

**THE RELATIONSHIP BETWEEN LIQUIDITY AND LEVERAGE OF
COMPANIES QUOTED AT THE NSE**

BY

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DECLARATION

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

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Thanks to the Almighty God for with Him, everything is possible. To all, God bless the work of your hands.

DEDICATION

This research paper is dedicated to my parents, brothers; William, Dennis and Collins; and friends for their encouragement, advice and support that they have accorded me during my studies.

I specifically thank my parents; George and Jane Oduol for their financial and emotional support by investing in my education.

ABSTRACT

The objective of the study was to determine the relationship between liquidity and leverage of companies quoted at the NSE. The study considered thirty companies out of forty seven quoted firms at the NSE between 2006 to 2010. Secondary data was collected from the financial statements of individual companies and analyzed using multivariate regression analysis. The t statistics and F significance ANOVA were used to test the hypothesis.

The findings revealed that there is negative insignificant relationship between liquidity and leverage. Firms adopt the best market practices by putting in place good working capital management practices and short cash conversion cycles. The study is in agreement with other studies done in developing countries that portray negative relationship between liquidity and leverage.

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ABBREVIATIONS

CMA	Capital Markets Authority
KSH	Kenya Shillings
MM	Modigliani and Miller
NSE	Nairobi Stock Exchange
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
U.S.A	United States of America
WACC	Weighted Average Cost of Capital

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Capital structure framework involves minimization of overall cost of capital, maximization of firm's value and taking advantage of corporate leverage in presence of corporate taxes. Titman and Wessel (1988) documented that one of the challenging decisions that a firm faces is the choice of mixture of capital structure while considering the set – off between profitability and risks. Should it be based on the industries practices depending on the traditional structure or choices of action decisions of managers? Answer to this determines the performance, success of a firm and how investors are attracted to the firm. Capital structure management is important but it is not a guarantee to success since some firms achieve good prospects without any good capital structure plan.

The main cause of adverse selection and moral hazard is the presence of information asymmetry between shareholders and managers. Ross (1977) showed that capital structure is considered to be a signal in the allocation of cash flow to viable projects hence reduces the chances of market failure. Success of a firm depends on the capital structure and organizations that have failed in the market indicate that operating capital structure as a significant contributing factor. The performance of a firm depends on the extent to which a market is developed. A developing market will depend on banks to spur the growth and efficiency in the market. Demirguc, Asli and Huizinga (1999) proved that firms post high profit margins and charge high interests in undeveloped capital market due to presence of market inefficiency and low competition among firms. Capital market development lowers profits, improves efficiency and result to competition. However, there is no significant relationship between profitability and capital structure.

Liquidity management entails elimination of the default chances on obligations as they fall due and striking a match between short term assets and liabilities. Working capital management practices, through shortening of the cash conversion cycle, guarantees sufficient liquidity level and encourage managers to avoid external funding. Weiner (2006) documented that liquidity enables firms to survive during bad economic times and is achieved by holding a portfolio of liquid investment. Companies improve their liquidity level through adequate information disclosure on performance and letting the shares trade public in the stock exchange hence increase in firm value. This implies that the cost of capital can be lowered through improvement on liquidity index and higher firm value. Investors holding illiquid assets demand risk premium to protect them hence high rate of return and cost of capital; thus low firm value.

Profit squeeze is better than liquidity squeezing thus managers put in place proper structures that ensure proper working capital management. A liquid firm takes advantage of available investments, cash discounts and reduced interest charges offered by financial institutions. This enable the firm to grow, optimize its operations and expand its market coverage hence increases the market value. Jensen (1986) showed that firms are constrained when their level of liquidity is low and have negative working capital. They find themselves at a point where they cannot pay their obligations as they fall due. The higher the investment in risky liquid assets, the higher the yield rate returns hence spur in growth of a firm. A firm needs to allocate capital in different business lines based on the expected return.

Until recent, researchers have found that liquidity is a critical determinant in capital structure decisions since a well capitalized firm can fail because of lack of liquidity. Bhunia (2007) established that low level of liquidity is associated with high floatation costs thus high cost of

equity. A well performing firm maintains optimal capital; thus shareholders and debenture holders are confident on the operation and survival of the firm. Large firms in the world like Enron, WorldCom and Tyco Corporations have collapsed and for other firms reduction in share prices due to lack of liquidity as a result of poor assets – liabilities management policies. During the financial crisis, banks / firms find themselves with limited available cash to operate and settle their obligations.

1.1.1 Effects of Liquidity on Leverage

Leverage and liquidity are interlinked and levered company holds liquid assets as a precaution in order to absorb the economic shocks in the market and also to service the debt and future fixed charges. This relationship is determined by how much a firm pays out as dividend and firms with tangible assets prefer more debt than those holding intangible assets, Myers and Majluf, (1984). In support, Giannetti (2003) concluded that in less developed stock market, leverage level tend to be high due to agency costs associated in management of these respective firms. Also, firms that can access public debt tend to be highly leveraged and more liquid.

Equity shareholders incur transaction costs and risks when they buy and sell their shares hence they should be compensated. A highly liquid firm employs more equity to finance its activities leading to low leverage levels. According to the liquidity preference theory, investors are risk – averse and prefer long term securities since premiums are incorporated in forward rates and not the spot rates. Mendelson and Uno (1999) documented that investors incur transaction costs in each share dealing; thus portfolio held does not reduce the liquidity risk associated. High level of leverage put a firm in poor position since in case of bankruptcy, the debenture holders have higher priority of settlement of debt because they have the first

charge on assets and the residual proceeds paid to equity shareholders. Managers undertake activities that are beneficial to shareholders at the expense of bond holders. Liquidity tends to reduce the net cost of equity hence greater reliance on equity financing. From this perspective, it is clear that high level of leverage increases the firm's risks and lowers the liquidity levels; thus inverse relationship between leverage and liquidity hence support of the pecking order theory.

The trade - off between the costs and benefit of debt usage increases the level of leverage. This is not automatically in all cases. If the cost of liquidation is immaterial in comparison to benefit of debt usage, then liquidity do not affect capital structure decisions hence negative relationship. Yermac (1997) noted that managers utilize less optimal debt to protect their work force and to reduce the chances of financial distress. Pandey (2005) added that the net assets of a company can be increased by raising equity, posting higher profits and external borrowing. When a company issue debt, then it increases its level of liquidation risks in case of default since the firm has legal obligations of repaying the fixed charges and principal amount.

Morellac (2001) established that assets are used as collateral and the relationship between liquidity and leverage depends on the extent to which there exist contractual agreements between the firm and bond holders. Liquid assets have higher resale value and are most preferred since the cost of disposal is minimal. Disposal of such assets reduce the size and value of a firm. Restriction covenants between debenture holders and the firm reduces the risk exposure of creditors hence positive relationship between leverage and liquidity. On the other hand, if the restriction agreements are not in place, then this leads to negative relationship. Lipson and Mortal (2009), a U.S. based research, liquid firm utilize insignificant

leverage in their financing operations.

Does liquidity matter to a firm and to what extent is its impact on leverage? Many large companies report large amount of cash and cash equivalents held as at the end of financial year. This means they maintain high liquidity level but no financial theory has been documented in Kenya detailing optimal liquidity levels. This paper attempts to find out what are the optimal liquid assets that should be held by a firm at any given point and its effect on leverage.

