

**A STUDY OF THE RELATIONSHIP BETWEEN LIQUIDITY
RATIOS AND SHARE PERFORMANCE OF COMPANIES LISTED
ON THE NAIROBI STOCK EXCHANGE**

BY:

MUNYASYA ANTHONY NZALE

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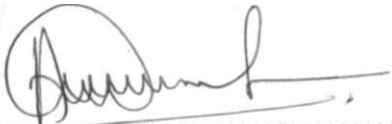
SUPERVISOR: MR. OTIENO LUTHER ODHIAMBO

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DECLARATION

This Management Project is my original work and has not been presented for a degree in any other University.

SIGNED:  **DATE** *j U) -1 h 7U>o%*

MUNYASYA, ANTHONY N.

This Management Project has been submitted for Examination with my approval as University Supervisor.

SIGNED: **DATE**

OTIENO LUTHER ODHIAMBO (MR)
LECTURER,
DEPARTMENT OF ACCOUNTING AND FINANCE
SCHOOL OF BUSINESS

DEDICATION

This work is dedicated to my late father -Wilson Munyasya Mutui whose indomitable spirit and loving heart were and are still an inspiration to me.

ACKNOWLEDGEMENT

I would like to acknowledge the almighty God for the gift of life, care, and protection.

My gratitude is extended to my supervisor, Mr. Otieno Luther Odhiambo who has been very supportive, cooperative, kind, good and even understanding throughout the period of working on this research work. His contribution to data analysis cannot be forgotten.

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ABSTRACT

Share performance is determined by the positive increases in prices together with the dividend distributions during the period. The classical economic view posits that the current price of a stock closely reflects the present value of its future cash flows (Kumar and Charles, 2006). According to this view, the correlations in the returns of two assets arise from correlations in the changes in the assets' fundamental values, with demand shocks or shifts in investor sentiment playing no role because the actions of arbitrageurs readily offset such shocks. This indicates that liquidity ratios may have an impact on share prices as they are likely to affect the organization's fundamental asset values.

This paper thus sought to determine the extent to which firm liquidity affects the share prices of the listed firms. To document the return patterns as well as obtain residuals for hypothesis testing, financial ratio data to measure liquidity was computed from published reports of the quoted companies for the years 1997 to 1999 while to measure share performance the share prices were obtained from NSE trades. An empirical study was conducted using NSE listed firms as the population.

The findings of the study were that share prices were adversely affected by a decline in firm liquidity. The results indicated that there exists a general association between the firm's current ratio and quick ratio and its stock return, but the association is structurally unstable. It was noted that from 1997 to 1999 the means of the share returns of the firms declined with a reduction in the liquidity levels of the firms.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

Liquidity refers to the ability of a firm to meet its short term and long-term financial obligations as they fall due. It is therefore not surprising that liquidity is an important concept in the world of business. Research has established that liquidity is an important determinant of financial distress (Mervin, 1942; Beaver, 1966). Consequently, it is used by a variety of persons to evaluate the riskness of firms as well as their performance. Murphy (2005) points out that Enron's bankruptcy was nearly inevitable because of the combination of the company's low cash resources and its reliance on manipulative trading profits that could not be expected to continue indefinitely. However, even if Enron had somehow been able to survive its liquidity squeeze and avoid its 2002 bankruptcy, the stock was clearly overpriced up until the final weeks before the end.

If a company's current liabilities exceed their current assets; that is if the working capital of a firm is in the negative, it's true that the firm may run into liquidity trouble that is the inability to pay creditors especially when creditors' dues are demanded quickly. In such a situation, a firm may also not be able to meet its obligations such as financing daily operations of the business. A study conducted among the Fortune 1000 firms in 1985 by Gitman et al found that financial planning and budgeting were ranked as highly important and practitioners devote greater time to the management of assets while textbooks seem to place greater emphasis on liabilities and equities. Gitman & Mercurio (1982) suggested that finance academicians and financial managers should develop a stronger

communication link to enhance the transfer of knowledge and needs between them. Working capital ratio is important in describing a firm's liquidity. The goal of working capital management is to ensure that a firm is able to continue its operations and it's sufficiently able to satisfy maturing short-term debt and potential operational expenses.

Working capital management therefore is probably one of the most central and most important responsibilities of finance managers. Current assets and current liabilities represent a significant investment by business and the liquidity position of the firm is determined by the composition and financing of these current accounts (Lamberson, 1985). Adequate working capital for business firms relative to their size is a requisite for proper conduct of business (Lamberson, 1985). The study was motivated by the importance of liquidity to determine if this have any bearing on the share performance of listed firms.

The concept of liquidity has contemporary significance in Kenya today. Many institutions have indicated a significant increase in non-performing loans for past few years. This essentially signifies that inability of a borrowing party to honour a financial obligation within the stipulated time period. It is also apparent that liquidity in one sector can be transmitted to another sector, for example the bad debts being experienced by financial institutions in Kenya have arisen from defaulters in other sectors such as the industrial sectors of our economy and this has affected the liquidity of these financial institutions to an extent whereby the government has had to devise rescue packages to keep some of these institutions afloat (NBK, 1999).

empirical evidence suggests that liquidity problems experienced by firms are closely influenced by economic cycles such that more firms experience liquidity problems during economic downturns than during upswings. This aspect has not been addressed by bankruptcy researchers such as Beaver (1966) in his seminal paper in this field. Ochieng (2006) studied the changes in working capital in response to changes in economic activity and concludes that the former has a great impact.

A firm usually becomes insolvent because it is unable to either generate sufficient cash internally or to obtain needed cash from external sources to sustain operating, investment and financing activities (Keige, 1991). Liquidity analysis therefore generally focuses on the relationship between the demand for and the supply of cash or near cash items. It is for this reason that financial ratios have been widely used to estimate liquidity of firms. Therefore, it is important to note that both the demand for and supply of near cash items is to a greater extent influenced by prevailing economic circumstances, for example interest rates will be high when the economy is in recession and this will tend to place a heavier burden on firms with outstanding obligations which will, holding other factors constant, lead to worsening of the liquidity positions of such firms. Thus we can see that in an economy where firms compete with each other, the economy exerts a similar impact on all firms, however since some firms are healthier (financially) than others, they are able to withstand the rigors of economic downturns whereas less healthy firms fail (Ochieng, 2006).

A study done by Tamari (1966) have shown that liquidity ratios are strong predictors of financial distress in a study of companies based in the US and elsewhere. In Kenya, similar work was done by Keige (1991) who also established the viability of liquidity ratios in predicting financial distress as early as two years in advance. Miegs and Miegs (1999), observe that being too liquid is costly as well as having too little liquidity. The objective of liquidity management therefore is to ensure that a firm will be able to meet in full all its obligations as they fall due (Gardner and Mills, 1994).

Opler et al in 1999 examine the determinants and implications of cash holdings among publicly traded US firms in 1971-94 period. They find that firms with strong growth opportunities, higher business risks and smaller size hold more cash than other firms. Firms that have great access to capital market, such as large firms and those with credit ratings as well as high levered firms tend to hold less cash. Another contradiction with the agency theory was observed by Mikkleson and Partch (2002) that the operating performance of US firms with high cash levels was comparable to or even greater than performance of firms with normal levels of cash matched by size and industry. This finding does not support the finding that view that conservative financial policies serve the interest of managers rather than interest of shareholders. They also found that high cash holdings are accompanied by greater investment in research and development expenditures and by greater growth in assets. It is therefore evident from the above there that exist weak evidence on the role of corporate governance and agency cost in the determination of corporate cash holdings which ultimately affects the share performance (Fritz, 2006).

most of the researchers concerned with the application of ratios to, for example bankruptcy prediction are based on observing trends or movements in these ratios over time. It is believed that movements in a ratio overtime are caused by conditions internal to the firm. Analysis of the current asset ratio over long periods of time in the US, however suggests that this ratio may be affected also by macro-economic factors such as interest rates (Gibson, 1992).

Studies into the variability of financial ratios with respect to time has been undertaken by Stickney (1996) who has attributed the decline of current ratios observed by Gibson (1982) to the increase in interest rates over the period. Virtanen and Ylli-Olli (1989) have observed in published financial data that the business cycle affected the cross-sectional financial ratio distributions.

Whittington, Saporta and Singh (1997) have studied the effect of hyperinflation on accounting ratios for 37 quoted companies in Turkey. They concluded that hyperinflation tends to distort balance sheet data in such a manner that any ratios computed on the basis of such data are likely to be erroneous. Freckand and Lee (1983) have established that movements in financial ratios overtime are adjustments to predetermined targets, which they suspect are the industry averages. They suggested that this adjustment process may partly be due to active efforts of management and partly the result of passive industry-wide effects operating on the firm. Possibly the most promising line of ratio research is the investigation of corporate failure. Research in this area can be traced as far back as

Winakor and Smith (1935) who concluded that the ratio of working capital to total assets was the most accurate and steady indicator of corporate failure with its decline beginning as early as ten years before the occurrence of financial difficulties.

