead to values that allow only limited comparability of the financial strength of companies.

Ratios are best used when compared or benchmarked against another reference, such as an industry standard (Mudida & Ngene, 2010). This type of comparison helps to establish financial goals and identify problem areas. Vertical and horizontal analysis can also be used for easy identification of changes within financial balances.

1.1.3 Liquidity and Financial Performance

Liquidity problems may affect financial performance of a company and in extreme circumstances may result in the collapse of an otherwise solvent company. According to

Chandra (2001), normally a high liquidity is considered to be a sign of financial strength, however according to some authors as Neto (2003), a high liquidity can be as undesirable as a low. This would be a consequence of the fact that current assets are usually the less profitable then the fixed assets in the sense that the money invested in current assets generates less returns then fixed assets representing thus an opportunity cost. Besides that, the amounts employed in current assets generate additional costs for maintenance, reducing thus the profitability of the company.

However, Arnold (2008) points that holding cash also provides some advantages, such as (1) provides the payment for daily expenses, such as salaries, materials and taxes. (2) Due to the fact that future cash flows are uncertain, holding cash gives a safety margin for eventual downturns. And finally (3) the ownership of cash guarantees the undertaken of highly profitable investments that demands immediate payment.

Therefore it is important that the financial managers strike the appropriate balance between the adequate liquidity and a reasonable return for the company. The decision about the liquidity level should be based in the following dilemma: The larger the applied resources in current assets, the lower the profitability (however also is lower the solvency risk); however a lower level of net working capital by the same time that it increases the profitability it also increases the solvency risk of the firm, by reducing the long term funds that could be transferred to less profitable assets. Therefore achieving the optimal liquidity levels should drive the decision process in a firm that wants to report high financial performance.

Also, according to the economic theory, risk and profitability are positively related (the more risky the investment, the higher the profits it should offer), thus since higher liquidity means less risk, it would also mean lower profits.

According to Neto (2003), the greater the amount of funds invested in current assets, the lower the profitability, and by the same time the less risky is the working capital strategy. In this situation, the returns are lower in the case of a greater financial slack, in comparison to a less liquid working capital structure. Conversely, a smaller amount of net working capital, while sacrificing the safety margin of the company, by raising its insolvency's risk, positively contributes to the achievement of larger return rates, since it restricts the volume of funds tied up in assets of lower profitability. This risk-return ratio behaves in a way that no change in liquidity occurs without the consequence of an opposite move in profitability.

The significance of liquidity to company performance might lead to the conclusion that it determines the profitability level of company (Eljelly, 2004). Liquidity is essential for company existence. It principally has an effect on financial costs reduction or growth, changes in the sales dynamic, as well as it influences on company risk level. The decisive significance of liquidity means that it is important for company development and at the same time it is one of the fundamental endogenous factors which is responsible for company market position (Zygmunt, 2013).

1.1.4 Construction and allied companies in Kenya

According to The Office of National Statistics UK (2009) on Standard Industrial Classification of Economic Activities, construction industry is a sector of the economy that transforms various resources into constructed physical economic and social infrastructure necessary for socio-economic development. It embraces the process by which the said physical infrastructure are planned, designed, procured, constructed or produced, altered, repaired, maintained and demolished. On the other hand, allied construction includes activities (allied trades), i.e. the construction, or preparation for construction, of parts of buildings and civil engineering works. These activities are usually specialised in one aspect common to different structures, requiring specialised skills or equipment.

Over the years the construction and allied companies have continued to play a critical role in Kenya's economic growth. Kenyan construction industry has experienced exponential growth due to government and private developers increase in investments in both infrastructure and housing. The construction boom is still expected to grow mainly due to the huge deficit experienced in infrastructure which includes rail, roads and ports (Muhoro, 2013).

The construction sector accounts for 5 per cent of Kenya's GDP and employs at least one million people. Secondly, the rapid growth in population, has tremendously led to a soaring demand for housing in most parts of the country, which also presents a major

opportunity for growth as private developers rush to keep up with this demand. Despite the recent slowdown in the world economy, the Kenyan construction sector has remained buoyant as reflected in the increased investment in both commercial and residential buildings over the past few years (Waithaka, 2011).

According to data from the Kenya National Bureau of Statistics, the construction sector grew by 13.1 per cent in 2014 boosted by massive road construction projects and increased activity in the real estate sector. Growth in the construction industry is mirrored in cement consumption which has been rising significantly over the last few years. Going forward, the construction and allied companies sector is still expected to grow further due to expected huge infrastructural projects such as Lamu port construction, Nairobi modern transport system, as well as rehabilitation of airports and roads across the country. Construction industry is regulated by the National Construction Authority.

According to the NSE (2010), a number of public and private companies have been under statutory management in the last decade due to liquidity issues. It is therefore worth investigating the effect of working capital management policy on performance.

1.2 Research Problem

Duttweiler (2009) defines liquidity as the capacity to fulfill all payment obligations as and when they fall due. Since it is done in cash, liquidity relates to flows of cash only. Not being able to perform leads to a condition of illiquidity. Firms can use their liquid

assets to finance their activities and investments when external sources of financing are not available as argued by Liargovas and Skandalis (2008). Higher liquidity can allow a firm to deal with unexpected contingencies and to cope with its obligations during periods of low earnings but an abundance of liquidity may do more harm than good.