1.1.2 The Nairobi Stock Exchange

NSE is a market established in 1953 and licensed by the CMA with the main mandate of regulating the security market and ensuring exchange of ownership of securities by bringing borrowers and investors together at low cost. Regulation of the quoted firms is achieved by ensuring that firms abide by the rules and regulations set by submitting their periodic performance reports. Also, the NSE educates the general public on investment issues. The products traded are securities which consist of shares/equities and bonds/debt investments. The shares of forty seven companies listed at the NSE trade in the four sectors namely agriculture, commercial and services, finance and investment and industrial and allied while bonds traded consist of government and corporate bonds (NSE, 2011)

Trading activities are conducted through the stockbrokers, licensed trading agents, who meet at the floor and facilitate exchange of share / bond ownership through the auctioning process. The market has made tremendous improvements from its inception to date. These include the first privatization at the NSE to be carried out in 1988 when the government off-loaded its 20% shares in Kenya Commercial Bank , in 1996, the market witnessed the largest share

issue of Kenya Airways and in 2006 , the NSE trading was fully automated. From these developments, the NSE becomes a point of interest to be studied.

1.2 Statement of the Problem

Observers, economists and academicians have pointed out there exists positive relationship between liquidity and leverage. Vishny and Shleifer (1992) produced evidence that in a competitive market, the realizable market value for liquid assets is less than their face value thus in cases of financial distress, the cost of liquidation will decrease. The ability of a firm to sell its assets has an impact on the level of financing and high liquid firms will employ more debt. Kihara (2006) showed that change in firm ownership from State Corporation to foreign investors lead to more debt usage in order to spur growth levels, improve credit rating and take up more business opportunities. This implies that debt is preferred. Also, Kiogora (2000) found out that the composition of capital structure of quoted firms at the NSE depends on the sectors in which they operate in. Firm's leverage and returns move in the same direction hence the positive relationship.

In contrast, there exists negative relationship. According to Titman (2008), developing countries have high level of corruption, political risks, severe information asymmetry, agency costs and the market is less sophisticated. Firms will use internal (retained earnings) and equity financing since it is easier to take possession of a firm from equity holders than debt holders. Such markets show that leverage and liquidity are inversely related. Munene (2006) concluded that firms quoted at the NSE adopt the pecking order theory. Profitable firms utilize more retained earnings than debt hence low leverage levels. In support, Mwaka (2006) studied the relationship between financial structure and growth of SMEs in Nairobi and found out that the SMEs finance their operations using retained earnings. Although debt is utilized,

it is in small proportion.

In conclusion, different scholars argue from different stand points on the relationship between liquidity and leverage hence the source of conflict. The general differences on the relationship between leverage and liquidity depends whether the market is debt developed or not. Based on the differences in previous literature, there is need for such research to be carried out in Kenya, where the market is developing, there is presence of information asymmetry and firms have adopted good working capital management policies. The study will aid the firms to improve their liquidity levels based on the extent to which they utilize leverage. The study intends to answer the research question, does the relationship exists between liquidity and leverage of firms in Kenya (developing country)? It will also bridge the knowledge gap about the correlation between liquidity and leverage in Kenya and add to the financial literature on prior studies done on the concepts of liquidity and leverage.

1.3 Objective of the Study

The objective of the study is to determine the relationship between liquidity and leverage of companies quoted at the NSE.

1.4 Importance of the Study

Investors

The paper will enable the investors to know the kind of information to be disclosed by firms on the financial statements pertaining to liquidity and leverage. The conclusions will also bridge the knowledge gap that exists in the market on financing and investing decisions.

Academicians

The findings of this study will make contributions to the existing paradigm on investors' behavior towards liquidity of a firm and it will be used to establish the research gaps and provide reference for further research under the field of financial structure and liquidity.

Organization

The study will enable the managers to establish optimal liquidity levels and adopt better working capital management policies.

Policy Makers / Regulators

The research will enable the policy makers to devise new standards in establishing an appropriate level of liquidity for firms and come up with more effective methods of managing liquidity levels of a firm. In addition, the research will shed light on importance of information distribution and development of the capital market in order to reduce the level of market imperfection

Researchers

Detailed understanding of the effect and correlation between liquidity and leverage of a firm. The study will also provide a base for further research especially in the areas of liquidity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This Chapter covers the various studies carried out on liquidity and leverage. It highlights the importance of liquidity and working capital management, capital structure theories, factors affecting the capital structure of a firm, relationship between liquidity and leverage and summary of the previous findings from various studies. It includes the theoretical framework as well.

2.2 Importance of Liquidity and Working Capital Management

Firm's liquidity refers to the ability to sell its assets immediately without incurring unexpected losses in market value since its price can be determined with certainty. Low cost of liquidity results to increase in firm value, high credit rating, improved funding capability, stable and high profits, improved confidence among regulators and stakeholders. Liquidity level is improved by optimizing the working capital in order to extract the cash trapped in the cash conversion cycle through engagement in supplier financing programmes, centralization of operations and automating the processes. This tends to eliminate losses and deliver the statements of financial position and comprehensive income benefits. Proper working capital management enables the enterprise to establish its adequacy, weaknesses and strategic actions to be implemented hence it determines the liquidity and profitability trade-offs. Bhunia (2007), an Indian study, argued that adequate current liquidity improves the working capital efficiency and there exist poor liquidity levels, poor receivables and inventory management; and low working capital levels in iron and steel firms in India. Overall, liquidity and working capital management are among the cornerstone for success of a firm.

2.3 Capital Structure Theories

Capital structure theories attempt to explain whether there is a relationship between capital structure, liquidity and firm value. If such a relationship exists, then there is optimal capital structure that maximizes firm value and minimizes the overall cost of capital. Various theories have been documented pertaining to capital structure and these include:-

2.3.1 Traditional View Theory

The findings from net income theory shows that there exists optimal capital structure hence it is relevant. Myers and Sunder (1999) noted that expensive capital (equity) is replaced with cheap source of capital (debt) since the cost of equity is higher than the cost of debt thus increase of debt usage leads to increase in firm's value. As per the net operating income theory on the other hand, the firm value is independent of capital structure. The firm value depends on the net operating income and overall cost of capital. The value of a firm differs depending on the proportion of debt and equity usage since different net operating income is capitalized at a constant overall cost of capital.

2.3.2 Modigliani and Miller Propositions

MM did various studies that are considered as the cornerstone of capital structure. In 1958, they documented that in a tax less economy, cost of capital remains independent of changes in the capital structure. This is only possible in a perfect efficient market and two identical firms with similar capital structure must command the same value. If this is not the case and investors realize the differences in firm value, then they will practice arbitrage, by selling their ownership in overvalued firm and buying shares in undervalued firm, until the two firms have the same market value. Myers (1984) found out that if the assumptions held in proposition I are eliminated one by one, then this leads to capital structure puzzle.

MM further advanced the proposition I in 1963 and incorporated corporate tax. They found out that a levered firm has higher value than unlevered firm. This is because interest on debt is tax deductible expense while dividends are disallowed as per the tax legislations. In 1978, MM modified the proposition II and incorporated both the corporate and personal taxes. Investors pay personal taxes on their income. The personal taxes don't eliminate but reduces the net benefit of leverage. In proposition IV, MM noticed that debt can only be employed until certain limit. Beyond this limit, then the firm incurs bankruptcy and monitoring costs which eventually reduce the liquidity levels and increase the chances of financial distress due. In essence, increase in WACC leads to reduction in firm value.

2.3.3 The Trade – Off Theory

Increase in debt – equity ratio leads to trade – off between interest tax shield and bankruptcy costs hence increase in firm value. Raviv and Harris (1990) findings revealed that profitable firm will have high gearing ratios. Otherwise, firms with risky and intangible assets will rely on equity financing hence low debt to equity proportion.