Efficient Market Hypothesis (EMH) explains how security prices should behave under the conditions of perfect market characterized by free availability of information, homogenous investor expectations and zero transaction costs. These conditions sufficiently ensure that prices "fully reflect" what is knowable, obviously when relevant information to the value of a security is reflected in its current price, the same is an unbiased estimate of intrinsic value. Every time new information is released, the price adjusts towards a new value (Fama, 1980).

1.1.1 Association between ratios and share performance

Share performance is determined by the positive increases in prices together with the dividend distributions during the period. The classical economic view posits that the current price of a stock closely reflects the present value of its future cash flows (Kumar and Charles, 2006). According to this view, the correlations in the returns of two assets arise from correlations in the changes in the assets' fundamental values, with demand shocks or shifts in investor sentiment playing no role because the actions of arbitrageurs readily offset such shocks. This indicates that liquidity ratios may have an impact on share prices as they are likely to affect the organization's fundamental asset values. Foster (1986) discusses evidence on the association between accounting earnings changes and security price changes in the period up to and including the earning announcement

date- He concluded that change in accounting ratios were correlated with the information cues the capital markets used in revising security prices. Ball & Brown (1968) in their seminal paper concluded that of all the information about an individual firm which **become** available during a year, liquidity ratios included, one half or more was captured in that year's share prices and hence their performance.

As fortunes of the issuing firms change with economic and industry conditions so do the prices of their stocks (Gitman and Joehnk 2001). They further stated that, not all stocks were affected in the same way or to the same extent. Some sectors of the economy may only be mildly affected by the economy while others were usually hard hit when times were rough (Gitman and Joehnk, 2001). Carrow, Heron and Larsel (2002), find that, enhanced portfolio returns with risk characteristics that do not depart materially from the benchmark and enhanced risk return performance could be consistently achieved relative to the custom benchmark portfolios.

Previous research provided evidence that much of the cross sectional variation in equity returns could be explained by firm characteristics such as Market Capitalization and Price to Earnings Ratio (P/E), Change in Operating Earnings and Book-to- Market Ratios. For example, the market capitalization anomaly is documented by Banz (1981). Fama and French (1992, 1996) examined many of these variables simultaneously and concluded that two factors specifically, Size and Book-to-Market, explained the majority of the cross sectional variation in stock returns.

Common stocks are expected to hedge inflation; therefore, in a perfect market, return on common equity should keep pace with the rate of inflation. Following the seminal work of Bodie (1976), this proposition has been extensively tested in the context of the Fisher hypothesis (Fisher 1930), which originally postulated that the market rate of interest comprises the expected real rate of interest and expected inflation. This hypothesis, when applied to stock markets, postulated a positive one-to-one relation between stock returns and inflation.

The empirical evidence on the issue of whether the Fisher hypothesis holds in stock markets is far from conclusive. For instance, event studies, which look at the effects of inflation announcements on stock returns, reported a negative relation between inflation and stock returns (Amihud 1978). Short-horizon studies that use monthly data covering what is typically 10 to 15 years also reported either a negative or an insignificant relation between stock returns and inflation (Jaffe and Mandelker 1976). In contrast, the long-horizon studies (Boudoukh, et.al., 1994) and studies that test for cointegration between stock and commodity price indexes (Ely and Robinson 1997) find a positive and significant relation between stock returns and inflation but report a commodity price elasticity of less than unity. One exception is Anari and Kolari (2001), who reported the commodity price elasticity of stock returns to be above unity. They analyzed six industrialized countries using a co integrating framework.

j 2 Statement of the problem

Liquidity always comes first, and without it a firm does not open its doors and with it a firm may not have to solve its basic problem (Hubbard, 2000). Liquidity is an important determinant of financial distress, because without liquidity a firm cannot meet its financial obligations (Mervin, 1942, Beaver, 1996). Despite the importance of liquidity no study had been undertaken in Kenya to determine what effect it had on share prices.

Salmi et. al., (1997), in his study on the association between accounting and market-based variables concluded that there exists a general association between the firm's accounting ratios and its stock return and risk, but the association was structurally unstable: the accounting variables making up the relationship vary along time. This motivated the study to determine if in Kenya Liquidity ratios would have any impact.

Previous research done on liquidity and share performance included a study by Sitienei (2005) in which he set to determine the relationship between liquidity and stock ownership patterns at the NSE, Wahiu (1999) who looked at the relationship between liquidity and macro economic variables and Simbovo (2006) who studied the effect of stock splits and large stock dividend on liquidity, evidence from the NSE. The focus of these, and other more studies was on liquidity of the market but considering the important role firm liquidity play in creating value for the shareholders of corporations, this paper proposed to study the relationship between firms liquidity (liquidity Ratios) and share performance.

According to the central bank of Kenya guidelines on liquidity, liquidity management is a **crucial** element in the management of an institution. It is therefore important for management of any firm to not only measure liquidity on an on going basis but also **examine** ways of how to fund liquidity requirements during distress.

The apparent variability of liquidity of companies with time had real implications for the business community especially its effect on Share performance and was therefore deserving for further research. The study attempted to investigate the relationship between the liquidity of quoted firms and share performance. This study addressed the following questions: Does a relationship exist between the liquidity of quoted firms and share performance? What is the magnitude or strength of the relationship, if one exists? What is the effect of sector categorization on the relationship between liquidity and share performance?

1.2 Objective of the study

The objective of the study was:-

1. To establish whether or not a relationship existed between the liquidity of quoted firms and their share performance.

4 Importance of the study

The findings of this study would be useful to the following:-

1. Financial analysts: Liquidity is a key indicator and predictor of bankruptcy and solvency. Financial analysts would therefore be in a position to appreciate the relationship between liquidity and share performance and therefore advise the firms appropriately.
2. Academia: Contemporary approaches to ratio analysis have tended to distance themselves from the more traditional approaches such as benchmarking which have been shown to be empirically unsound. Hence the study would open gates for further research.
3. Credit managers: Credit managers are key users of financial ratio data and especially liquidity ratios. The decisions they make are likely to be based on the level of a liquidity ratio variable at a given point in time.
4. Investors are concerned about liquidity risk. It affects their ability to trade the quantity of shares they want to buy or sell within their desired time-framework (Vassalou et. al., 2005). Investors will be in a position to make better investment decisions aided by the findings of this research.
5. Policy makers: Government authorities who are in a position to influence some of the variables tackled in this study through either monetary or fiscal policy. These parties would gain a deeper appreciation of the impact of their decisions on the shared performance.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Liquidity management is concerned with making sure the firm has exactly the right amount of money and lines of credit available to the business at all times (<http://www.bized.ac.uk/>). Cash is the lifeline of a company. If this lifeline deteriorates, so does the company's ability to fund operations, reinvest and meet capital requirements and payments (McClure, 2003). Understanding a company's cash flow health is essential to making investment decisions hence the importance of liquidity ratio on share performance. A good way to judge a company's cash flow prospects is to look at its working capital management (<http://www.investopedia.com/articles>).

Ratio analysis is the manipulation of financial data to obtain an insight into the financial structure, profitability and ultimately the inherent strength and viability of a firm. The origins of financial ratio analysis (FRA) can be traced back to the last stages of America's drive to industrial maturity (Horrigan, 1968). Sometime in the last few years of the 1890's there arose a practice of comparing a company's current assets to its current liabilities.

Researche by Foulke (1961) suggested that 1891 was the earliest possible year that the current ratio could have emerged. The traditionally stated purpose of using financial data

in the ratio form is making results comparable across firms and overtime by controlling for size (Salmi, Virtanen and Yili-oli, 1997). Ratios have also been found to be useful predictors of corporate failure (Deakin, 1968).

A study by Gitman, et.al, (1979) reported corporate cash management practices of both large and small US corporations; it provided useful information that helped to bridge the gap between the theory and the practice of cash management in the United States. Other studies followed (Gitman and Goodwin, 1979, or Smith and Sell, 1980), which primarily investigated various aspects of domestic corporate cash management. Gitman and Maxwell (1985), in a survey of chief financial officers of major US firms, found, among other things, that financial planning and budgeting and liquidity management are the activities on which domestic financial managers spend most of their time; this study confirmed anecdotal evidence relating to the high relative importance of short-term financial management.

Competing definitions of liquidity include the variation in trading costs such as bid-ask spreads (among others, Admati and Pfleiderer (1988), Foster and Viswanathan (1990), Bhushan (1991), Amihud and Mendelson (1991)) and the risk that a (solvent) borrower is unable to obtain funding as in Diamond (1991). Finally, we note that intuitively appealing descriptions of the liquidity concept are discussed in Black (1971) and given more formal shape by Kyle (1985). In particular, Kyle suggested a tripartite definition of liquidity consisting of the cost of turning an asset around in a short time (tightness), the size of order flow needed to change prices a given amount (depth) and the recovery speed

of prices after an uninformative shock (resiliency). While attractive, these transaction-based quantities are measures of liquidity-they do not explain the underlying cause of differences in liquidity. As such, they are of limited use in modeling liquidity risk.

In conclusion, Liquidity refers to the ability of a firm to meet its short term and long-term financial obligations as they fall due. It is therefore not surprising that liquidity is an important concept in the world of business. Research has established that liquidity is an important determinant of financial distress (Mervin, 1942; Beaver, 1966). Consequently, it is used by a variety of persons to evaluate the riskness of firms as well as their performance.