Most failed businesses resulted from cash flow problems as observed by Peavler (2009), this is highly contributed by poor management which forces companies to go to liquidation. A number of companies have faced liquidity problems in the last decade. Examples are Kenya Airways, Mumias Sugar Company and Uchumi Supermarket Ltd. which have been reported that they have experienced a tight cash flow position that made it difficult for them to maintain supplier relations and consistent supplies.

Companies under construction industry arguably have been a victim of high production costs which invariably reduces profitability. This shows the importance of cash flow particularly when access to cash is difficult and expensive. When firms have problems with liquidity they may defer their payments to creditors which is harmful for companies and can result in several consequences like worse credit terms in the future. This in the long run adversely affects profitability. Strategies which can be adapted within the firm to improve liquidity and cash flows concern the management of working capital, areas which are usually neglected in times of favorable business conditions.

Studies were made in order to observe the interaction between these two variables, such as Lazaridis and Tryfonidis (2006) who found a relationship between liquidity

management efficiency and profitability. Companies enjoy better pricing when they hold enough cash to purchase from suppliers and thus they may enhance their profit. So having enough liquidity also affects the profitability of the firm. Siddiquee and Khan (2008) observed that firms which are better at managing liquidity are found to be able to make cyclical moves to build competitive advantage. They are also better at generating fund internally and also face lesser trouble while seeking external sources of financing.

Liquidity of the company significantly influences the profitability level of a company. This issue was the subject of many theoretical and empirical studies which were conducted, among others, by (Smith, 1980; Deloof, 2003; Eljelly, 2004; Lazaridis & Tryfonidis, 2006; Padachi, 2006; Owolabi & Obida, 2012). Mathuva (2009) examined the influence of working capital management components on the profitability of 30 firms listed on the Nairobi Stock Exchange. Although a number of studies have been done, the nature of liquidity impact on profitability is still not entirely recognized.

Construction is a major industry throughout the world accounting for a sizeable proportion of most countries' Gross Domestic Product (GDP) and Gross National Product (GNP). The importance of the construction sector is not only related to its size but also to its role as a catalyst in economic growth. Therefore when the construction industry faces liquidity challenges the economic growth is slowed down.

To the knowledge of the researcher, no specific study has been carried out in Kenya on how liquidity affects financial performance of Construction and allied companies, hence

the impetus for the study. This study sought answers to the following research question: what is the effect of liquidity on financial performance of construction and allied companies listed at the NSE?

1.3 Research Objective

The research objective was to establish the effects of liquidity on financial performance of construction and allied companies listed at the NSE.

1.4 Value of the Study

Liquidity plays a significant role in the successful functioning of a business firm. A firm 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, 2010).

Therefore, the justification of the study arises as a result of firms going under statutory management/receivership in Kenya and due to the unforeseeable changes in the global economic situations. Additionally, liquidity has proved to be a source of concern with some Kenyan firms both private and public especially at the wake of financial crisis e.g. bank loans are becoming too expensive to maintain. The importance of liquidity has even

acquired a new dimension in the advanced countries of the world in recent years. The result of the study will help prospective investors to make rational and more accurate decisions based on both liquidity and profitability. The results of the study will stress the importance of liquidity management on financial performance of the company. A company may be profitable without necessarily being liquid. Therefore, liquidity should be managed in order to obtain an optimal level, in this regard finance managers will help ensure that firms remain liquid by understanding the aspects that link up liquidity and company profitability. The creditors will also be enlightened on whether to extend credit facilities to the firms. The evidence obtained from this study will contribute to the body of knowledge and therefore useful to other scholars and researchers to establishing new theories related to the world of finance. The study will help in realignment of previous theories to modern technological innovations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relating to liquidity and a firms financial performance. The literature review has been organized in the following sections. First section covers the theories underlying the study, liquidity and a firm's financial performance. The second section covers the empirical studies on the subject area covered and summary of the section.

2.2 Theoretical Review

This chapter discusses liquidity management theories such as Keynesian Theory of Money, Baumol Inventory Model, Trade off Theory Liquidity and Miller and Orr's Cash Management Model.

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. The implication of this theory is that it 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.