2.3.4 The Pecking Order Theory

Weiner (2006) established that managers follow a preference order of retained earnings to debt to external equity. No floatation costs are incurred when a firm utilizes retained earnings while debt is utilized to avoid dilution of shareholding. Equity is least preferred since it involves floatation costs and dilution of firm's ownership by spreading risks among various stakeholders.

2.3.5 The Market Timing Theory

The theory states that a firm will utilize either equity or debt based on the market value of stocks. Equity financing is preferred when company's stock have high value compared to past and book value, hence lower cost of equity. Dittmar, Mahrt and Servaes (2003) proved that managers will not exploit the mispricing of stock prices but use equity financing when stock prices are high.

In conclusion, neither high nor low level of borrowing is beneficial to the firm. As a mirror in the statement of financial position, capital structure decision remains complex. None of the studies has one stand point pertaining to optimal capital structure hence it remains a puzzle. No model states the ideal capital structure composition since each theory operates in different market environment.

2.4 Factors Affecting Capital Structure of a Firm

In attempt to find an optimal capital structure, various factors have been found to affect the financing decisions. These include the following:-

2.4.1 Stable Cash flows and Profit Margins

Firms with stable growth and cash flow streams use more debt to finance their activities because floatation costs incurred is less than when common stock is utilized and it can afford to pay the fixed charges associated with high debt levels. Competitive structure and high rate of return on investment stimulates use of retained earnings which is cheaper. Firms utilize equity during periods of fluctuation in sales and profit margins.

2.4.2 Cost of Capital and Tangibility of Assets

High cost of capital leads to costly borrowing hence equity is preferred. It is cheaper to maintain equity capital since once the shares start trading, the firm incurs no borrowing fees and floatation costs. Low cost of capital lead to high firm value. On tangibility, it is the ability of assets to be utilized as collateral. Bond holders will require collateral to protect their interests thus the direct proportional relationship between leverage level and liquidity of a firm.

2.4.3 Control and Ownership of the Firm

If management of the firm is in the hands of few ordinary shareholders, then control of the firm is easier. Firms will use preferred stock or debt in order to maintain control to limited shareholders since debt or preferred stock holders do not have voting and management right. In Wiwattanakantang (1999) study of Thailand firms, 35% of sampled firms are family owned. Non – dilution of ownership increases liquidity since it improves the trading capability of stocks in the market.

2.4.4 Marketability and Lender's Attitude

In unstable market, the firm should analyze the preference of shares by investors and this will guide them to raise debt, preferred stock or equity. Investors posses little information about the shares of the company hence they form an altitude pertaining to the trading of shares. Jensen (1986) suggested that in order to reduce the level of information asymmetry, bondholders should be provided with information which lowers the monitoring and agency costs in large firms. Also, large companies utilize debt to take advantage of debt tax shield and have stable cash streams.

2.4.5 Size of the Company

Small firms face high risks hence it becomes an obstacle when they want to raise capital through debt issue hence they utilize retained earnings, equity capital and short term debt to finance their activities. As per the trade – off theory, risks in large companies are reduced by diversification into various sectoral activities and trading in unique or specialized products thus low possibility of being bankrupt. Due to this, there is positive relationship between leverage and the size of a firm. Connell (1999) produced evidence that as the value of a company decreases, bankruptcy costs increase. Small companies prefer short term borrowings like bank loans than issue of debt and equity that are associated with higher fixed charges hence costly.

2.4.6 Floatation and Agency Costs

Floatation costs are incurred when the firm raises external funds. Debt issue is associated with less floatation costs hence preferred than equity capital. A firm should raise adequate funds that can be optimally be allocated to various revenue generating activities. Agency costs reduce the profitability level of a firm and existence of its problem forces firms to use more debt than equity.

2.4.7 Development of the Capital Market

If the market is debt or equity developed, then firms raise capital through debt or equity respectively and vice versa. In undeveloped debt market, there is negative relationship between leverage and performance of a firm. Even though a firm enjoys the tax shield associated, it is not enough to cover the high borrowing costs and fixed interest charges. Claessens and Fan (2002) observed that there exist protective legislations in a developed market that favor the external investors. In such markets, debt is more utilized since it is

cheaper to raise it than in less governed market. In Malaysia and Singapore, debt is more utilized due to presence of high standards of protection on external investors than in Thailand and Australia.

2.4.8 Tax Shield

Borrowing/ use of debt is preferred since the interest is tax deductible and firms use high level of debts in order to take advantage of tax shield. Warner (1977) noted that firms take advantage of debt utilization only when the tax shield is higher than the cash flow generated by the firm.

2.5 Effects of Liquidity on Leverage

Good corporate governance and generally accepted business practices encourage foreign investment, improve liquidity, boost performance and development of capital markets hence mitigation of agency problems between shareholders and managers. Njoroge (2011) noted that there exist strong relationship between foreign investment and corporate governance thus capital formation enhancement. Investors will be attracted to firms that have high assets performance / return, adequate working capital and proper capital structure. Additionally, Kihara (2006) came up with evidence that showed that on governance, the number of directors and debt ratio, affect firm's performance. There is no significant relationship between governance, ownership structure and performance of firms. Performance of Kenyan firms can only be promoted through privatization of state corporations and ownership by foreign firms. Enormous literatures have been done and evidence indicates that there exist effects of liquidity on capital structure that work in different reversing directions.

According to Anderson and Carvehill (2007), liquidity framework implemented by firms

enables them to balance their contractual agreements which are a remedy to agency problem. When debt issue is costly, then it is advisable for a firm to hold high liquid assets. Sibilkov (2007) also indicated that unsecured debt have a higher liquidity impact and lowers optimal leverage. When there exists bond covenants restriction, then liquidity increases debt capacity.

Moreover, Williamson (1988) observed that a high liquid firm should finance its operations through debt. It is very easy to liquidate such firms in cases of bankruptcy therefore bondholders will be protected since they have first charge on firm's assets. It is cheaper for firms to use debt in such circumstances. According to the results by Raviv and Harris (1990), shareholders utilize debt to take advantage of tax – shield hence levered firms perform better than unlevered ones. This forces the firm to abide by the contractual obligations of fixed charges and thus maintain its level of profitability to certain level by altering its strategic operating objectives. This means that there is trade – off between cost of debt and improved profitability. Increase in level of liquidity reduces the default rate and eventually increases the use of debt thus positive relationship between liquidity and leverage.

Liquidity levels differ from country to country and the sector under operations. A market that is unstable and growth rate is slow requires firms to have high liquidity to cover the risks associated in assets valuation. Likewise, a manufacturing firm that has steady cash flow will maintain low level of liquidity. Hatfield and Cheng' (1994) findings revealed that there exist relationship between debt of the firm and that of the industry; which does not have any significance to the market. Each firm adopts unique debt usage decision depending on the industry since rates of tax vary from industry to industry. Anderson (2002) carried out a research on the relationship between firm liquidity, capital structure and growth on listed firms in Belgium between 1986 to 1999. Although costly capital (debt) is utilized, it is

positive correlated to liquidity hence slows firm's growth. Agency conflict exists between managers and shareholders since managers opt to under invest in riskier and long term projects that yield high returns thus there is reduction in shareholders' wealth and dividend payment. Firms hold high liquidity levels for precautionary, speculative and transactional purposes enabling them to survive during the bad economic times. As a result, growth of a firm is slowed due to underinvestment in profitable and riskier projects. The results therefore suggest that there exist positive relationship between liquidity and leverage but negative correlation with the firm's growth.