2.2 Measures of liquidity

According to Bernstein and wild (2000), financial analysts normally measure liquidity for the sake of making investment decisions and thus their importance in share performance.

2.2.1 The Central Bank of Kenya (CBK) measures of liquidity

The CBK uses one measures of liquidity the liquidity ratio (CBK Liquidity Regulation Supplement, 2002), which is given by the percentage of net liquid assets as a proportion of net deposit liabilities. Net assets comprise of notes and coins (local and foreign), balances with Central Bank of Kenya, balances with domestic Commercial Banks, balances with banks abroad, balances with financial institutions, balances with mortgage finance companies balances with building societies, treasury bills, treasury bonds, certificates of deposits/government bearer bonds, and foreign currency bearer certificates.

jsjet deposit liabilities comprise of; deposits from parastatals, deposit from other sources, **balances** due to banks, balances due to financial institutions, balance due to cortgage companies, balances due to building societies.

2.2.2 Accounting measures of liquidity

- i. Working capital, this is given by current assets less current liabilities.
- ii. Current ratio, which is given as current assets as a proportion of current liabilities.

However it should be noted that changes in the figures of current ratio do not necessarily imply changes in liquidity or operating performance as inflation may increase the balances of the current assets and current liabilities. The ratio may be doubtful due to window dressing of assets.

- iii. Cash ratio, which is given as the total sum of cash, cash equivalents, and marketable securities to current assets. Cash to current liabilities, which is the proportion of the total sum of cash, cash equivalent and marketable securities to current liabilities and the ratio, reflects the cash available to pay for the liabilities (current obligations).
- iv. Acid test (quick) ratio is a measure of the assets that can easily be converted to cash and is given by the total sum of cash, cash equivalents, marketable securities and account receivable as a proportion of current liabilities.

2-2.3 Cash flow measures of liquidity

Cash flow ratio, which is the proportion of operating cash flow to current liabilities. The above liquidity ratio is an indicator of a company's ability to generate cash in the short-

term- While profit may be seen as an end in itself, liquidity is a constraint both directly and indirectly. Directly, firms must settle the debts and indirectly the firm's must report on ability to continue doing so in the foreseeable future. Liquidity has a time dimension as it depends on the sale ability of assets regarded as liquid.

2.3 Significance of liquidity management on performance

Liquidity always comes first, and without it a firm does not open its doors and with it a firm may not have time to solve its basic problem (Hubbard, 2000). Liquidity is an important determinant of financial distress, because without liquidity a firm cannot meet its financial obligations (Mervin, 1942, Beaver, 1996). Murphy (2005) pointed out that Enron's bankruptcy was nearly inevitable because of the combination of the company's low cash resources and its reliance on manipulative trading profits that could not be expected to continue indefinitely. However, even if Enron had somehow been able to survive its liquidity squeeze and avoid its 2002 bankruptcy, the stock was clearly overpriced up until the final weeks before the end.

A study done by Tamari (1966) has shown that liquidity ratios are strong predictors of financial distress in a study of companies based in the US and elsewhere. In Kenya, similar work was done by Kiege (1991) who also established the viability of liquidity ratios in predicting financial distress as early as two years in advance. Miegs and Miegs (1999), observed that being too liquid is costly as well as having too little liquidity. The objective of liquidity management therefore is to ensure that a firm will be able to meet in full all its obligations as they fall due (Gardner and Mills, 1994).

The importance of cash flow is not new to the finance literature. Over twenty years ago, Largay and Stickney (1980) reported that the then-recent bankruptcy of W.T. Grant, a nationwide chain of department stores, should have been anticipated because the corporation had been running a deficit cash flow from operations for 8 of the last 10 years of its corporate life. As part of a study of the Fortune 500's financial management practices, Gilbert and Reichert (1995) found that time value of money cash flow analysis was used to select projects in 91 percent of the firms. Accounts receivable management models were used in 59 percent of these firms, while inventory management models were used in 60 percent of the companies. Recently, Farragher, Kleiman and Sahu (1999) found that 55 percent of firms in the S&P Industrial index complete some form of a cash flow assessment, but did not present insights regarding accounts across industries.

Theoretical determination of optimal trade credits limits are the subject of many articles over the years (e.g, Schwartz, 974 and Scherr. 1996), with scant attention paid to actual accounts receivable management. Across a limited sample, Weinraub and Visscher (1998) observed a tendency of firms with low levels of current ratios to also have low levels of current liabilities. Combining accounts receivable and payables into one issue is Hill. Satoris, and Ferguson's (1984) finding that payees define date of payment as the date payment is received, while payers view payment as the postmark date. Additional liquidity Management insight across firms, industries, and time is needed.

Maness and Zietlow (2002) presented two models of value creation through effective short-term financial management activities. However, these models were generic models and did not consider unique firm or industry influences. Maness and Zietlow (2002) **discussed** industry influences in a short paragraph that includes the observation that "An industry that a company is located in may have more influence on that company's fortunes than overall GDP" (Maness and Zietlow, 2002). In fact, a careful review of this 627-page textbook finds only sporadic information on actual firm levels of Liquidity management dimensions, virtually nothing on industry factors except for some boxed items with titles such as "Should a Retailer Offer an In-House Credit Card", and nothing on Liquidity management stability over time.

Liquidity management is important for several reasons, for one the current assets of a manufacturing firm account for over half of its assets (Weinraub and Visscher 1998). For a distribution company they account even more. Excessive levels of current assets can easily result in a firm realizing a sub-standard return on investment. However, the firms with too little current assets may incur shortages and difficulties in maintaining smooth operations (Gilbert and Reichert, 1995).

For small companies current liabilities are the principal sources of external funding. Such firms do not have access to long term financing apart from mortgages on buildings. Fast growing and larger firms also make use of current liability financing. For these reasons, the financial managers devote considerable time working on these matters.

the management of working capital, i.e. marketable securities, accounts receivable, accounts payable, accruals and other means of short term financing is the direct responsibility of the finance manager (Markowitz 1988). Unlike dividend and capital structure decisions, liquidity issues cannot be studied and a decision reached and the issues set aside for months to come. It's a constant management required on the part of the finance manager. More fundamental is the effect that the liquidity has on companies risk, return and share price.

Business analysts report that poor management is the main reason for business failure. Poor cash management is probably the most frequent stumbling block for entrepreneurs (<http://smallbusiness.findlaw.com/business-operations/accounting/accounting-cash-management.html>). Cash is ready money in the bank or in the business. It is not inventory, it is not accounts receivable (what you are owed), and it is not property (John Pctroff, 2000). These can potentially be converted to cash, but cannot be used to pay suppliers, rent, or employees.

2.4 Factors influencing the liquidity level of a firm

According to Argenti (1976), the factors that influence the liquidity risk may be categorized into internal factors and external factors. The internal factors are due to poor Management and they are manifested through lack of responsiveness to changes in technology, poor communication fraud, insufficient considerations for cost factors especially research and development poor knowledge of financial matters and high

coverage position. The external factors include: labour unions (high wage settlement) and government regulations.

A study conducted by Stals (1999) in South Africa concerning the factors that influence availability of money in an economy revealed that depreciation of the exchange rate encouraged further capital outflows in form of negative leads and lags. The outflows of capital reduced liquidity in the banking sector and forced banks to borrow more from the reserve bank on a day to day basis.

In his study on the monetary policy and money stability he observed that liquidity status would remain sensitive as money availability in a country reacted to rumours the foreign exchange rate, interest rate and share prices tended to react to rumours. This had an indirect impact on volatility of speculative transactions and adverse international developments. He concluded that any deliberate actions taken by the monetary authorities to relax monetary policy must be implemented with caution because any turmoil leads to additional scars that may require time to heal.

Scharter (2003), while studying the importance of credit as a determinant of impact of monetary policy shocks observed that a monetary contradiction leads to liquidity effect that increases the interest rate on loans. This higher interest rate on loans makes working capital more costly for banks dependent firm, this results to lower labour demands and lower outputs for such firms.

2.4.1 Profitability

Vahill (1999) observed that one of the two most important requirements of liquidity is profitability, while the second one is good management. It is only when a firm is profitable that it will receive in cash more than what it pays out. Profitability and liquidity **must** however be seen in the light of market growth, market share and progress through product and industry life cycles.

Dernburg (1985) observed that in managing their portfolios, the commercial banks have two main aims that may be in conflict, maintenance of stock of liquid assets in case their cash is under pressure and the wish to earn a high rate of return on their assets in order to maximize profits.

2.5 Studies on financial ratios as prediction of corporate failure

In the early 1930's studies were done on the efficiency of ratios as predictors of financial difficulties in businesses. Winakor and Smith (1935) conducted the pioneering study in this area. In their analysis of firms which had experienced difficulties in the period between 1923 and 1931 they concluded that the ratio of working capital to total assets was the most accurate and steady indicator of financial difficulty especially if it and began to show a decline as early as ten years before the occurrence of financial difficulty.