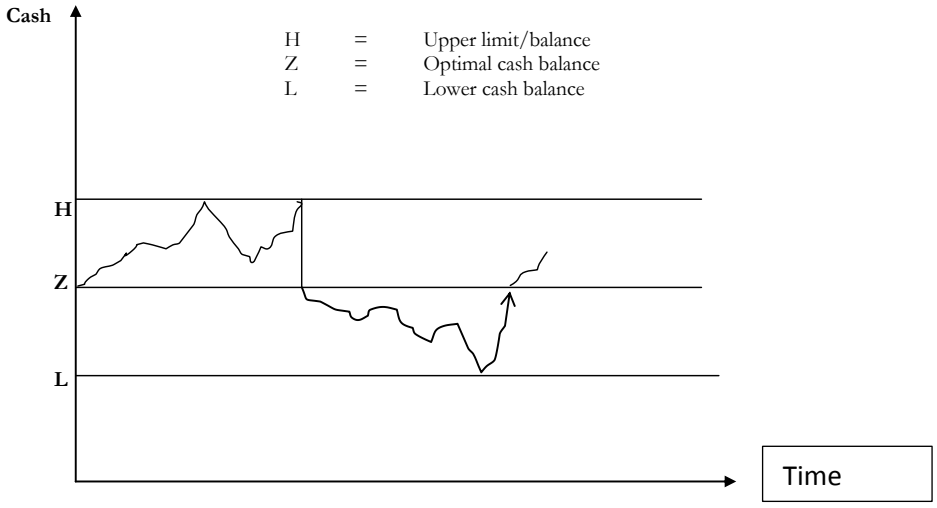
2.2.3 Trade off Theory Liquidity

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: (1) The firm save transaction costs to raise funds and does not need to liquidate assets to make payments and (2) The firm can use liquid assets to finance its activities and investment if other sources of funding are not available or are extremely expensive.

According to Niresh (2012) maintaining a proper liquidity indicates that funds are confined to liquid assets thereby making them unavailable for operational use or for investment purposes for higher returns. Therefore, firms should always strike to maintain a balance between conflicting objectives of liquidity and profitability. The firm's liquidity should not be too high or too low.

2.2.4 Miller and Orr's Cash Management Model

Miller and Orr (1966) describe a cash balance model to deal with cash inflows and out flows and outflows that fluctuate randomly from day to day. The model assumes that the distribution of net cash flows is normally distributed with a zero value of mean and a standard deviation. The model operates in terms of upper limit (H) and lower limit (L), and Return Point or Target Cash Balance (Z) as shown in the figure below:



Under the model, the organisation allows the cash balance to fluctuate between the upper control limit and the lower control limit, as long as the cash balance is between (H) and (L) the firm makes no transactions. It makes a purchase and sale of marketable assets only when one of these limits is reached. When the firm's cash limit fluctuates at random and touches the upper limit (H), the firm buys sufficient marketable securities to come back to a normal level of cash balance which is the return point (Z). Similarly, when the firm's cash flows wander and touch the lower limit (L), it sells sufficient marketable

securities to bring the cash balance back to the normal level which is the return point (Z). The Miller-Orr model depends on trading costs and opportunity costs. The cost per transaction of buying and selling marketable securities, F, is assumed to be fixed. The percentage opportunity cost per period of holding cash, K, is the daily interest rate on marketable securities. The model however does not provide the expected lower limit (L) which depends on management decision and is not handled in the model. The implications of this theory are: there should be a lower limit for the cash balance which could be related to minimum safety margin decided upon by the management, standard deviation of daily cash flows should be estimated, interest rate and trading costs of buying and selling marketable securities should be determined.

2.3 Determinants of Financial Performance of listed construction companies at NSE

The performance of firms can be affected by internal and external factors. The financial performance of a company is influenced by many factors. Some are firm specific which are under the control of the management while others are market specific and not unique to one firm. However, it is the responsibility of senior managers to assess the risks and take appropriate actions to ensure that a company's financial position is secure and it has the necessary cash available to trade with its customers and suppliers.

Examples of the factors that influence the financial performance of firms include; Liquidity, inflation rates, corporate governance practices, distribution networks among

others.

Liquidity is the ability of a firm to meet its current liabilities and ratio analysis is used to determine the liquidity position of a firm. The ratios that measure liquidity are current ratio, quick ratio and operating cash flow ratio (Operating Cash Flow Ratio = Operating Cash Flow / Current Liabilities). The operating cash flow ratio is a measure of a company's liquidity. If the operating cash flow is less than 1, the company has generated less cash in the period than it needs to pay off its short-term liabilities. This may signal a need for more capital.

2.3.1 Inflation Rates

Inflation is the rate at which the general level of prices for goods and services is rising and subsequently, purchasing power is falling. High inflation rates can have adverse consequences on the financial performance of a company. A growing theoretical literature describes mechanisms whereby even predictable increases in the rate of inflation interfere with the ability of the financial sector to allocate resources effectively. More specifically, recent theories emphasize the importance of informational asymmetries in credit markets and demonstrate how increases in the rate of inflation adversely affect credit market frictions with negative repercussions for financial sector (both banks and equity market) performance and therefore long-run real activity (Huybens & Smith 1998, 1999). Due to inflation the cost of goods increases and thus the profit margins reduce, lowering the financial performance of the company.

2.3.2 Corporate Governance Practices

Corporate governance is the process and structure used to direct and manage business affairs of a company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholders long-term value while taking into account the interest of other stakeholders. In other words it refers to the way in which a corporation is directed, administered and controlled. Of prime importance are those mechanisms and controls that are designed to reduce or eliminate the principal-agent problem (Kent & Ronald, 2010). Good corporate governance ensures transparency and credibility which enhances corporate performance.

2.3.3 Distribution Networks

A distribution network is the system a company uses to get products from the manufacturer to the retailer and finally reach the end user. A fast and reliable distribution network is essential to a successful business because customers must be able to get products and services when they want them. In the first field relating to the financial performances, Barthélemy (2008) focuses on the impact of the network resources and the governance structure on the financial performance of the chain. This author uses as performance criteria a combination of return on sales (ROS) and return on assets (ROA). Good distribution networks help in increasing customer base and hence high turnover volumes, leading to better performance for the firm.