On the other hand, several studies have shown that there exists negative correlation between liquidity and capital structure of a firm. Profitability level lowers the level of debt financing and in alignment to the pecking order theory; a firm utilizes its retained earnings before utilizing debt. Presence of debt leads to agency problems and ensures that efficiency is maintained. In contrast to trade – off theory, Rao and Mohamed (2007) investigated Oman firms on debt utilization, where the debt markets are underdeveloped, are highly liquid and charges high interest rates. Although, there is a tax shield enjoyed by a firm utilizing debt, the net set off cost of interest is higher than the tax shields hence the negative relationship between firm's performance and leverage. Also, Weiner (2006) established that internally generated funds are utilized than external funds since it's cheaper. Good working capital management practices and implementation of employee share ownership plans strategy ensure that there is sufficient liquidity for the firm since managers undertake activities that boost firm's value. This reduces the bankruptcy, financial distress costs and protection of takeover. According to Titman and Wessels (1988), manufacturing firms dealing in production of specialized spare parts and machines find liquidity to be costly and thus their operations is financed by less debt. As per Baker and Wurgler (2002) proved that liquidity

leads to high firm value and capital structure decision depends on prior cumulative trading share prices, thus equity is preferred.

Jensen and William (1976) did a survey on consumption of perquisites by managers. They observed that in equity financed firms, managers consume high perquisites compared to debt financed firms. There is restriction of misuse of cash in debt financed firms since liquidity is required to repay the debt and dividends. Moreover, Lipson and Mortal (2009) conducted a survey to test the relationship between capital structure and market liquidity. In their findings, the debt to asset ratio is 38% and 55% for highly and less liquid firms respectively. This proves that liquid firms utilize less debt hence negative association exists between leverage and liquidity. In support, Munene (2006) studied the impact of profitability on capital structure from 1999 to 2004 for all companies listed at the NSE by extending the pecking order theory and concluded that profitable firms use less debt than internal retained earnings hence low leverage proportion. Profitability alone cannot determine the optimal capital structure and others include the level of tax, risks and managers decisions altitude (aggressiveness or conservative).

Loughran and Schultz (2005) concluded that knowledgeable equity shareholders and urban location of firms improves the liquidity level since the level of information asymmetry is reduced. This affects the trade – off between debt and equity. Also, MM (1958 and 1963) studies argue that an optimal capital structure is determined through trade – off between the net cost of debt and equity. In the trade – off theory, as market equity liquidity increases, the debt liquidity may also increase. In addition, Sibilkov (2007), a U.S. based research, capital structure is affected by inefficient liquidation and financial distress costs. Asset liquidity increases in the same proportion compared to the managerial discretion costs. There exist

positive relationship between secured debt and liquidity while curvilinear relationship between unsecured debt and liquidity.

Composition of shareholding defines the mode of financing and family owned firms perform better since they are well managed than non- family firms; thus follow the pecking order theory. Myers (1984) and Chami (1999) found that smaller and younger family firms prefer retained earnings since the owners are interested in maximization of firm's value and survival in the market and in contrast, large and older firms opt for equity and little debt usage hence presence of agency conflict. Miller (1977) provided analysis on the level of investment by firms and found out that levered firms under invest in viable projects since proceeds, that boosts liquidity, is shared among the creditors and shareholders hence there is slowed growth.

Numerous studies have been done in Kenya pertaining to capital structure and in relation to liquidity. Mwaka (2006) carried out a research on capital structure and growth of the SMEs. In her findings, SMEs prefer internally generated funds. She used employees, sales, assets and size of the firm to derive growth. The SMEs face constraints in accessing external funds. Usage of internally generated funds is influenced by the constraints faced by the SMEs. Omondi (1996) reported that growth of firms is boosted through debt issue. Growth enables the firm to improve its profitability levels and firm's capital base. Odinga (2003) argue that non – tax shield and profitability level are the determinants of the extent to which leverage is preferred.

Capital structure decision is a puzzle since it is obvious that firms within a similar industry will utilize the same equity to debt proportions. In reality, this is not true as the proportion of equity to debt varies from company to company. Kiogora (2000) established that capital

structure of firms differ based on their respective sectors and those in the same industry tend to have similar capital structure. As the level of leverage increases, the firm's returns also increase hence positive relationship. Her research supports the traditional view of capital structure. Oltetia (2002) argued that capital structure is irrelevant and foreign investors when taken as a group have a significant impact on firm profitability compared to the state. State as a shareholder is considered to be inefficient hence has insignificant impact on profitability of a firm.

Morellac (2001) established that assets are used as collateral and the relationship between liquidity and leverage depends on the extent to which there exist contractual agreements between the firm and bond holders. Liquid assets have higher resale value and are most preferred since the cost of disposal is minimal. Disposal of such assets reduce the size and value of a firm. Restriction covenants between debenture holders and the firm reduces the risk exposure of creditors hence positive relationship between leverage and liquidity. On the other hand, if the restriction agreements are not in place, then this leads to negative relationship. Lipson and Mortal (2009), a U.S. based research, liquid firm utilize insignificant leverage in their financing operations.

2.6 Summary

In summary; liquidity framework and acquisition of assets increase the firm value and credit rating which eventually attracts investors. It is upon the firm to determine the level of leverage usage since high leverage levels affect the liquidity position thus growth is slowed down. Debt covenants between the firm and debenture holders ensure that liquidity is maintained in order to settle the fixed charges; thus debt usage promotes adoption of market best practices by firms. The firm utilizes debt to take advantage of tax shield because of the

net trade – off between the cost and benefit of debt usage.

Managers under invest in profitable risky projects because of the short term tenure they have in a firm. This leads to agency problems and the firm utilize more equity than debt. To solve this, employee share ownership plans should be implemented to encourage and boost managers' perspective in terms of investment and firm's growth. Liquidity reduces the cost of equity hence liquid firms are equity financed. Similarly, as per the pecking order theory, profitable firms utilize retained earnings and debt to control ownership and avoid the floatation costs. External equity is issued to spread the risks of a firm. High usage of debt leads to high chances of liquidation since the firm is unable to settle its fixed charges associated with debt. Even though there is a tax shield enjoyed by a firm, the cost of debt is high to cover the benefit associated.

Several prior studies provide that in a developing market, there is inefficiency, high level of corruption, information asymmetry, charges high interest rates, firms post high profits and assets are mispriced hence high liquidity and low leverage. The focus of this study is to find out the association that exists between liquidity and leverage in Kenya (developing market) and to have a detailed understanding of its effect to the economy in general.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of the study was to find out the relationship between liquidity and leverage. This chapter aims to address the research design, population of the study, sample design, data collection, presentation and techniques used for data analysis.

3.2 Research Design

The type of research design was a census survey since it intended to identify the relationship between liquidity and leverage of quoted companies at the NSE and quantifiable data was collected to determine the current status of the relationship.

3.3 Population of the Study

The population of the study covered companies listed at the N.S.E. (See Appendix I). NSE (2011) provided that there are a total of forty seven companies listed.

3.4 Sample Design

A sample of thirty companies (See Appendix II) that have been quoted for the five years (2006 – 2010) was considered from the population. All firms that fall under finance and investment sector were not considered since they do not have standardized debt and assets structure as other firms quoted in other sectors. Hutchings Biemer Ltd and Uchumi Supermarkets Ltd were suspended during this period considered for the study hence also ignored.

3.5 Data Collection

Secondary data was extracted from the audited annual reports and financial statements of individual companies sourced from the NSE and the CMA. In order to determine the relationship that exists between liquidity and leverage of companies quoted at the NSE, a period of five years (2006 – 2010) was considered. Data collected was classified as per sectors of the individual sampled companies. Group consolidated annual reports and financial statements were considered since they portray overall performance of a firm unlike the company's financial statements which show part performance of a company in a given region. The annual financial statements included the statements of comprehensive income, financial position, cash flows and changes in equity.