Similar studies were carried out by Fitzpatrick (1932). He concluded that most financial ratios could predict financial distress to some degree but the most predictive were net Profit to networth, networth to debt and networth to fixed assets. These studies signified

the first attempts to utilize scientific method for determining the utility of ratios. The **culminating** study in this era was conducted by Mervin in 1942 by comparing industry mean ratios which were very sensitive predictors of discontinuance sometimes being **capable** of predicting as early as four to five years in advance.

The ratios identified by Mervin were; Working capital to total assets, Net worth to debt and the current ratio. Mervin's study is regarded as most sophisticated analysis of ratio predictive power. His findings are generally regarded as being credible.

The landmark study in this area however was conducted by Beaver (1966). He studied 29 financial statement ratios for five years preceding bankruptcy for a sample of bankrupt and non-bankrupt firms. He found that six ratios had the best discriminating power, these were: Net income (plus depreciation, depletion and amortization) to total liabilities; Net income to total assets; Total debt to total assets; Working capital to total assets; Current assets to current liabilities; and Cash, marketable securities, accounts receivables to operating expenses excluding depreciation, depletion and amortization.

Research comparable to Beaver has been carried out in Kenya by Keige (1991) who was able to develop a discriminant function that was able to predict failure with up to 90% accuracy up to two years before the event. Keige (1991) identified three key categories of ratios that were crucial to bankruptcy in the Kenyan context. These are; liquidity ratios, leverage ratios and activity ratios.

Recent extensions of failure prediction have attempted to incorporate the impact of economic factors on financial distress. Gupta and Huefner (1972) used Cluster analysis to relate ratios to established economic characteristics. Argenti (1976) stated that financial ratios were reflections of financial defects in a firm and that firms with such weaknesses were vulnerable to adverse economic circumstances, as he put it: "A high gearing and an economic adventure are the classic nutcrackers of failure" (Argenti, 1976). Related research was conducted in Kenya by Asienwa (1992) who demonstrated, the relationship between investment ratios and share prices of quoted companies in Kenya.

2.6 Association between accounting ratios and share performance

Salmi, et. Al., (1997) in their study used canonical correlation analysis to investigate the nature of accounting and market-based variables. The data consists of NYSE and AMEX firms for 1973-1993. They suggest that a clear relationship between the firm's accounting and stock-market variables exist. They also established that the decomposed analysis of the association suggests that accrual-based financial ratios were crucial for security analysis. Cash-based financial ratios also showed increasing relevance over time.

Earlier studies on the association between the firm's accounting beta and its security market beta by Ball and Brown (1968), Beaver et.al. (1970), and Ismail and Kim (1989) and the correlation between a single financial ratio, or a cluster of financial ratios, and a security's return and risk by Martkainen (1991) and Kim and Lipka (1991) established that a strong correlation between these variables exists.

Share performance is determined by the positive increases in prices together with the dividend distributions during the period. The classical economic view posits that the current price of a stock closely reflects the present value of its future cash flows (Kumar and Charles, 2006). According to this view, the correlations in the returns of two assets arise from correlations in the changes in the assets' fundamental values, with demand shocks or shifts in investor sentiment playing no role because the actions of arbitrageurs readily offset such shocks. This indicates that liquidity ratios may have an impact on share prices as they are likely to affect the organization's fundamental asset values. Foster (1986) discussed evidence on the association between accounting earnings changes and security price changes in the period up to and including the earning announcement date. He concluded that change in accounting ratios were correlated with the information cues the capital markets uses in revising security prices. Ball & Brown (1968) in their seminal paper conclude that of all the information about an individual firm which becomes available during a year, liquidity ratios included, one half or more is captured in that year's share prices and hence their performance.

Salmi, et. al., (1997) concluded that there exists a general association between the firm's accounting ratios and its stock return and risk, but the association is structurally unstable: the accounting variables making up the relationship vary with time. When taken alone, both the accrual-based and the cash-based variables are significantly associated with the market-based variables. The accrual-based variable has a stronger relationship with the market based variable set than the cash-based set. The inclusion of the variance of the stock return into the market-based variable set as a measure of the total risk crucially

increases the strength of the association. **The** inclusion of the higher moments (skewness and kurtosis) has no influence on the association. This association between the accounting ratios and stock returns was what motivated the study to look at the possibility of **a relationship** between liquidity ratios and share performance given the importance of liquidity to the firm.

Capital markets access a broad set of information. By examining changes over time in market capitalization (market price per equity share x number of common shares **outstanding**), insight can be gained about changes in the consensus expectation of the **relationship** between future and current profitability and hence the share prices (Foster, 1986). Financial ratios are referred to in published annual reports (Gibson, 1982) made a study of the annual reports of 100 U.S. Companies in the Fortune 500 listing of industrial firms. Using the financial ratio categories of liquidity, debt and profitability, he reported **that** these ratios had a great impact on the value of the firms and thus the share prices.

2.7 Association between accounting and market-based risk measures

Toms, et.al., (2005) in their paper examined the proposition that the underlying cost structure of the firm explains the systematic risk of its cash flow and the consequent behaviour of the firm's stock price. They derived operating and financial measures of leverage and tested their association with market-based measures of equity risk. Their results showed that the role of operating leverage in the theoretical and empirical analysis has important implications for risk management and asset allocation within the firm and for the pricing of risk financial markets.

Whilst the intuition of this relationship may seem self-evident, it has been the subject of relatively little empirical research. Systematic risk arises because the firm is the subject of fixed claims but faces variable revenues (Huffman, 1983).

The fixed claims associated with debt finance have attracted the attention of the majority of research into the nature of leverage-based adjustments of systematic risk. For Modigliani and Miller, (1963) and Miller, (1977) the underlying asset beta or risk class of all equity firm is specified in advance. In the standard corporate finance text, the asset beta is computed from the market-based equity beta adjusting for leverage effects (Watson and Head, 1998). A likely much larger class of fixed claims however arises from the general operating costs of the business and this has attracted relatively little attention (an exception is Rosett, 2003). A possible important reason for these biases in the research agenda is the dominance of finance over accounting based perspectives in the analysis of systematic risk. Theoretical analyses use financial market data in conjunction with accounting data to develop operating leverage variables (Gahlon and Gentry, 1982, Huffman, 1983). Similarly empirical studies using operating leverage have unanimously incorporated market numbers in their measures of operating leverage (for example, Hamada, 1972, Mandelker and Rhee, 1984, Huffman, 1989, Rosett, 2003). Instead, Toms, et. al., (2005) paper used exclusively accounting data, using company accounts and national income statistics.

Toms, Salama & Nguyen (2005) then presents an empirical test examining the relative impact on market based systematic risk of operating and financial leverage variables derived using comparable profit and loss account data. An important empirical question is the relative impact of different cost categories on total systematic risk. If, by extension of Modigliani and Miller (1958), variance in total cash flow is a function of the presence of not just interest based, but *all* fixed charges, it would seem logical to expect operating leverage to account the more strongly for the firm's systematic risk. Of the small number of studies that have examined the joint and complementary effects of operating and financial leverage, few have examined the quantitative impacts of differing categories of fixed costs on a systematic basis. An exception is Lord (1996) whose empirical study focused on three sectors and ended with a call for further research in wider contexts. Moreover, in the international context, including the focus of this study, the United Kingdom, recent evidence is particularly limited.

The examination of operating leverage in the UK and international context is particularly interesting for a number of reasons. First, it provides a mechanism for linking the stock price return to the underlying short-run cost structure of the firm. The presence of certain costs, such as knowledge-based labour, research or capital intensive activities, and scale based production, which have been linked to competitive advantage (Grant, 1996, Lazonick, 1991), may also lead to the creation of fixed cost structures that promote shareholder risk.

A further rationale has emerged from recent changes in corporate behaviour, associated with the rise of the notions of the flexible firm and flexible labour markets and their impact on underlying cost behaviour (Armstrong, 2002), which may be expected to attenuate stock market risk. All previous studies predate the major impacts of these changes in the 1990s and the final reason is therefore that earlier empirical findings might be open to question. This is particularly the case in the United Kingdom, where the impact of these ideas has been at least as great if not greater than in the United States. Further work is of particular value given the major direction of institutional reforms in the UK recently with the objectives of de-regulation and the creation of more flexible markets. Consequently a related reason is that theories of competitive advantage suggest a degree of managerial discretion in asset acquisition and that operating leverage does not merely reflect industry membership (Brigham and Gapenski, 1994). A third reason is that where managers are committed to high fixed cost investment, they might exercise greater caution in the borrowing decision. Interactions between operating and financial leverage are therefore potentially important.

2.8 Canonical correlation analysis

Salmi, et.al., (1997) in their study on the association between accounting and market-based variables used canonical correlation analysis which they defined as a more general case of the usual multiple regression analysis. In multiple regression the aim is to find a linear combination of the independent (or predictor) variables such that the composite has maximum correlation with the dependent (or criterion) variable. In canonical correlation the interest centers on the linear association between one battery of variables,

the predictor variables X_1, X_2, \dots, X_p and another battery of variables, the criterion variables y_1, y_2, \dots, y_q .