2.3.4 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.

2.4 Empirical Review

This research will be conducted to study the effect of liquidity on the financial performance of construction companies listed at the NSE. The dependent variable is the financial performance as measured by Return on Capital Employed (ROCE). Liquidity as measured by current ratio and operating cash flow ratio (Operating Cash Flow Ratio = Operating Cash Flow / Current Liabilities) are the two main independent variables of the study. Control variables of the study include, capital structure, leverage, corporate governance, inflation and size of firm.

2.4.1 International Evidence

Alshatti (2015) conducted a research to find empirical evidence of the degree to which effective liquidity management affects profitability in Jordanian commercial banks and

how commercial banks can enhance their liquidity and profitability positions. Based on the research findings, the researcher concluded that, there is an effect of the liquidity management on profitability as measured by ROE or ROA, where the effect of the investment ratio and quick ratios on the profitability is positive when measured by ROE, and the effect of capital ratio on profitability is positive as measured by ROA.

A study by Dong and Su (2010) concluded that a firm's profitability and liquidity are affected by working capital management. The study used pooled data for the period between 2006 and 2008 to assess the companies listed in the Vietnam Stock Exchange. The study focused on CCC and related elements to measure working capital management. The study found that the relationships among these variables were strongly negative, suggesting that profit is negatively influenced by an increase in CCC. The study also found that profitability increases as the debtor's collection period and inventory conversion period reduce. The present study operationalized working capital management in terms of aggressiveness and conservatism as measured by the proportion of current liabilities to total assets and total liabilities.

Vahid, Mohsen and Mohammadreza (2012) investigated the impact of working capital management policies (aggressive and conservative policies) on the firms' profitability and value of listed companies in the Tehran Stock Exchange. The study used panel data and 17 operationalized working capital management policy as conservative/aggressive. The results of the study show that application of a conservative investment policy and aggressive financing policy has a negative impact on a firm's

profitability and value.

Bhunia and Das (2012) conducted a study to examine the relationship between the working capital management structure and the profitability of Indian private sector firms. The independent variables used in the study were ratios that affect working capital management and included the following: current ratio, liquid ratio, cash position ratio, debt-equity ratio, interest coverage ratio, inventory turnover ratio, debtors' turnover ratio, creditors' turnover ratio, and working capital cycle. Return on capital employed was used as a measure for profitability. Using multiple regression analysis, the study found a weak relationship between all the working capital management constructs and profitability. The study should, nevertheless, have been extended to identify the other factors that drive profitability in addition to working capital management.

Ehiedu (2014) conducted a study on The Impact of Liquidity on Profitability of Some Selected Companies in Nigeria and concluded that 75% of them indicated that current ratio has a significant positive correlation with profitability. The researcher believes that the reason for this positive relationship between current ratio and profitability is simply because idle funds, especially when they are borrowed, generate profit and less costs in the business. The two companies depicted a negative correlation between Acid test ratio and return on assets respectively. Thus, from the above results, 50% of the companies analyzed indicated a significant negative correlation between current ratio and acid test ratio. Hence there is no definite correlation between current ratio and profitability in this analysis.

2.4.2 Local Evidence

Apuoyo (2010) on his study on the relationship between working capital management policies and profitability for companies quoted at the NSE found that the financial and investment sector has been able to achieve high scores on the various components of working capital and this has positive impact on profitability.

Mathuva (2009) examined the influence of working capital management components on the profitability of 30 firms listed at the NSE. The study used the cash collection cycle to measure working capital. Mathuva (2009) applied the Pearson and Spearman's correlations, the pooled ordinary least squares, and the fixed effects regression models in data analysis. The study found a highly significant negative relationship between profitability and the time it takes for firms to collect cash from their customers. The study also found a highly significant positive relationship between profitability and the period taken to convert inventories to sales and the time it takes for firms to pay creditors.

Nyamao et al. (2012) conducted a study to investigate the effects of working capital management practices on the financial performance of small-scale enterprises (SSEs) in Kisii South District, Kenya. The study, which adopted a cross-sectional survey research design, found that working capital management practices were low amongst SSEs as majority of them had not adopted formal working capital management routines. Similarly, their financial performance was on a low average. The study concluded that working capital management practices influence the financial performance of small scale

enterprise. The study relied on primary qualitative data to measure the working capital management practices, but the present study measured working capital management in terms of aggressiveness/ conservatism using secondary quantitative data. The findings of the study also required validation in other areas of the country and among companies listed in the NSE.

Maina (2011) researched on relationship between liquidity and profitability of oil companies in Kenya covering the period 2007 - 2010. Secondary data was used in the analysis that was obtained from the firm's financial statements. A regression model was developed to determine the relationship between the dependent variable (Profitability of the firms) and independent variables (liquidity position). The independent variable used in the model consisted of current ratio, quick ratio, cash conversion cycle, while leverage and the age of the firm were used as control variables. The study found that that liquidity management is not a significant contributor alone of the firm's profitability and there exist other variable that will influence ROA. However, it is important for a firm to understand the effect of each of the liquidity components on the firm's profitability and also undertake deliberate measures to optimize its liquidity level.