3.6 Data Analysis and Presentation

The data was presented in form of tables and pie charts where appropriate. Tables were used for visual display and to show the obtained figures as collected from the consolidated annual reports and financial statements. Pie charts were used to show the magnitude / relationship of the variables during the period under study. Descriptive statistics were used in the analysis through calculation of mean and percentages to measure and compare the results as reported in Chapter Four. The coefficients of constants were obtained after applying advanced MS Excel and SPSS.

3.7 Model Specification

As per the literature review done in Chapter Two, the findings reveal that there is a relationship between liquidity and leverage of a firm. The model was used to display the behavior of the equation and aid in careful analysis of the relationship that exists. The association between leverage and liquidity can be explained below after the definition of the

notations.

Let:-

D = Debt Ratio

L = Liquidity Ratio

C = Collateral Value of Assets

G = Growth

U = Uniqueness

P = Profitability

T = Tangibility

S = Size

b_i = Constant Multiplier for Independent Variables

E_t = Error Term

Analytical Relationship between leverage and Liquidity: Rao and Mohamed (2007) model

$$D = b_0 + b_1L + b_2C + b_3G + b_4U + b_5P + b_6T + b_7S + E_t \dots \dots \dots (3.1)$$

Table 3.1 Derivation of Variables

Response / Output Variable	Equation
Debt Ratio	$\frac{\text{Total Debt}}{\text{Total Assets}} \dots \dots \dots (3.2)$
Explanatory / Input Variable	Equation
Liquidity Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}} \dots \dots \dots (3.3)$
Collateral Value of Assets	$\frac{\text{Inventory} + \text{Plant Property and Equipment}}{\text{Total Assets}} \dots \dots \dots (3.4)$
Growth	$\frac{\text{Capital Expenditure}}{\text{Total Assets}} \dots \dots \dots (3.5)$
Uniqueness	$\frac{\text{Selling and Distribution Expenses}}{\text{Net Sales}} \dots \dots \dots (3.6)$
Profitability	$\frac{\text{Operating Income}}{\text{Net Sales}} \dots \dots \dots (3.7)$
Tangibility	$\frac{\text{Net Fixed Assets}}{\text{Total Assets}} \dots \dots \dots (3.8)$
Size	Log of Total Assets $\dots \dots \dots (3.9)$

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings derived from data collected and further analyzed. The analyzed data is presented in tables and pie charts in terms of derived means, frequencies, percentages and proportions where necessary. Explanations of the findings are discussed after each table. The chapter constitute of the general findings of various variables on leverage and liquidity, the relationship between liquidity and leverage of companies quoted at the NSE and finally the overall summary of the findings.

4.2 General Findings

This section details the findings of various variables analyzed in the market. Descriptive statistics was used to analyze the data collected and presented in tabular form (See Appendices III and IV). The mean, maximum and minimum values were used to select the companies of interest as described after each table for the reason of the pattern shown by the individual companies.

4.2.1 Net Working Capital

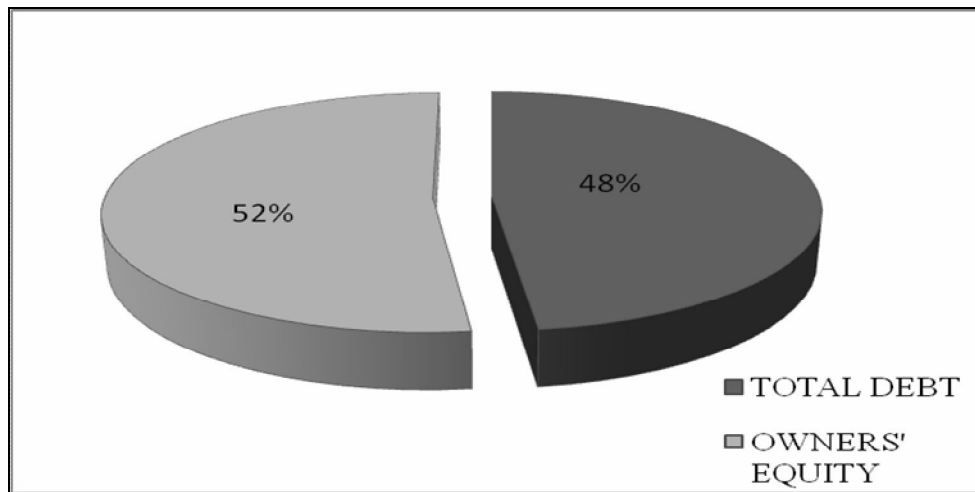
The summary of the data collected on net working capital is tabulated in appendix IV. From the sample of thirty companies, only Safaricom Ltd has a negative working capital. This is due to the pre-paid services offered by the firm. Net working capital determines the extent to which excess current assets can be utilized to settle debt when due. From the analysis, Scan Group Ltd had the highest proportion of current assets to total assets of 89% (see appendix IV) and Sasini Ltd the least ratio of 14 %. It is clear that liquidity differs from firm to firm depending on the nature of business and sector under operations. Scan Group Ltd specializes

in advertising which require investment in short term resources hence the highest score on the current assets to total assets ratio while Sasini Ltd falls under the agricultural sector which requires investment in heavy machineries thus high percentage on non – current assets to total assets proportion and also the biological assets / plantations mature beyond one year.

4.2.2 Leverage Level

Leverage indicates the extent to which firms use debt to finance their activities. From appendix III, the highest leverage level of 0.74 was recorded by Marshalls East Africa Ltd while Carbacid Investments Ltd recorded the lowest leverage level of 0.13. High leverage level increases the chances of firm’s bankruptcy since incase of default, the debt holders are able to liquidate the firm and get back their money.

Chart 4.1 Market Mean Debt Level



Source: Computed based on data from Annual Financial Reports (2006 – 2010)

From chart 4.1., the mean debt level recorded by firms was 48%. This implies that in average, firms are moderately levered and they finance their operations with more of equity than debt. This reduces the chances of liquidation in cases of default.

4.2.3 Liquidity Level

From appendix III, the mean liquidity ratio was 1.85. This implies that companies listed at the NSE have strong liquidity position since the rule of thumb requires that the current assets should be twice the current liabilities. Carbacid Investments Ltd had the maximum liquidity position of 8.08 and this was because the firm deals on products that require immediate cash hence shorter cash conversion cycle. Safaricom Ltd had the minimum liquidity position of 0.59 because of the prepaid services provided. Liquidity improves the credit rating and there is improved confidence among the investors and the firm.

4.2.4 Collateral Value of Assets

It shows the extent to which property, plant and equipment and inventory are available to be utilized as securities to enable a firm obtain external funding. The data collected on collateral value of assets is tabulated in Table 4.1

Table 4.1 Collateral Value of Assets (2006 – 2010)

Descriptive Statistics	Collateral Value of Assets
Maximum Ratio	0.82
Minimum Ratio	0.04
Mean Score	0.57

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

From the organization analyzed and tabulated in table 4.1, Kengen Ltd had the highest value of 82% while Scan Group Ltd recorded the least value of 4%. This was triggered by the industry under which the company falls. Kengen Ltd deals in electricity generation which requires heavy investment in property, plant and equipment compared to Scan Group Ltd which deals in advertisement hence investment in current resources. On average, the market's collateral value of assets was 57%.

4.2.5 Growth

Firms grow by capturing new markets and expanding their activities through diversification into various sectors leading to cash flow, profitability and sales stability. Table 4.2 below shows the data collected on growth.