The pair wise correlations within and between the X_j and the y_l variables sets can be presented as a matrix.

$$R = \begin{pmatrix} R_{yy} & R_{yx} \\ R_{xy} & R_{xx} \end{pmatrix}$$

The x and y variables can be assumed to have been routinely standardized to a zero mean and a unit standard deviation.

The objective in canonical correlation analysis is to find a linear composite of the X_j -variables, $i=1,2,\dots,p$, and a (different) linear composite of the y_j -variables, $j=1,2,\dots,q$, such that when this pair of derived variables (linear composites) is correlated, the resulting bivariate correlation is the highest attainable. The study proposed to measure the relationship between liquidity ratios (a subset of the accounting ratios) and share performance and thus in line with Salmi, et. al., (1997) Canonical correlation analysis was used in this study.

2.9 Summary

The chapter reviewed the related studies on the relationship between share performance and various accounting ratios and provided an insight on the importance of liquidity management to firms. Since Liquidity is a key indicator and predictor of bankruptcy and solvency. There is therefore the need to appreciate the relationship between liquidity and share performance, the gap with which this research project sought to address and fill.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1. Population of the study

The population of this study consisted of all the 52 companies quoted at the Nairobi Stock Exchange for the years 1997 and 1999. To improve on the validity of result the items in this population were grouped according to the sector categorizations currently in use at the Nairobi Stock Exchange (NSE).

The industry/sector classifications currently in use are the following:

- Agricultural sector
- Commercial and services
- Finance and investment and
- Industrial and allied.

3.1.1 Sample and sampling procedure

The listed companies were sampled sector-wise. The listed companies were chosen using simple and stratified sampling. The spread per sector targeted all the sectors above except of the fact that the study left out firms that were classified in the finance and investment sector because they did not have a clear debt/liquidity structure.

Simple random sampling assisted in minimizing business when dealing with the population and sample and; stratified sampling enabled the researcher to get information at different sectoral levels. In stratified sampling, the study population was segmented into cadres. This involved stratifying the business into meaningful levels and running

disproportionate samples from the strata. A sample of five firms from each category was selected.

3.2 Data collection

This study was facilitated by the use of secondary data. Financial ratio data to measure liquidity was computed from published reports of the quoted companies for the years 1997 to 1999. While to measure share performance the share prices were obtained from NSE trades. This information is available at the NSE library and can also be obtained in company libraries.

3.3 Data analysis

The data collected was analyzed using regression and correlation analysis. In the first instance to establish whether or not a relationship existed between the liquidity of quoted firms and their share performance. This objective was accomplished by use of a linear regression model. The model was tested for statistical significance at a level of significance of 95%.

Secondly to establish the magnitude and direction of the relationship between liquidity of quoted firms and their share performance. This objective was accomplished by use of correlation analysis.

Finally to establish the possible existence of relationships that may exist from sector groupings. The researcher used descriptive statistics.

The liquidity of firms was captured using the following ratios:

Liquidity measures:

The current asset ratio, computed as $\frac{CA}{CL}$

And

Quick Ratio computed as $\frac{CA-Inventory}{CL}$

These ratios were computed for each of the years under study by use of the end year figures available in the financial statements.

Share performance

To document the return patterns surrounding the liquidity changes as well as obtain residuals for hypothesis testing, the returns from the share prices and the capital gains for each of the year(i.e. t will be taken as one year) were computed as follows.

$$R_{it} = \frac{-(P_{t-i}-P_t)}{P_{t-i}} + d$$

Where:

R_t - is the stocks return in time't'

P_t - is the last traded price in time't'

P_{t-1} - is the last traded price of stock (share) in time't-1'

d-Dividend distributions during the period

The data was analyzed using Ms. Excell and SPSS. The sample mean and standard deviation was calculated to describe and establish the variance in share returns due to changes in liquidity levels. This was to identify whether share returns are correlated to the liquidity position and to what extent.

The change in liquidity ratios and share returns was averaged across all firms in the sample and a standard error computed. The abnormal change was then tested if it was statistically different from zero by estimating the t statistic for each year, by dividing the average excess change by the standard error. T-statistics was computed using standard error that account for non-dependence of the data collected. (95% confidence level of estimate will be used). The t-statistic value was considered significant if the P value is less than 0.05. Significance of differences in means of share returns of different liquidity levels was also computed.

The means for the current ration and quick ratio that had been computed for the years 1997 to 1999 were regressed against the computed average share returns rates for the respective years. This was to establish whether the two ratios had a direct relationship with the share performance.

The form of the simple linear regression equation was,

$$Y_i = P_0 + \pi_i X_j + C_j$$

Where

Y_j - Represents the means for the current and quick ratio separately (i ranges from 1997 to 1999)

P_0 - the Y intercept

X_j - Represents the independent variable (share returns, i ranging from 1997 to 1999)

π_i - Represents the slope of the population

S_j - Random error in Y observations

The means for the current and quick ratios that had been computed for the years 1997 to 1999 for the four segments of the Nairobi Stock Exchange were regressed against the share returns for the respective years. This was to determine the relationship between the liquidity and share performance for the respective segments in the Nairobi Stock Exchange.

CHAPTER FOUR

4.0 DATA ANALYSIS AND FINDINGS

4.1 Introduction

The focus of the paper was to establish whether or not a relationship exists between the liquidity of quoted firms and their share performance and the effect that exists from sector groupings. The data collected were analyzed using descriptive statistics, regression and correlation analysis.

4.2 Descriptive statistics of the leverage ratios

The tables below report descriptive statistics of central tendency for the current ratio (Cr), and quick ratio (Qr) for the years 1997 to 1999 by sector categorization for the companies categorized under the segments in the Nairobi Stock Exchange.

The segments were coded as follows:

Agricultural-1

Commercial & Services-2

Industrial & Allied-4

Table 4.2.1

Descriptive statistics: Average current ratios by industry

Variable	Industry	N	Mean	StDev	Minimum	Maximum
1999Cr	1	8	1.871	0.787	0.333	2.423
	2	10	1.0738	0.2807	0.344	1.488
	4	17	1.778	1.191	0.255	5.590
1998Cr	1	8	1.610	0.689	0.337	2.296
	2	10	1.272	0.369	0.379	1.474
	4	17	2.150	1.974	0.293	8.634
1997Cr	1	8	1.522	0.662	0.422	1.624
	2	10	1.2522	0.2772	0.358	1.538
	4	17	2.219	1.812	0.298	7.220

Table 4.2.1 above presents the average current ratios and the associated standard deviation by industry for the years 1997 to 1999. Industries 1,2 and 4 are Agricultural, Commercial and services, and Industrial and allied respectively.

The mean of current ratio was highest in 1997 with 2.219 with a standard deviation of 1.812 followed by 1998 with 2.15 with a standard deviation of 1.974. It can be noted that the mean current ratio for industry four is on average the highest. The standard error is below 0.5 for all cases indicating that the statistics can be relied on with certainty.

Table 4.2.2

Descriptive statistics: Average quick ratios by industry

Variable	Industry	N	Mean	Stddev	Minimum	Maximum
1999Qr	1	8	1.307	0.759	0.344	1.488
	2	10	0.701	0.359	0.255	5.590
	4	17	1.193	1.284	0.337	2.296
1998Qr	1	8	1.190	0.737	0.379	1.474
	2	10	0.808	0.347	0.293	8.634
	4	17	1.520	2.015	0.422	1.624
1997Qr	1	8	1.017	0.527	0.333	2.423
	2	10	0.754	0.374	0.358	1.538
	4	17	1.408	1.705	0.298	7.220

Table 4.2.2 above presents the average quick ratios and the associated standard deviation by industry for the years 1997 to 1999. Industries 1, 2 and 4 are Agricultural, Commercial and services, and Industrial and allied respectively

The mean of quick ratio was highest in 1998 with 1.520 with a standard deviation of 2.015 followed by 1997 with 1.408 with a standard deviation of 1.705. It can be noted that the quick ratio is lower than the current ratio in all cases as all firms are carrying high stocks. The mean quick ratio for industry four is on average still the highest. The standard error is below 0.5 for all cases indicating that the statistics can be relied on with certainty.

The correlation coefficient between the average current ratios and average quick ratio is 0.963 indicating a strong correlation in this two ratio as they move in the same direction. This relationship implies that the share performance of the firms in the Agricultural sector is more sensitive to changes in the liquidity than the firms listed in the other segments.

The mean for both current and quick ratio without industry categorization was lower in all cases compared to those of each category. The reduction in means from 1997 to 1999 was logical due to lower ratios in the commercial sector as they have lower current assets.

4.3 Descriptive statistics of the market returns

The Tables below indicates the summary statistics and the 95% confidence intervals for market returns for each firm sampled by rank of the current and quick ratios for the years under study. The highest mean return during the period is - 0.244 recorded by industry one with a standard deviation of 0.557.

On average all the means were negative indicating that as liquidity was going down so was the share performance of the firms listed under Nairobi Stock Exchange.