2.5 Summary of Literature Review

A review of prior literature reveals that there exists a significant relation between liquidity and financial performance of a firm by using different variable selection for analysis. In addition, it has been found out that different companies have different levels

of liquidity and they will always strife to maintain the level of liquidity in the short term. Each study has been conducted under different economic conditions and hence cannot be used to generalize conclusions in other economies. Historical theories need to be realigned to current technological developments.

Empirical review reveals contradicting results, mainly due to the studies being conducted under different economic conditions. However, the studies have tended to examine a wider area of liquidity, namely, working capital. By narrowing the area on liquidity, the researcher will study the effect of liquidity on the financial performance of construction and allied firms listed at the NSE. Further, the data will extend over five years from 2009 to 2013 and this will allow the researcher to investigate dynamic aspects with regard to the changing information impacts of liquidity.

The international studies conducted so far in different countries are subject to different market conditions and stability; developed markets and emerging markets. It is thus inappropriate to apply the conclusions in Kenyan market condition which is a developing market. It is with this hindsight that the researcher found the need to study the effect of liquidity on financial performance of construction and allied companies listed at the NSE.

CHAPTER THREE: RESEARCH METHODOLGY

3.1 Introduction

This chapter presents the research methodology that was used to study the effect of liquidity on the financial performance of construction and allied companies listed at the NSE and the reason for selecting the particular methodology. It also gives the population size, data collection techniques and how the data was analyzed. It also talks about the data analytical models and test of significance used in arriving at the conclusions.

3.2 Research Design

Research design is concerned with producing a plan that guides the research process (Wilson, 2010). This study used Descriptive Research design. It is a design used to describe a situation and its data characteristics; in the sense that it tries to discover answers to the questions who, what, when, where and sometimes, how. The study used secondary data that was obtained from financial statements.

3.3 Population

The target population is the specific population about which information is desired. The population of interest in this study consisted of five construction and allied companies

listed at the NSE (Appendix 1) from year 2005 to 2014.

3.4 Data Collection

Data collection is gathering evidence in order to gain new insights about a situation and answer the question that necessitated the study. The study used secondary data to achieve the objective of the research which was extracted from the published annual financial statements of the target firms listed at the NSE from 2005 to 2014. This study employed a quantitative methodology in view of the nature of the variables used for analyses. The researcher collected information on current assets, current liabilities, operating cash flows, debt, equity, Earnings Before Interest and Tax (EBIT) and capital structure. The data was sourced from the NSE and CMA.

3.5 Data Analysis

Importantly, the data should be accurate, complete and suitable for further analysis (Sekaran & Bougie, 2010). Researcher has to record and arrange the data and then apply various descriptive and inferential statistics or econometrics concepts to explain the data and draw inferences (Saunders, 2009).

The data collected was analyzed using Statistical Package for the Social Sciences (SPSS). The financial ratios like current ratio, operating cash flow ratio and Return on Capital

Employed (ROCE) and debt to equity ratio were calculated for the period from 2005 to 2014.

3.5.1 Analytical Model

A regression model was applied to determine the effects of each of the variables with respect to financial performance. Regression is an attempt to explain movements in a variable by reference to movements in one or more other variables. According to Wagner (2007), regression models can be used in an explanatory study where researcher is interested in predicting the value of dependent variable based on the value of independent variable.

$$Y=\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_3 X_4 + \beta_3 X_5 + \varepsilon$$

Where ***Y***: is the firm's financial performance as measured by ROCE, which is ratio of Earnings Before Interest and Tax (EBIT) to Capital Employed

X_1: is the current ratio - Measured as ratio of Current assets to Current Liabilities.

X_2: is the operating cash flow ratio - Measured as ratio of Operating Cash Flow to Current Liabilities.

X_3: Debt to Equity ratio - Measured by total liabilities to Equity – control

variable.

$\boldsymbol{X_4}$: Natural logarithm of Total Assets - control variable.

$\boldsymbol{X_5}$: Natural logarithm of Sales - control variable.

$\boldsymbol{\varepsilon}$: Error term.

α: Intercept.

$\beta_{i,}$: coefficient of the independent variable *i* which measures the responsiveness of ***Y*** to changes in *i*.

The researcher test for multicollinearity using either of the following two approaches: Compute correlations between X_1 and X_2 pairs of predictors. If some *r* are close to 1 or -1, one of the two variable will be removed from the model.

Alternatively the researcher will calculate the variance inflation factors (VIF) for each predictor x_j and if $VIF_j \geq 10$ then there is a problem with multicollinearity, the researcher will drop one variable.

3.5.2 Test of Significance

F test was used to measure multiple variables which in our case are current ratio and

operating cash flow ratio. Under the F-test framework, two regressions are required known as the Unrestricted and Restricted Regression. The coefficient of determination (R^2) is defined as the sum of squares due to the regression divided by the sum of total squares. Usually, R^2 is interpreted as representing the percentage of variation in the dependent variable explained by variation in the independent variables. This is defined in terms of variation about the mean of Y (Financial Performance) so that if a model is rearranged and the dependent variable changes, R^2 changes. It is thus goodness of fit statistic given by ratio of the explained sum of squares.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the research findings to establish the effect of liquidity on financial performance of construction and allied companies listed at the Nairobi Securities Exchange. The study was conducted on a 10 years period where secondary data from the period of 2005 to 2014 was used in the analysis. Regression analysis was used in analyzing the data.