Table 4.2 Growth (2006 – 2010)

Descriptive Statistics	Growth
Maximum Ratio	0.36
Minimum Ratio	0.01
Mean Score	0.09

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

From table 4.2., Access Kenya Group Ltd recorded the highest growth rate and the lowest ratio was recorded by Unga Group Ltd. During the period under study (2006-2010), there has been technology growth in Kenya and this was triggered by heavy investment by the government. The lowest growth by Unga Group Ltd was due to the climatic changes experienced within this period and crop failure hence the firm faced severe challenges within the sector. It forced the firm to search for strategic partner to reengineer the firm in order to improve its performance. The mean growth rate of firms listed at NSE was 9%.

4.2.6 Uniqueness

It measures the extent to which the firm is different from others in the market. It is a ratio of selling and distribution expense to turnover. Firms invest in sales and promotion activities in order to inform and give awareness to the public about its products and services offered. The data collected on uniqueness of a firm is tabulated in Table 4.3.

Table 4.3 Uniqueness (2006 – 2010)

Descriptive Statistics	Uniqueness
Maximum Ratio	0.43
Minimum Ratio	Nil
Mean Score	0.06

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

Kengen Ltd recorded the highest ratio of 43% since it is a monopoly and enjoys the competitive advantage in the market. Huge expenditure is incurred to transmit electricity. Firms like Access Kenya, TPS Eastern Africa (Serena) Ltd and B.O.C. Kenya Ltd had nil uniqueness since they operate in a perfect competitive or oligopolistic market. In general, the listed firms recorded 6% uniqueness in their operations.

4.2.7 Profitability

It is the ability of a firm to earn income and the higher the ratio, the stronger the ability to generate income. The data collected on uniqueness of a firm is tabulated in Table 4.4

Table 4.4 Profitability (2006 – 2010)

Descriptive Statistics	Profitability
Maximum Ratio	0.69
Minimum Ratio	0.03
Mean Score	0.18

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

The most profitable firm was Carbacid Investment Ltd followed by Sasini Ltd, East African Breweries and Safaricom Ltd. These firms have wide international markets hence stability in income and ability to record high profit levels. They engage in fast moving products and services thus ability to produce at low costs and maximize the returns. The least profitable firm during the period under study was Kenya Oil Ltd and this was due to instability of the Kenya shillings against the foreign currencies and the civic wars experienced in the oil

producing countries. Due to this, the firm incurred high input costs while the prices were controlled by the government hence minimization of income generated. Generally, 18% was the mean profitability index recorded in the market.

4.2.8 Tangibility

Lenders require security in order to provide debt / loans to the firm. The ability of a firm to secure loan depends on the extent to which it possesses non – current assets to be utilized as security. The data collected on tangibility of a firm is tabulated in Table 4.5

Table 4.5 Tangibility (2006 – 2010)

Descriptive Statistics	Tangibility
Maximum Ratio	0.86
Minimum Ratio	0.11
Mean Score	0.53

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

Sasini Ltd recorded the highest tangibility level of 86% due to its nature of business. Agricultural sector requires heavy investment and maintenance of plant factory in order to improve efficiency and achieve highest through- put. Scan Group Ltd had the lowest tangibility level of 11%. The market recorded a mean of 53% in terms of tangibility.

4.2.9 Size

The larger the size of a firm, the higher the investment in total assets and this eventually determines the annual revenue generated. The data collected on size of firms is tabulated in Table 4.6

Table 4.6 Size (2006 – 2010)

Descriptive Statistics	Size
Maximum Ratio	8.02
Minimum Ratio	6.01
Mean Score	6.85

Source: Computed based on data from Annual Financial Reports (2006 – 2010)

From table 4.6, Kengen Ltd recorded the highest size in terms of total assets held and Eveready East Africa Ltd recording the lowest rate of 6.01. Generally, firms listed at the NSE are large and have investment in subsidiaries and associates which eventually improves the firm's size.

4.3 The Relationship between Liquidity and Leverage of Companies Quoted at the NSE

In order to test the hypothesis of the study, SPSS and advanced MS Excel were used and results summarized. (See Appendix V)

The estimated model was:

$$D = 0.47 - 0.04L + 0.24C + 0.16G + 0.07U - 0.34P - 0.16T + 0.01S$$

$$\text{Std. Error } [0.28] [0.03] [0.14] [0.32] [0.29] [0.29] [0.15] [0.04]$$

$$t\text{-Statistic } [1.69] [-1.40] [1.74] [0.52] [0.25] [-1.16] [-1.02] [0.22]$$

$$R^2 = 0.60$$

$$\text{Adjusted } R^2 = 0.50$$

$$\text{Multiple } R = 0.77$$

$$\text{Durbin Watson Statistic} = 2.033$$

The R square and adjusted R of 60% and 50% show that the model is strong for the study. It is clear that there are other variables that affect leverage not explained by the model. The mean debt intercept of 0.47 indicates that for every increase on the variables considered, there are 0.47 increases in debt. The multiple R of 0.77 indicates that there is strong relationship

between leverage and variables considered. The Durbin Watson Statistic of 2.033 falls between 1 and 3 and thus shows that the model is good.

The t – statistics were used to test the hypothesis that there is a relationship between liquidity and leverage in equation 3.1.

$H_0: \beta_1 = 0$: There is no relationship between liquidity and leverage

$H_1: \beta_1 \neq 0$: There is relationship between liquidity and leverage

From the analysis, the t –statistics is -1.40, the F value is 4.71 and p value is 0.002.

This shows that:

P value $< \alpha$ (0.05) and the p value $\neq 0$; thus reject the null hypothesis.

The general conclusion is that there is negative insignificant relationship between liquidity and leverage of companies quoted at the NSE.

4.4 Summary

In summary, there is negative insignificant relationship between liquidity and leverage due to various reasons. Firstly, the Kenyan market is a developing market with presence of information asymmetry hence the existence of moral hazards and adverse selection. Firms report huge profit margins and charge high interest rates. A developed market promotes perfect competition thus efficiency is highly encouraged. Secondly, the firms adopt the pecking order theory by first utilizing retained earnings since it is cheaper; then debt in order to control ownership of the firm and finally equity issue to spread risks among various shareholders.

The positive relationship between collateral value of assets, growth, uniqueness, size and leverage exists while negative relationship between profitability, tangibility and leverage. On growth, significant positive relationship is triggered by the fact that firms require more funds

to expand and capture new markets. This can only be sourced through debt financing. On size, the firms at the NSE are large thus the positive relationship. This supports the agency theory and trade – off concept that argue that large firms have high borrowing capacity since they have diversified their operations into different sectors hence high total assets value. As the firms grow in size, cash flows and profit levels tend to stabilize and the possibility of going bankrupt is reduced.

The negative insignificant relationship between profitability and leverage supports the pecking order theory. The ability of a firm to generate profits to sustain their operations is critical. On tangibility, debt holders require security in order to safeguard their interest upon firm's liquidation or default in non repayment of loans. Firms at the NSE opt to utilize equity and retained earnings for their operations and high number of rights issue have been recorded in the Kenyan market. Due to this fact, the level of tangibility is inversely related to leverage.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The objective of the study was to determine the relationship between liquidity and leverage of companies quoted at the NSE and also to determine the effect of liquidity on leverage and how this affects the firm's operations. This chapter is a recap of the findings detailed in the previous chapters and make recommendations for further research to researchers and policy makers. The significant findings are summarized and conclusions drawn.

5.2 Summary

The study sought to determine the relationship between liquidity and leverage between 2006 – 2010. The research revealed that there is negative insignificant relationship between liquidity and leverage. Firms adopt the pecking order theory by utilizing retained earnings since no floatation cost is involved. When it is over, they use debt to control ownership and finally equity is employed to spread risks among various stakeholders.