Table 4.3.2**Average market returns and the associated standard deviation**

Descriptive Statistics: AvR2000 by RankCr				
Variable	RankCr	N	Mean	StDev
AvR2000	0	22	-0.244	0.557
	1	13	-0.298	0.402
Descriptive Statistics: AvR2000 by RankCQr				
Variable	RankCQr	N	Mean	StDev
AvR2000	0	23	-0.259	0.540
	1	12	-0.273	0.432
Descriptive Statistics: AvR00-01 by RankCr				
Variable	RankCr	N	Mean	StDev
AvR00-01	0	22	-0.221	0.491
	1	13	-0.300	0.411
Descriptive Statistics: AvR00-01 by RankCQr				
Variable	RankCQr	N	Mean	StDev
AvR00-01	0	23	-0.243	0.487
	1	12	-0.265	0.417

Table 4.3.2 above presents the average market returns and the associated standard deviation ranked by current and quick ratios respectively for the years under study.

4.4 Comparison between liquidity and share returns

The study used Analysis of variance (ANOVA), which is similar to regression in that it is used to investigate and model the relationship between a response variable and one or more independent variables. However, analysis of variance differs from regression in two ways: the independent variables are qualitative (categorical), and no assumption is made about the nature of the relationship (that is, the model does not include coefficients for variables). In effect, analysis of variance extends the two-sample t-test for testing the equality of two population means to a more general null hypothesis of comparing the equality of more than two means, versus them not all being equal. Several of Minitab's ANOVA procedures, however, allow models with both qualitative and quantitative variables.

The default one-way output contains an analysis of variance table, a table of level means, individual 95% confidence intervals, and the pooled standard deviation. The F-test p-value of 0.101 indicated that there was no sufficient evidence (at $\alpha = 0.10$ or less) to claim that not all the means are equal. However, an examination of the multiple comparison results, which use family error rates of 0.10, because the methods used (Tukey, MCB) indicate a built in protection against false positive results.

The output labeled "Hsu's MCB" compares each mean with the best of the other means. Here, "best" is the default or largest of the others. The means of carpets 1, 2, and 3 were compared to the level 4 mean because the carpet 4 mean is the largest of the rest. The level 4 mean was compared to the carpet 1 mean. Carpets 1, 3, or 4 may be best, since the corresponding confidence intervals contain positive values. There is no evidence that carpet 2 is the best because the upper interval endpoint is 0, the smallest it can be.

Table 4.4.1

One-way ANOVA: AvR2000 versus ranked credit ratio

Analysis of Variance for AVR2 000					
Source	DF	SS	MS	F	P
Ranker	1	0.024	0.024	0.09	0.762
Error	33	8.448	0.256		
Total	34	8.472			

Individual 95% CIs For Mean					
Based on Pooled StDev					
Level	N	Mean	StDev		
0	22	-0.2437	0.5568	+ _____ +	
1	13	-0.2977	0.4019	(_____ * _____)	

Pooled StDev =	0.5060	-0.48	-0.32	-0.16
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The table 4.4.1 contains an analysis of variance, a table of level means indicating a -0.2437 and -0.2977, individual 95% confidence intervals, and the pooled standard deviation. The F-test p-value of 0.101 indicates that there is not quite sufficient evidence

(at $\alpha = 0.10$ or less) to claim that not all the means are equal. The p value is 0.792, which is above the 0.5 threshold indicating that there is a significant relationship between return and current ratio in the first year under study.

As per Appendix 3 this is replicated for all the other years under study and for both current and quick ratios and the results indicate a strong relationship between share returns and the liquidity of the firms however this declines in the second year. The correlation coefficients are 0.854 and 0.576 showing a decline in the second year.

4.5 Regression analysis

The table 4.5.1 summarize the relationship between share performance and liquidity for the period under study. The average return from the market declined in 1998 but recovered shortly in the following year.

Table 4.5.1

Regression analysis: Average return against average credit ratio by Year

The regression equation is

$$AVR2000 = -0.168 - 0.0555 \text{ AvrCr}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.1683	0.1483	-1.13	0.265
AvrCr	-0.05555	0.07074	-0.79	0.438

S = 0.5020 R-Sq = 1.8% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.1554	0.1554	0.62	0.438
Residual Error	33	8.3165	0.2520		
Total	34	8.4718			

Unusual Observations

Obs	AvrCr	AVR2000	Fit	SE Fit	Residual	St Resid
7	0.88	1.0056	-0.2171	0.1036	1.2226	2.49R
8	7.34	-0.4744	-0.5762	0.4068	0.1018	0.35X
25	0.96	-1.2456	-0.2216	0.1004	1.0241	-2.08R

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

The regression equation constants are negative with a slope of -0.0555 and y-intercept of -0.168 indicating that the returns and credit ratios are on average declining over the period. However the p values are 0.265 and 0.438 both lower than 0.5 thus at 95% confidence interval there is no significant difference in the means of the two variables. This is in line with Ball & Brown (1968) in their seminal paper who conclude that of all the information about an individual firm which becomes available during a year, liquidity ratios included, one half or more is captured in that year's share prices and hence their performance. Appendix 4 presents further analysis on the years 1998 and 1999 and also incorporates quick ratio and the findings do not indicate any significant deviations in the results from the above.

This indicates that liquidity ratios may have an impact on share prices, as they are likely to affect the organization's fundamental asset values. The study results are in agreement with Foster (1986) who discussed evidence on the association between accounting earnings changes and security price changes in the period up to and including the earning announcement date. The researcher therefore concluded that change in accounting ratios are correlated with the information cues the capital markets used in revising security prices and in particular the statistical analysis suggested a significant impact of firm liquidity on share performance at Nairobi Stock Exchange.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The major contribution of this study was the determination of whether liquidity has an impact on share performance at Nairobi Stock Exchange. It sought to answer the question as to whether a relationship exists between the liquidity of quoted firms and share returns. The results have important implications because liquidity of a firm has significant influence on its overall performance.

5.2 Summary of findings

The results indicate that there existed a general association between the firm's current ratio and quick ratio and its stock return, but the association was structurally unstable: the accounting variables making up the relationship varied with time. The inclusion of the variance of the stock return into the market-based variable set as a measure of the total risk crucially increased the strength of the association. The inclusion of the higher moments (skewness and kurtosis) had no influence on the association. The mean return during the period was lowest with a negative value. Liquidity was shown to be generally on the decline with time.

In support of evidence produced by Foerster and Karolyi (1996) that important inferences pertaining to the issue of capital market integration and regulation can be drawn from the reaction of stock prices to firm's liquidity, from the study liquidity significantly affected the share prices of firms that were listed on Nairobi Stock Exchange.

It was noted that from 1997 to 1999 the means of the share performance of the firms declined with a reduction in the liquidity levels of the firms. This is logical as a reduction of the liquidity makes the overall performance of the firm decline thus affecting the share performance. The means decreased from 1997 to 1999, but within this period the average liquidity was also on the decline. Since there was no much change in the economic variables, then the increase could be attributed to liquidity of the firms.

5.3 Conclusion

The findings of this study indicate that liquidity ratios may have an impact on share prices, as they are likely to affect the organization's fundamental asset values. The study results are in consisted with Foster (1986) who discussed evidence on the association between accounting earnings changes and security price changes in the period up to and including the earning announcement date. The researcher therefore concludes that change in accounting ratios are correlated with the information cues the capital markets uses in revising security prices and in particular the statistical analysis suggest a significant impact of firm liquidity on share performance at Nairobi Stock Exchange.

5.4 Policy recommendation

The focus of this study was on liquidity, which play an important role in creating value for the shareholders of corporations. Liquidity management is a crucial element in the management of an institution due to its crucial effect on share returns. It is therefore important for management of any firm to not only measure liquidity on an on going basis but also examine ways of how to fund liquidity requirements during distress.

5.5 Limitation of the study

Some quoted companies at the Nairobi Stock Exchange were not included in the sample due to unavailability of data and other companies' data were outliers, while others did not trade during the period under study. This reduction in sample size would have affected the findings of this study.

The study made an implicit assumption that information on liquidity of firms was readily and widely available to the investing public. The market was also assumed to be efficient and thus this information was immediately reflected in the share prices. It was also assumed further that there were no other significant intervening variables that could have affected the share prices that went unrecorded. However to control for such intervening variables firms that issued dividends during the period under study were left out of the sample.

5.6 Suggestions for further research

It is important that a similar study with a bigger sample, time horizon and taking into account more accounting ratios be conducted by using advanced time series models to enhance our understanding of the association between liquidity and share returns at the Nairobi Stock Exchange.

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APPENDICES

Appendix 1: list of companies quoted at N.S.E. as at 1st January 2006

MAIN INVESTMENT MARKET

AGRICULTURAL

Uniliver Tea Kenya
Kakuzi Ord.
Rea Vipingo Plantations
Sasini Tea & Coffee Ltd.