4.2 Descriptive Statistics

This section presents the research findings; it presents the study findings from the regression analysis.

Table 4.1 below shows that the return on capital employed for the 50 observations made from five companies for the years 2005 - 2014 is 17.62%, a high standard deviation of 10.77% with minimum at 0% and maximum at 43%. The current ratio is 1.62, a standard deviation of 0.57 with a minimum of 0.47 and a maximum of 3.3, the cash flow ratio is 1.42 with a standard deviation of 1.39, a minimum of 0.0 and a maximum of 5.89, debt to equity is 1.32 with a standard deviation of 0.67. Similarly the natural logarithm of total assets and natural logarithm of total sales is 8.97 and 8.79 with a standard deviation of 1.08 and 0.91 respectively

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROCE	50	.00	.43	.1762	.10766
Current Ratio	50	.47	3.30	1.6172	.57429
CF Ratio	50	.00	5.89	1.4168	1.38749
Debt Equity Ratio	50	.35	2.92	1.3196	.67124
NL Total Assets	50	6.96	10.67	8.9682	1.08438
NL Sales	50	7.06	10.53	8.7924	.91176
Valid N (listwise)	50				

Source: Research Findings

4.3 Correlation Analysis

Table 4.2: Correlation Analysis

		ROCE	Current Ratio	CF Ratio	Debt Equity Ratio	NL Total Assets	NL Sales
Pearson Correlation	ROCE	1					
	Current ratio	.263*	1				
	CF Ratio	.477**	.222	1			
	Current ratio	.263*	1				
	Debt Equity Ratio	-.416**	-.504**	-.303*	1		
	NLTotal Assets	-.196	.209	.435**	-.016	1	
	NL Sales	-.064	.360**	.475**	-.274*	.932**	1

Source: Research Findings

4.4 Regression Analysis

In this study, a multiple regression analysis was conducted to test the effect of liquidity on the financial performance of construction and allied companies listed at the Nairobi Securities Exchange. The research used statistical package for social sciences (SPSS V 22) to enter and compute the measurements of the multiple regressions.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.704[a]	.496	.439	.08066

Source: Research Findings

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.439 an indication that there was variation of 43.9% on financial performance of construction and allied companies listed at Nairobi Securities Exchange due to changes in current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales at 95% confidence interval. This shows that 43.9% changes in financial performance of construction and allied companies listed at Nairobi Securities Exchange could be accounted for by current ratio, operating cash flow ratio debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales. R is the correlation coefficient which shows the relationship between the study variables. From the findings shown in the table above there was a relatively strong positive relationship between the study variables as shown by 0.704.

Table 4.4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.282	5	.056	8.659	.000[b]
	Residual	.286	44	.007		
	Total	.568	49			

Source: Research Findings

From the ANOVA statistics shown in table, the processed data, which is the population parameters, had a significance level of 0.0% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. This shows that the overall model was significant and that current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales significantly affect the financial performance of construction and allied companies listed at the Nairobi Securities Exchange.

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.503	.152		3.305	.002
	Current Ratio	.026	.024	.140	1.086	.284
	CF Ratio	.047	.010	.611	4.850	.000
	Debt Equity Ratio	-.021	.027	-.130	-.786	.436
	NL Total Assets	-.062	.041	-.628	-1.517	.136
	NL Sales	.017	.051	.145	.337	.737

Source: Research Findings

From the data in the above table the established regression equation was;

$$Y = 0.503 + 0.026\ X_1 + 0.047\ X_2 - 0.021X_3 - 0.062X_4 + 0.017X_5$$

From the above regression equation it was revealed that holding current ratio, operating

cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales to a constant zero, financial performance of construction and allied companies listed at the Nairobi Securities Exchange would be at 0.503. A unit increase in current ratio would lead to increase in the financial performance of construction and allied companies listed at the Nairobi Securities Exchange by a factor of 0.026. A unit increase in operating cash flow ratio would lead to increase in the financial performance of construction and allied companies listed at the Nairobi Securities Exchange by a factor of 0.047 and a unit increase in debt to equity ratio would lead to a decrease in the financial performance of construction and allied companies listed at the Nairobi Securities Exchange by a factor of 0.021.

At 5% level of significance and 95% level of confidence, operating cash flow ratio had a 0.000 level of significance; natural logarithm of total assets showed a 0.136 level of significance, current ratio showed a 0.284 level of significance, debt to equity ratio showed a 0.436 level of significance while natural logarithm of sales showed 0.737 level of significance. Hence, the most significant factor is cash flow ratio. Overall, cash flow ratio had the greatest effect on the financial performance of construction and allied companies listed at NSE, followed by natural logarithm of total assets, then by current ratio, then by debt to equity ratio while natural logarithm of sales had the least effect to the financial performance of construction and allied companies listed at NSE. It is only cash flow ratio that was found to significantly affect financial performance of construction and allied companies listed at the NSE ($p<0.05$).