Collateral value of assets, growth, uniqueness, profitability, tangibility and size of the firm are among the variables tested and found to affect leverage. From the analysis, collateral value of assets, growth, uniqueness and size have positive relationship with leverage but profitability and tangibility have negative relationship. It was further revealed that there exist insignificant relationship between liquidity, profitability and tangibility with leverage. The other variables considered had significant relationship with leverage.

5.3 Conclusions

From the organizations considered, it was established that there is negative insignificant relationship between liquidity and leverage. As the level of liquidity increases, the leverage level reduces. Firms maintain high liquidity levels to protect their human capital and reduce chances of financial distress. They adopt best market practices by putting in place good working capital management practices and short cash conversion cycles. This was evidenced from the data collected, analyzed and conclusions drawn. Through adoption of best liquidity practices; credit rating and fund capacity of firms is improved.

The lending financial institutions charge high interest rates, offer short term financing and record impressive profit margins. This means that the cost of debt is expensive for the firms thus low leverage levels. Firms have established competitive structures to curb these problems hence are able to finance their operations with retained earnings thus adoption of the pecking order theory.

Collateral values of assets, growth, uniqueness and size have positive relationship with leverage. Liquid assets have high resale values and disposal costs are low. Due to high level of liquidity portrayed by firms, it is automatically that collateral value of assets is positively related with leverage. The debt holders can sell the assets and recover their debt immediately. The firms grew during the period under the study and to some extent; they have financed their growth through issuing bonds hence the positive relationship between growth and leverage. Growth increases the size of the firms in terms of total assets base through diversification into various sectors of the economy.

The negative relationship between profitability, tangibility and leverage is due to the fact that

the firms record high profit levels and prefer to reinvest the income generated to finance their activities. Debt usage is expensive since the cost of debt surpasses the tax shield advantage. Also, they avoid debt to reduce their chances of liquidation. Based on these facts, firms adopt the pecking order theory. Through adoption of good working capital practices and high liquidity levels, most firms have not invested heavily on non – current assets. They maintain liquidity for expansion and take advantage of business opportunities in order to boost their returns. This explains why the level of tangibility is low and the negative relationship with leverage. In overall, the relation between liquidity and leverage is negative.

5.4 Limitations of the Study

In the course of the research, the following problems were encountered. Firstly, the annual financial statements are prepared under the underlying assumptions and concepts. These assumptions are subjective thus non – standardization of their applicability especially in terms of provisions and estimates. Secondly, they report historical data hence unable to adequately predict the future due to the volatility in the market. Thirdly, most of the financial statements were restated in the preceding years. This means that there were material misstatements of firms’ performance and this creates a window of opportunity for prior year adjustments and not informing the public of the same. This means that pattern portrayed may affect the relationship established. Fourthly, the study was carried out when the market recorded highest levels of inflation. These levels were not incorporated in the study.

5.5 Recommendations for Further Research

The study considered firms quoted at the NSE between 2006 – 2010 thus the researcher recommends for an event study to be carried out in the same field. It is clear that towards election or referendum, the market records highest level of inflation and weakening of the

shilling due to the presence of political risks. This has an impact on the liquidity position and leverage level of a firm. Secondly, based on the findings there is negative relationship between liquidity and leverage in Kenya. This creates a potential for further research in other countries within Africa in order to determine if the same relationship exist. With the introduction of Sacco Societies Regulatory Authority (SASRA), further research is recommended to establish whether the co-operative societies and SMEs exhibit the same relationship as the quoted firms in Kenya. From the behavioral finance point of view, relationship between liquidity, dividend policy and stock value should be determined. Further research should determine why share values fall but the firms record high levels of profits.

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APPENDICES

Appendix I: Companies Listed at the NSE

Sector / Industry	Name of the Company	
Agricultural	<ol style="list-style-type: none"> 1. Rea Vipingo Plantations Ltd 2. Sasini Ltd 3. Kakuzi Ltd 	
Commercial and Services	<ol style="list-style-type: none"> 1. Access Kenya Group Ltd 2. Marshalls East Africa Ltd 3. Car & General Ltd 4. Hutchings Biemer Ltd – Suspended 5. Kenya Airways Ltd 6. Cooper Motors Corporation (CMC) Holdings Ltd 	<ol style="list-style-type: none"> 7. Uchumi Supermarkets Ltd – Relisted (2011) 8. Nation Media Group Ltd 9. TPS Eastern Africa (Serena) Ltd 10. Scan Group Ltd 11. Standard Group Ltd 12. Safaricom Ltd
Finance and Investment	<ol style="list-style-type: none"> 1. Barclays Bank of Kenya Ltd 2. CFC Stanbic Holdings Ltd 3. Housing Finance Co. Ltd 4. Centum Investment Co. Ltd 5. Kenya Commercial Bank Ltd 6. National Bank of Kenya Ltd 7. Pan Africa Insurance Holdings Ltd 8. Diamond Trust Bank of Kenya Ltd 	<ol style="list-style-type: none"> 9. Jubilee Holdings Ltd 10. Standard Chartered Bank Ltd 11. NIC Bank Ltd 12. Equity Bank Ltd 13. Olympia Capital Holdings Ltd 14. The Co-operative Bank of Kenya Ltd 15. Kenya Re – Insurance Corporation Ltd
Industrial and Allied	<ol style="list-style-type: none"> 1. Athi River Mining Ltd 2. B.O.C Kenya Ltd 3. British American Tobacco Kenya Ltd 4. Carbacid Investments Ltd 5. East African Cables Ltd 6. East African Breweries Ltd 7. Sameer Africa Ltd 8. Kenya Oil Ltd (Kenol Kobil) 9. Mumias Sugar Company Ltd 	<ol style="list-style-type: none"> 10. Unga Group Ltd 11. Bamburi Cement Ltd 12. Crown Berger (Kenya) Ltd 13. East African Portland Cement Co. Ltd 14. Kenya Power & Lighting Co. Ltd 15. Total Kenya Ltd 16. Eveready East Africa Ltd 17. Kengen Ltd

Source: NSE & CMA (2011)

Appendix II: Sample used

1. Rea Vipingo Plantations Ltd
2. Sasini Ltd
3. Kakuzi Ltd
4. Access Kenya Group Ltd
5. Marshalls East Africa Ltd
6. Car and General Ltd
7. Kenya Airways Ltd
8. Cooper Motors Corporation (CMC) Holdings Ltd
9. Nation Media Group Ltd
10. TPS Eastern Africa (Serena) Ltd
11. Scan Group Ltd
12. Standard Group Ltd
13. Safaricom Ltd
14. Athi River Mining Ltd
15. B.O.C Kenya Ltd
16. British American Tobacco Kenya Ltd
17. Carbacid Investments Ltd
18. East African Cables Ltd
19. East African Breweries Ltd
20. Sameer Africa Ltd
21. Kenya Oil Ltd (Kenol Kobil)
22. Mumias Sugar Company Ltd
23. Unga Group Ltd
24. Bamburi Cement Ltd
25. Crown Berger (Kenya) Ltd
26. East African Portland Cement Co. Ltd
27. Kenya Power & Lighting Co. Ltd
28. Total Kenya Ltd
29. Eveready East Africa Ltd
30. Kengen Ltd

Appendix III: Data on Determinants that affect Leverage of Firms – Descriptive Statistics (Mean)