COMMERCIAL AND SERVICES

Car & General (K) Ltd
CMC Holdings ltd
Hutchings Blerner
Kenya airways ltd
Marshalls
Nation media
Scangroup ltd
TPS Eastern Africa
Uchumi supermarket

FINANCE AND INVESTMENT

Barclays bank ltd
C.F.C bank Ltd
Diamond Trust Bank Kenya
Equity Bank Ltd
Housing Finance Co.
I.C.D.C Investment Co. Ltd
Jubilee Holdings Ltd
Kenya Commercial Bank
National Bank of Kenya Ltd
NIC Bank Ltd
Jubilee holdings ltd
Kenya commercial Bank Ltd
National Bank of Kenya Ltd
NIC Bank Ltd
Pan Africa Insurance Holding
Standard Chartered Bank

INDUSTRIAL AND ALLIED

Athi River Mining
B.O.C Kenya Ltd
Bamburi Current Ltd
Bat Kenya ltd
Carbacid Berger Ltd

Crown Berger
 E.A. Cables Ltd
 E.A. Portland cement
 East African Breweries
 Kenya Oil Co. Ltd
 Kenya Power & Lightning Ltd
 KenGen Ltd.
 Mumias Sugar Company
 Olympia Capital Holdings Ltd
 Sameer Africa Ltd
 Total Kenya Africa Ltd
 Total Kenya Ltd
 Unga Group Ltd

ALTERNATIVE INVESTMENT MARKET SEGMENT

City Trust Ltd
 Eaagds Ltd
 Express ltd
 Williamson Tea Kenya
 Kapchorua Tea Co.
 Kenya orchards ltd
 Limuru tea co. Ltd
 Standard group ltd

Appendix 2: Comparison of Average Current and Quick Ratios

Descriptive Statistics: AvrCr, AvrQr by Industry

Variable	Industry	N	Mean	Median	TrMean	StDev
AvrCr	1	8	1.668	1.540	1.668	0.661
	2	10	1.1994	1.1499	1.1810	0.2870
	4	17	2.049	1.497	1.778	1.620
AvrQr	1	8	1.171	1.227	1.171	0.646
	2	10	0.755	0.712	0.730	0.339
	4	17	1.374	0.725	1.061	1.655
Variable	Industry	SE Mean	Minimum	Maximum	Q1	Q3
AvrCr	1	0.234	0.955	2.436	1.066	2.365
	2	0.0908	0.8694	1.6764	0.9345	1.4927
	4	0.393	0.823	7.343	1.003	2.654
AvrQr	1	0.229	0.377	1.874	0.542	1.819
	2	0.107	0.370	1.339	0.460	0.972
	4	0.401	0.286	7.148	0.453	1.774

Descriptive Statistics: 1999Cr, 1998Cr, 1997Cr

Variable	N	Mean	Median	TrMean	StDev	SE Mean
1999Cr	35	1.598	1.293	1.481	0.965	0.163
1998Cr	35	1.776	1.325	1.533	1.455	0.246
1997Cr	35	1.783	1.293	1.558	1.360	0.230
Variable	Minimum	Maximum	Q1	Q3		
1999Cr	0.739	5.705	0.931	1.984		
1998Cr	0.734	8.877	0.972	1.956		
1997Cr	0.756	7.447	1.015	1.796		

Descriptive Statistics: 1999Qr, 1998Qr, 1997Qr

Variable	N	Mean	Median	TrMean	StDev	SE Mean
1999Qr	35	1.078	0.743	0.941	0.995	0.168
1998Qr	35	1.241	0.733	1.004	1.466	0.248
1997Qr	35	1.132	0.755	0.937	1.243	0.210
Variable	Minimum	Maximum	Q1	Q3		
1999Qr	0.255	5.590	0.396	1.607		
1998Qr	0.293	8.634	0.512	1.625		
1997Qr	0.298	7.220	0.441	1.475		

Descriptive Statistics: 1999Qr, 1998Qr, 1997Qr by RankCQr

Variable	RankCQr	N	Mean	Median	TrMean	StDev
1999Qr	0	23	0.5879	0.6739	0.5851	0.2224
	1	12	2.018	1.763	1.794	1.221
1998Qr	0	23	0.5960	0.6080	0.5928	0.2095
	1	12	2.478	1.776	1.980	2.004
1997Qr	0	23	0.5746	0.5941	0.5692	0.2143
	1	12	2.200	1.621	1.809	1.670
Variable	RankCQr	SE Mean	Minimum	Maximum	Q1	Q3
1999Qr	0	0.0464	0.2555	0.9795	0.3747	0.7445
	1	0.353	0.688	5.590	1.518	2.094
1998Qr	0	0.0437	0.2932	0.9655	0.3790	0.7333
	1	0.578	1.300	8.634	1.511	2.317
1997Qr	0	0.0447	0.2980	0.9665	0.4044	0.7549
	1	0.482	1.087	7.220	1.310	2.541

Descriptive Statistics: 1999Cr, 1998Cr, 1997Cr by RankCr

Variable	RankCr	N	Mean	Median	TrMean	StDev
1999Cr	0	22	1.0831	1.0160	1.0746	0.2805
	1	13	2.470	2.462	2.286	1.090
1998Cr	0	22	1.1161	1.0649	1.1086	0.2566
	1	13	2.892	2.216	2.463	1.933
1997Cr	0	22	1.1348	1.1369	1.1317	0.2020
	1	13	2.881	2.396	2.598	1.758

Variable	Ranker	SE Mean	Minimum	Maximum	Q1	Q3
1999Cr	0	0.0598	0.7395	1.5975	0.8581	1.3160
	1	0.302	1.256	5.705	1.899	2.610
1998Cr	0	0.0547	0.7342	1.6489	0.9081	1.3147
	1	0.536	1.633	8.877	1.908	2.890
1997Cr	0	0.0431	0.7557	1.5750	0.9690	1.2840
	1	0.488	1.425	7.447	1.713	3.846

Appendix 3: ANOVA Between Returns and Liquidity Ratios

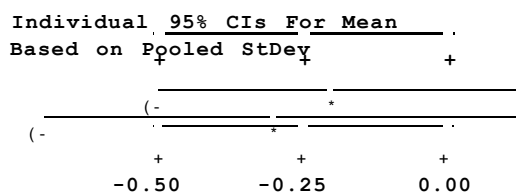
One-way ANOVA: AvR2001 versus RankCr

Analysis of Variance for AvR2001

Source	DF	SS	MS	F	P
RankCr	1	0.089	0.089	0.15	0.700
Error	33	19.380	0.587		
Total	34	19.468			

Level	N	Mean	StDev
0	22	-0.1986	0.7894
1	13	-0.3027	0.7242

Pooled StDev = 0.7663



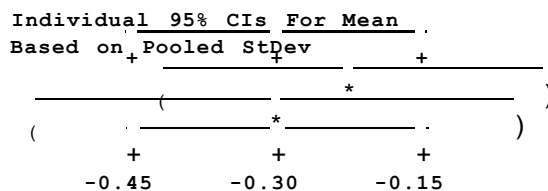
One-way ANOVA: AvR00-01 versus RankCr

Analysis of Variance for AvR00-01

Source	DF	SS	MS	F	P
RankCr	1	0.051	0.051	0.24	0.630
Error	33	7.088	0.215		
Total	34	7.139			

Level	N	Mean	StDev
0	22	-0.2213	0.4911
1	13	-0.3002	0.4106

Pooled StDev = 0.4635

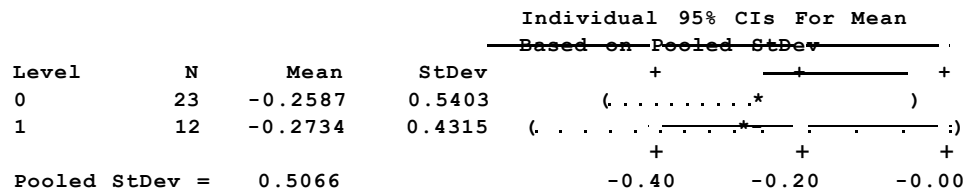


One-way ANOVA: AvR2000 versus RankCQr

Analysis of Variance for AvR2000

Source	DF	SS	MS	F	P
RankCQr	1	0.002	0.00*2	0.01	0.936

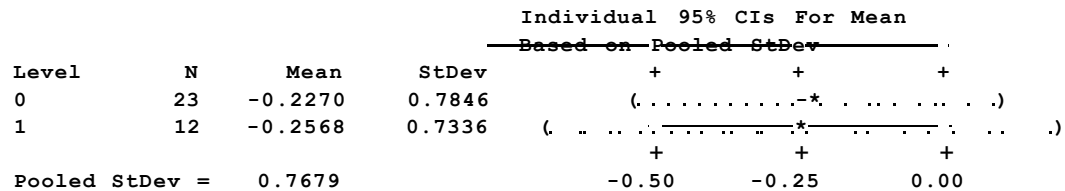
Error	33	8.470	0.257
Total	34	8.472	



One-way ANOVA: AvR2001 versus RankCQr

Analysis of Variance for AvR2001

Source	DF	SS	MS	F	P
RankCQr	1	0.007	0.007	0.01	0.914
Error	33	19.461	0.590		
Total	34	19.468			