4.5 Discussion of Research Findings

From the findings of the regression analysis, the study found that there was a variation of 49.6% on financial performance of construction and allied companies listed at the Nairobi Securities Exchange due to changes in current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of sales. This is an indication that 49.6% changes in financial performance of construction and allied companies listed at the Nairobi Securities Exchange could be accounted for by current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of sales. The study further revealed that there was positive relationship between current ratio, operating cash flow ratio, natural logarithm of sales and financial performance; a negative relationship between debt to equity ratio, natural logarithm of total assets and financial performance of construction and allied companies listed at the Nairobi Securities Exchange as shown by the correlation coefficients.

From the finding on analysis of variance, the study found that the overall model had a significance value of 0.00% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The study further revealed that operating cash flow ratio significantly affects the financial performance of construction and allied companies listed at the NSE.

The established regression equation was:

$$Y = 0.503 + 0.026\ X_1 + 0.047\ X_2 - 0.021X_3 - 0.062X_4 + 0.017X_5$$

From the above regression equation it was revealed that holding current ratio, operating cash flow ratio and capital structure to a constant zero, financial performance of construction and allied companies listed at the NSE would be at 0.503. The study revealed that there was a positive relationship between current ratio, operating cash flow, natural logarithm of sales and financial performance and a negative relationship between debt to equity ratio, natural logarithm of total assets and financial performance of construction and allied companies listed at the NSE. All the variables were found to significantly affect financial performance of construction and allied companies listed at the NSE either positively or negatively.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. The researcher had intended to establish the effect of liquidity on the financial performance of construction and allied companies listed at the Nairobi Securities Exchange.

5.2 Summary

The objective of the study was to establish the effect of liquidity on the financial performance of construction and allied companies listed at the Nairobi Securities Exchange. Secondary data was collected from Nairobi Securities Exchange and multiple regression analysis used in the data analysis. From the findings of the regression analysis, the study found that there was a variation of 43.9% on financial performance of construction and allied companies listed at the Nairobi Securities Exchange due to changes in current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales. This is an indication that 43.9% changes in financial performance of construction and allied companies listed at the Nairobi Securities Exchange could be accounted for by current ratio, operating cash flow ratio debt to equity ratio, natural logarithm of total assets and natural logarithm of total

sales. The study further revealed that there was positive relationship between current ratio, operating cash flow ratio, natural logarithm of total sales and financial performance; a negative relationship between debt to equity ratio, natural logarithm of total assets and financial performance of construction and allied companies listed at the Nairobi Securities Exchange as shown by correlation coefficient.

From the finding on analysis of variance, the study found that the overall model had a significance value of 0.0% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The study further revealed that current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales significantly affects the financial performance of construction and allied companies listed at the NSE. The established regression equation was:

$$Y = 0.503 + 0.026\ X_1 + 0.047\ X_2 - 0.021X_3 - 0.062X_4 + 0.017X_5$$

From the above regression equation it was revealed that holding current ratio, operating cash flow ratio, debt to equity ratio, natural logarithm of total assets and natural logarithm of total sales to a constant zero, financial performance of construction and allied companies listed at the Nairobi Securities Exchange would be at 0.503. The study revealed that there was positive relationship between current ratio, operating cash flow ratio, natural logarithm of total sales and financial performance; a negative relationship between debt to equity ratio, natural logarithm of total assets and financial performance of construction and allied companies listed at the Nairobi Securities Exchange.

5.3 Conclusion

The study established that current ratio positively affect the financial performance of construction and allied companies listed at the NSE, thus the study concludes that liquidity positively affect the financial performance of construction and allied companies listed on the NSE.

The study also revealed that an increase in operating cash flow ratio positively affect the financial performance of construction and allied companies listed at the NSE, thus the study concludes operating cash flow ratio positively affect the financial performance of construction and allied companies listed at the NSE.

The study revealed that an increase in debt to equity negatively affects the financial performance of construction and allied companies listed at the NSE, thus the study concludes that debt to equity ratio negatively affects the financial performance of construction and allied companies listed at the NSE.

The study revealed that an increase in natural logarithm of total assets negatively affects the financial performance of construction and allied companies listed at the NSE, thus the study concludes that natural logarithm of total assets negatively affects the financial performance of construction and allied companies listed at the NSE.

The study revealed that an increase in natural logarithm of total sales positively affects the financial performance of construction and allied companies listed at the NSE, thus the

study concludes that natural logarithm of total sales positively affects the financial performance of construction and allied companies listed at the NSE.

5.4 Recommendations

From the findings and conclusion, the study recommends that there is need for construction and allied companies listed at the Nairobi Securities Exchange to increase their current assets so as to increase their liquidity as it was found that an increase in current ratio positively affect the financial performance.

The study further recommends that there is need for construction and allied companies listed on the Nairobi Securities Exchange to increase their operating cash flow, through reduction of their credit repayment period in order to positively influence their financial performance.

There is need for the construction and allied companies listed at the NSE to decrease their debt to equity ratio as it was found that debt negatively affects the financial performance of construction and allied companies listed at the Nairobi Securities Exchange.