	Debt Ratio	Liquidity Ratio	Collateral Value	Growth	Uniqueness	Profitability	Tangibility	Size
Marshalls E.A. Ltd	0.74	1.23	0.62	0.02	0.04	0.07	0.39	6.07
Kenya Airways	0.73	1.12	0.70	0.14	0.01	0.07	0.74	7.87
Total Kenya Ltd	0.68	1.17	0.47	0.02	0.00	0.03	0.28	7.32
Athi River Mining	0.68	1.11	0.81	0.23	0.06	0.20	0.73	6.94
Kenya Oil Ltd	0.62	1.32	0.49	0.03	0.01	0.03	0.21	7.37
Standard Group Ltd	0.61	1.27	0.65	0.16	0.07	0.18	0.61	6.45
Eveready E.A. Ltd	0.60	1.58	0.74	0.05	0.06	0.07	0.19	6.01
CMC Holding Ltd	0.59	1.46	0.59	0.02	0.04	0.10	0.18	7.06
K.P.L.C.	0.59	1.06	0.77	0.20	0.09	0.08	0.68	7.77
E.A.Portland Ltd	0.56	2.09	0.76	0.09	0.09	0.10	0.70	7.01
E.A. Cables Ltd	0.56	1.48	0.61	0.08	0.03	0.17	0.45	6.51
Crown Berger Ltd	0.53	1.47	0.57	0.05	0.11	0.07	0.30	6.25
B.A.T. Ltd	0.52	1.09	0.76	0.09	0.06	0.22	0.57	6.99
Scan Group Ltd	0.51	1.78	0.04	0.05	0.02	0.07	0.11	6.57
Car and General	0.50	1.45	0.57	0.02	0.05	0.10	0.41	6.35
Access Kenya Ltd	0.47	1.25	0.47	0.36	0.00	0.12	0.61	6.20
Kengen Ltd	0.44	2.39	0.82	0.06	0.43	0.35	0.85	8.02
Safaricom Ltd	0.43	0.59	0.77	0.26	0.03	0.29	0.81	7.87
TPS (Serena) Ltd	0.42	1.33	0.67	0.11	0.00	0.18	0.80	6.89
Rea Vipingo Ltd	0.40	1.55	0.44	0.07	0.05	0.15	0.61	6.15
Unga Group Ltd	0.38	1.92	0.59	0.01	0.03	0.04	0.39	6.69
Mumias Co. Ltd	0.37	1.73	0.71	0.10	0.07	0.14	0.67	7.17
E.A. Breweries Ltd	0.37	1.69	0.54	0.09	0.06	0.33	0.50	7.51
Bamburi Cement	0.34	2.05	0.58	0.11	0.03	0.26	0.64	7.42
Nation Media Ltd	0.33	2.00	0.37	0.07	0.03	0.21	0.39	6.81
Kakuzi Ltd	0.33	1.77	0.25	0.04	.019	0.27	0.77	6.48
Sameer Africa Ltd	0.32	2.48	0.56	0.03	0.01	0.06	0.31	6.49
Sasini Ltd	0.27	2.36	0.30	0.02	0.01	0.45	0.86	6.80
B.O.C Kenya Ltd	0.25	3.56	0.50	0.07	0.00	0.25	0.46	6.25
Carbacid Inv. Ltd	0.13	8.08	0.51	0.13	0.04	0.69	0.67	6.21

Source: Annual Reports and Financial Statements (2006 – 2010)

Appendix IV: Data on Liquidity of Firms

	Current Assets Kshs' '000'	Total Assets Kshs' '000'	Current Liabilities Kshs' '000'	Net Working Capital Kshs' '000'	% of Current Assets to Total Assets
Rea Vipingo Plantations Ltd	546,498	1,397,272	351,811	194,687	0.39
Sasini Ltd	869,750	6,309,902	368,684	501,066	0.14
Kakuzi Ltd	707,004	3,045,923	398,417	308,587	0.23
Access Kenya Group Ltd	611,545	1,571,340	488,251	123,294	0.39
Marshalls East Africa Ltd	714,331	1,178,918	580,141	134,190	0.61
Car and General Ltd	1,332,422	2,252,856	919,740	412,682	0.59
Kenya Airways Ltd	19,221,600	74,311,000	17,218,000	2,003,600	0.26
CMC Holdings Ltd	9,381,590	11,424,556	6,432,893	2,948,697	0.82
Nation Media Group Ltd	3,937,880	6,492,160	1,965,440	1,972,440	0.61
TPS Eastern Africa (Serena) Ltd	1,499,085	7,674,014	1,129,664	369,420	0.20
Scan Group Ltd	3,342,921	3,739,049	1,877,355	1,465,566	0.89
Standard Group Ltd	1,083,814	2,810,927	850,533	233,282	0.39
Safaricom Ltd	14,128,834	74,104,235	23,789,327	(9,660,493)	0.19
Athi River Mining Ltd	2,345,523	8,763,495	2,110,240	235,283	0.27
B.O.C Kenya Ltd	961,617	1,778,029	270,217	691,401	0.54
British American Tobacco Ltd	4,246,057	9,803,706	3,900,895	345,162	0.43
Carbacid Investments Ltd	537,870	1,625,186	66,555	471,315	0.33
East African Cables Ltd	1,788,464	3,244,555	1,207,978	580,486	0.55
East African Breweries Ltd	16,170,295	32,261,347	9,554,202	6,616,093	0.50
Sameer Africa Ltd	2,122,042	3,079,756	855,544	1,266,499	0.69
Kenya Oil Ltd (Kenol Kobil)	18,537,306	23,566,825	14,090,635	4,446,671	0.79
Mumias Sugar Company Ltd	4,843,943	14,750,155	2,805,775	2,038,168	0.33
Unga Group Ltd	3,006,698	4,903,042	1,568,065	1,438,633	0.61
Bamburi Cement Ltd	9,668,600	26,573,200	4,706,400	4,962,200	0.39
Crown Berger (Kenya) Ltd	1,237,752	1,767,944	840,486	397,266	0.70
East African Portland Cement Ltd	3,071,311	10,227,530	1,471,723	1,599,589	0.30
Kenya Power & Lighting Co. Ltd	19,137,392	59,344,959	18,108,739	1,028,653	0.32
Total Kenya Ltd	14,956,150	20,830,911	12,813,269	2,142,881	0.72
Eveready East Africa Ltd	825,116	1,022,611	523,810	301,306	0.81
Kengen Ltd	15,625,821	105,192,393	6,542,168	9,083,652	0.15

Source: Annual Reports and Financial Statements (2006 – 2010)

Appendix V: The Regression Results for the Relationship between Liquidity and Leverage of Companies Quoted at the NSE

Regression Statistics	
Multiple R	0.77
R Square	0.60
Adjusted R Square	0.47
Standard Error	0.11
Observations	30

Analysis of Variance (ANOVA) Table					
	Degrees of Freedom, d.f.	Sum of Squares, SS	Mean Square, MS	F – Ratio	Significance F
Regression	7	0.39	0.06	4.71	0.002365
Residual	22	0.26	0.01		
Total	29	0.66			

	Coefficients	Standard Error	t Statistics	P-value	Lower 95%	Upper 95%
Intercept	0.47	0.28	1.69	0.11	-0.11	1.04
Liquidity Ratio	-0.04	0.03	-1.40	0.18	-0.09	0.02
Collateral Value of Assets	0.24	0.14	1.74	0.10	-0.05	0.53
Growth	0.16	0.32	0.52	0.61	-0.49	0.82
Uniqueness	0.07	0.29	0.25	0.81	-0.53	0.68
Profitability	-0.34	0.29	-1.16	0.26	-0.95	0.27
Tangibility	-0.16	0.15	-1.02	0.32	-0.48	0.16
Size	0.01	0.04	0.22	0.83	-0.08	0.10

The coefficients were obtained after applying the SPSS and advanced MS Excel