Correlations: AvR2000, AvR2001, AvR00-01

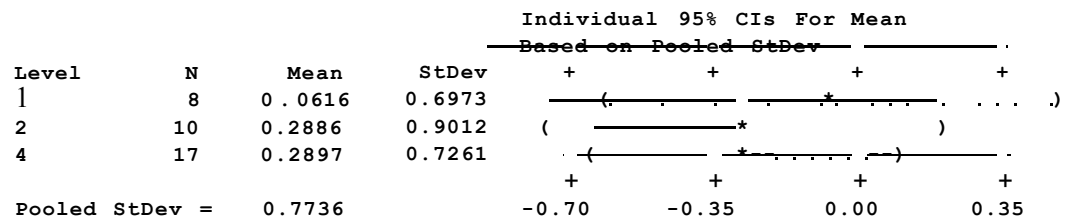
	AVR2000	AVR2001
AVR2001	0.032	0.854
AvR00-01	0.576	0.835
	0.000	0.000

Cell Contents: Pearson correlation
P-Value

One-way ANOVA: AvR2001 versus Industry

Analysis of Variance for AvR2001

Source	DF	SS	MS	F	P
Industry	2	0.320	0.160	0.27	0.767
Error	32	19.149	0.598		
Total	34	19.468			

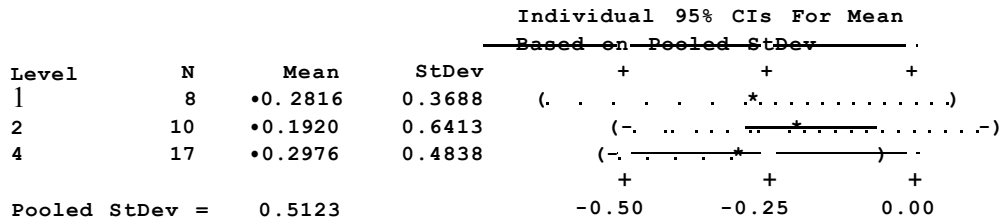


One-way ANOVA: AvR2000 versus Industry

Analysis of Variance for AvR2000

Source	DF	SS	MS	F	P
Industry	2	0.073	0.037	0.14	0.870
Error	32	8.398	0.262		

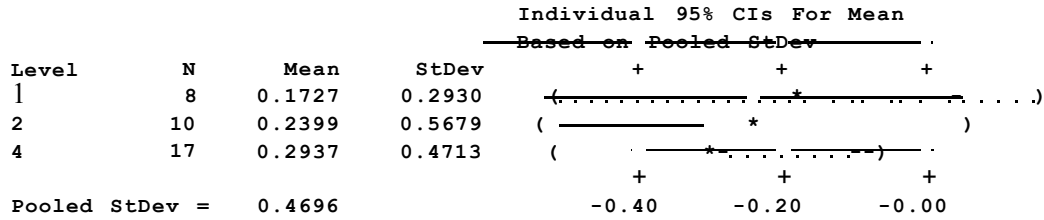
Total 34 8.472



One-way ANOVA: AvR00-01 versus Industry

Analysis of Variance for AvR00-01

Source	DF	SS	MS	F	P
Industry	2	0.081	0.041	0.18	0.833
Error	32	7.058	0.221		
Total	34	7.139			



Appendix 4: Regression Analysis Between Returns and Liquidity Ratios

Regression Analysis: AvR2000 versus AvrQr

The regression equation is

$$AVR2000 = -0.215 - 0.0425 \text{ AvrQr}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.2148	0.1181	-1.82	0.078
AvrQr	-0.04254	0.07114	-0.60	0.554

S = 0.5040 R-Sq = 1.1% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0908	0.0908	0.36	0.554
Residual Error	33	8.3810	0.2540		
Total	34	8.4718			

Unusual Observations

Obs	AvrQr	AVR2000	Fit	SE Fit	Residual	St Resid
7	0.37	1.0056	-0.2306	0.1017	1.2362	2.50R
8	7.15	-0.4744	-0.5189	0.4351	0.0445	0.18 X
25	0.72	-1.2456	-0.2454	0.0905	-1.0002	-2.02R

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

Regression Analysis: AvR2000 versus AvrCr, AvrQr

The regression equation is

$$\text{AvR2000} = -0.092 - 0.201 \text{ AvrCr} + 0.151 \text{ AvrQr}$$

Predictor	Coef	SE Coef	T	P
Constant	0.0923	0.2004	•0.46	0.648
AvrCr	0.2010	0.2647	•0.76	0.453
AvrQr	0.1514	0.2652	0.57	0.572

S = 0.5072 R-Sq = 2.8% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	0.2392	0.1196	0.46	0.632
Residual Error	32	8.2326	0.2573		
Total	34	8.4718			

Source	DF	Seq SS
AvrCr	1	0.1554
AvrQr	1	0.0838

Unusual Observations

Obs	AvrCr	AvR2000	Fit	SE Fit	Residual	St Resid
7	0.88	1.0056	-0.2128	0.1050	1.2184	2.46R
8	7.34	-0.4744	-0.4865	0.4400	0.0121	0.05 X
13	3.91	-0.8810	-0.4919	0.2583	-0.3891	-0.89 X
25	0.96	-1.2456	-0.1763	0.1288	-1.0693	-2.18R

R denotes an observation with a large standardized residual
 X denotes an observation whose X value gives it large influence,

Regression Analysis: AvR2001 versus AvrCr, AvrQr

The regression equation is

$$\text{AvR2001} = -0.139 - 0.171 \text{ AvrCr} + 0.171 \text{ AvrQr}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.1390	0.3073	-0.45	0.654
AvrCr	-0.1715	0.4059	-0.42	0.676
AvrQr	0.1709	0.4066	0.42	0.677

S = 0.7778 R-Sq = 0.6% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	0.1095	0.0547	0.09	0.914
Residual Error	32	19.3590	0.6050		
Total	34	19.4685			

Source	DF	Seq SS
AvrCr	1	0.0027
AvrQr	1	0.1068

Unusual Observations

Obs	AvrCr	AvR2001	Fit	SE Fit	Residual	St Resid
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8	7.34	-0.155	•0.177	0.675	0.021
13	3.91	0.475	•0.374	0.396	0.848
17	0.87	-1.771	•0.140	0.270	-1.631
31	1.02	1.657	•0.171	0.210	1.828

R denotes an observation with a large standardized residual
X denotes an observation whose X value gives it large influence

Regression Analysis: Avr2001 versus AvrCr

The regression equation is
 $AVR2001 = -0.225 - 0.007 \text{ AvrCr}$

Predictor	Coef	SE Coef	T	P
Constant	0.2248	0.2269	-0.99	0.329
AvrCr	0.0073	0.1082	-0.07	0.947

S = 0.7680 R-Sq = 0.0% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0027	0.0027	0.00	0.947
Residual Error	33	19.4658	0.5899		
Total	34	19.4685			

Unusual Observations

Obs	AvrCr	AVR2001	Fit	SE Fit	Residual
8	7.34	-0.155	0.278	0.622	0.123
17	0.87	-1.771	0.231	0.159	-1.540
31	1.02	1.657	0.232	0.150	1.889

R denotes an observation with a large standardized residual
X denotes an observation whose X value gives it large influence

Regression Analysis: AvrQr versus AvrCr

The regression equation is
 $AvrQr = -0.502 + 0.961 \text{ AvrCr}$

Predictor	Coef	SE Coef	T	P
Constant	-0.50193	0.09837	-5.10	0.000
AvrCr	0.96115	0.04693	20.48	0.000

S = 0.3330 R-Sq = 92.7% R-Sq(adj) = 92.5%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	46.521	46.521	419.53	0.000
Residual Error	33	3.659	0.111		
Total	34	50.180			

Unusual Observations

Obs	AvrCr	AvrQr	Fit	SE Fit	Residual
8	7.34	7.1483	6.5559	0.2698	0.5923
13	3.91	2.5471	3.2519	0.1170	-0.7048
18	1.91	0.6173	1.3304	0.0570	-0.7131

Regression Analysis: AvR00-01 versus AvrQr

The regression equation is

$$\text{AvR00-01} = -0.229 - 0.0188 \text{ AvrQr}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.2290	0.1089	2.10	0.043
AvrQr	-0.01877	0.06558	0.29	0.776

S = 0.4645 R-Sq = 0.2% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0177	0.0177	0.08	0.776
Residual Error	33	7.1216	0.2158		
Total	34	7.1392			

Unusual Observations

Obs	AvrQr	AvR00-01	Fit	SE Fit	Residual	St Resid
8	7.15	-0.3164	-0.3632	0.4011	0.0468	0.20 X
25	0.72	-1.2610	-0.2425	0.0835	-1.0184	-2.23R

R denotes an observation with a large standardized residual
 X denotes an observation whose X value gives it large influence.

Regression Analysis: AvR00-01 versus AvrCr, AvrQr

The regression equation is

$$\text{AvR00-01} = -0.115 - 0.186 \text{ AvrCr} + 0.161 \text{ AvrQr}$$

Predictor	Coef	SE Coef	T	P
Constant	•0.1154	0.1847	0.62	0.536
AvrCr	•0.1864	0.2440	0.76	0.450
AvrQr	0.1610	0.2444	0.66	0.515

S = 0.4675 R-Sq = 2. R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	0.1453	0.0726	0.33	0.720
Residual Error	32	6.9940	0.2186		
Total	34	7.1392			

Source	DF	Seq SS
AvrCr	1	0.0504
AvrQr	1	0.0949