The study further recommends that there is need for construction and allied companies listed on the Nairobi Securities Exchange to decrease their total assets, through disposing of their underutilized assets in order to positively influence their financial performance.

The study further recommends that there is need for construction and allied companies listed on the Nairobi Securities Exchange to increase their total sales in order to positively influence their financial performance.

5.5 Limitations of the Study

This study was not without limitations. In attaining its objective the study was limited to a 10 years period starting form year 2005 to year 2014. Secondary data was collected from the Kenya CMA and NSE. The study was also limited to the degree of precision of the data obtained from the secondary source. While the data was verifiable since it came from the CMA and NSE, it none-the-less could still be prone to these shortcomings.

The study was based on a 10 year period from the year 2005 to 2014. A longer duration of the study will have captured periods of various economic significances such as booms and recessions. The study was also limited to construction and allied companies listed at the Nairobi Securities Exchange; however, construction firms not listed at the NSE were not part of this study.

5.6 Suggestions for Further Research

The study sought to establish the effect of liquidity on the financial performance of construction and allied companies listed at the Nairobi Securities Exchange; the study recommends a further study to be done on the effects of liquidity on financial

performance of construction and allied companies not listed at the Nairobi Securities Exchange.

The study recommends that a further study should be done on the effects of working capital on the financial performance of construction and allied companies listed at the Nairobi Securities Exchange.

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APPENDICES

Appendix 1: List of Construction and Allied companies Listed on NSE as at 31 December 2014

1) Athi River Mining Limited
2) Bamburi Cement Limited
3) Crown Berger Limited
4) East African Cables Limited
5) East African Portland Cement Company Limited

Source: Nairobi Securities Exchange

Appendix 2: List of values of Y and X's

Athi River Mining Limited

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Y	0.12	0.13	0.22	0.21	0.11	0.10	0.11	0.11	0.10	0.11
X_1	2.03	0.98	1.11	1.02	1.00	1.32	0.84	1.22	0.95	0.47
X_2	0.38	0.39	0.96	0.51	0.85	1.23	3.11	0.63	3.29	0.99
X_3	1.68	2.10	1.54	1.99	1.94	2.36	2.37	2.79	2.61	2.92
X_4	8.08	8.36	8.41	8.76	9.40	9.72	9.93	10.20	10.30	10.52
X_5	7.70	7.87	8.26	8.44	8.55	8.69	9.01	9.34	9.56	9.53

Bamburi Cement Limited

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Y	0.25	0.24	0.31	0.26	0.35	0.31	0.30	0.19	0.14	0.16
X_1	2.09	2.27	2.20	1.84	2.58	1.72	2.62	2.35	2.68	2.30
X_2	1.37	1.66	1.35	2.10	4.54	4.42	2.87	3.78	2.62	2.99
X_3	0.36	0.35	0.37	0.70	0.53	0.54	0.39	0.39	0.37	0.41
X_4	9.64	9.83	9.94	10.25	10.38	10.41	10.42	10.67	10.67	10.62
X_5	9.63	9.71	10.00	10.22	10.31	10.24	10.49	10.53	10.43	10.49

Crown Berger Limited

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Y	0.15	0.16	0.19	0.13	0.20	0.20	0.14	0.14	0.18	0.01
X_1	1.60	1.60	1.59	1.34	1.44	1.49	1.46	1.54	1.38	1.15
X_2	(0.10)	0.25	0.38	(0.40)	0.76	0.49	0.47	0.53	(0.14)	(0.52)
X_3	0.95	0.99	0.87	1.37	1.22	1.19	1.11	0.92	1.16	1.86
X_4	7.14	7.34	7.33	7.57	7.53	7.59	7.70	7.72	7.99	8.26
X_5	7.27	7.43	7.64	7.78	7.84	8.03	8.26	8.40	8.55	8.71

East African Cables Limited

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Y	0.43	0.37	0.37	0.42	0.39	0.16	0.19	0.21	0.15	0.13
X_1	1.78	1.62	1.55	1.66	1.36	1.28	1.16	1.20	1.30	1.17
X_2	1.36	1.83	(1.95)	5.89	2.24	1.91	1.56	3.44	(2.74)	2.85
X_3	0.79	1.37	1.91	1.23	1.13	1.01	1.20	1.14	1.22	1.55
X_4	6.96	7.55	8.07	8.02	8.17	8.42	8.52	8.74	8.83	8.97
X_5	7.06	7.62	8.15	8.28	7.94	8.19	8.51	8.37	8.41	8.54

East African Portland Cement Company Limited

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Y	0.13	0.08	0.10	0.13	0.12	0.01	0.06	(0.05)	0.03	(0.01)
X_1	3.30	2.49	2.21	2.26	2.07	1.59	1.51	1.13	1.09	0.95
X_2	0.68	0.46	0.71	0.69	2.10	0.50	0.67	(0.23)	0.54	0.49
X_3	2.43	1.94	1.48	1.25	0.97	1.11	1.37	1.91	1.28	1.34
X_4	8.95	9.11	9.10	9.11	9.40	9.40	9.51	9.55	9.69	9.66
X_5	8.59	8.73	8.76	8.88	9.00	9.15	9.23	9.06	9.13	9.11