What Are the Implications of Working Capital Management on Liquidity Risk? A Case of Listed Commercial Banks in Kenya

James Gitau Kimani[1], Benson Onguso Nyangáu[2*], Robert Mugo Karungu[1] and Kibet Kirui[1]

1.   Department of Accounting and Finance, Kabarak University
2.   Department of Business Management and Economics, Laikipia University
        [*]Email of the corresponding author: nbenyanga@yahoo.com

Abstract

Liquidity refers to a firm's ability to fund increase in assets and meet obligations as they fall due. Working capital includes all the current assets and current liabilities. The study concentrated on Banks that were listed at the Nairobi Securities Exchange. The study used a longitudinal research design for it involved taking repetitive measures overtime for the purpose of comparing returns over the periods. The target population was made up of all the 9 NSE quoted commercial banks in Kenya; this was over a period of 10 years from 2002 to 2011. The data was collected from secondary sources; these were published financial statements available at banking survey of Kenya. The descriptive statistics such as mean and standard deviation were used to measure variations. Statistical inferences were drawn using correlation and regression analysis in analyzing the data and testing of hypotheses. The key findings from the study were: debtors' collection period and cash conversion cycle have significantly negative relationship with liquidity of quoted commercial banks; this means that more liquid banks take the shortest time to collect cash from their customers. Creditors' payment period have significantly positive relationship with liquidity of quoted commercial banks in Kenya, this implies that the longer the bank takes to pay its creditors, the more liquid it is. The research recommends that the NSE commercial banks should maintain their current assets for meeting their short term obligation thereby increase their liquidity by shortening their debtors' collection period and cash conversion cycle whereas increasing their creditors' payment period for better liquidity position. Findings of this study add to knowledge and understanding of the subject of working capital management and its implication on liquidity risk on NSE quoted commercial banks.

Keywords: Working capital management, liquidity, Liquidity risk, quoted commercial banks

1.0 INTRODUCTION

Working capital management is vital fraction in firm financial management decision. Inefficient or efficient management of working capital has profitability and liquidity implications. To reach optimal working capital management firm manager should control the tradeoff between profitability and liquidity accurately. An optimal working capital management is expected to contribute positively to the creation of firm value. Liquidity plays a significant role in the successful functioning of a business firm. A firm should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions (Eljelly, 2004). Dilemma in liquidity management is to achieve desired tradeoff between liquidity and profitability (Raheman and Nasir, 2007). Referring to theory of risk and return, investment with more risk will result to more return thus, firms with high liquidity of working capital may have low risk than low profitability conversely, firms that has low liquidity of working capital facing high risk results to high profitability (Lee and Kang, 2008).

Sharma and Iselin, (2006) defines liquidity as any form of money that can be used to buy goods and services or to invest in an asset. Liquidity in banking sector frequently consists of power money created by central banks, broad money created through traditional bank lending system, securitized debts created by capital markets, and derivatives. The central bank uses power money to formulate policies to expand or contract money supply in the economy after detailed analysis and estimation of the demand for money in the economy. It uses various instruments like Reserve Requirement where commercial banks are required by law to deposit 6% of their deposits with the CBK. This is used to influence the amount of loans banks can advance the public and thus affects the supply of money.

An increase in this proportion reduces the amount of money available for commercial banks to lend while a reduction has the opposite effect. The second instrument is the use of Open Market Operations (OMO) where Central Bank buys and sells Government securities in the money market in order to achieve a desired level of money in circulation. When the Central Bank sells securities, it reduces the supply of money and when it buys securities it increases the supply of money in the market. Thirdly it uses lending where the Central Bank from time to time lends to commercial banks overnight when they fall short of funds thus affecting the amount of money in circulation and the amount deposited by banks at the CBK. Fourthly it uses moral suasion where the Central Bank persuades commercial banks to make decisions or follow certain paths to achieve a desired result like changes in the level of credit to specific sectors of the economy. Broad money includes money held in deposit balances in banks and other forms created in the financial system (FPRI, 2011).

Basic economics also teaches that the money supply shrinks when loans are repaid however, the money supply

will not necessarily decrease depending on the creation of new loans and other effects. Finance securitizes the increase in money that its loan business promises, it documents that promise as a binding pledge in the form of a security and trades with it. The buyer of such a paper acquires it in order to learn something from it. Ownership of it entitles him to receive the yields the seller commits to pay. What the seller sells is the legally binding promise to put the sum of money the buyer has used to purchase the security to work as capital for the buyer. The seller uses the proceeds to cover his need for capital. So a security is a debt obligation that has become a commodity by virtue of having been turned into tradable money-capital that serves its purchaser as an investment (Diamond and Rajan, 2002)

Bank Deposits generally have a much shorter contractual maturity than loans and liquidity management needs to provide a cushion to cover anticipated deposit withdrawals. Liquidity is the ability to efficiently accommodate deposit as also reduction in liabilities and to fund the loan growth and possible funding of the off-balance sheet claims. The cash flows are placed in different time buckets based on future likely behavior of assets, liabilities and off-balance sheet items. Liquidity risk consists of Funding Risk, Time Risk and Call Risk (Raghavan, 2003). In the banking sector in Kenya, a primary liquidity risk is deposit run-offs in a firm-specific event. The assumptions that banks utilize are based on a combination of firm-specific historical data, industry data from prior stress events and best guess estimates. When using firm-specific historical data, some banks add an extra cushion to the assumed outflows to factor in their perception that data largely based on stable historical periods may not adequately proxy depositor behavior during a future stress event. The severity of deposit outflows in a bank's stress scenario depends upon factors including the strength of the bank's relationships with its customers, the proportion of deposits that is protected by deposit insurance, the composition of its balance sheet, and the duration of the crisis (FPRI, 2011).

Banks generally assume that time deposits will not be withdrawn until maturity and at maturity, some percentage will be renewed. Banks also commonly assume that they will roll over loans as they mature in order to protect their franchise. They assume that the repo and securitization markets remain open, that certain assets remain liquid, and that the currencies of the developed countries remain convertible. Nonetheless, most banks recognize that assets may entail haircuts depending on the scenario; and some assume that even secured funding would not be available, except from the central bank. Many also recognize that intra-group cash flows might be disrupted. In addition, banks also conduct stress tests for sudden, unexpected demands for liquidity that may arise from products or services that require them to provide funding based on a triggering event. For instance, a credit downgrade of the firm may prompt the firm's counterparties to request additional collateral for derivatives transactions. Other common triggers include the need to fund liquidity backup arrangements and credit enhancements for securitizations (Basel Committee on Banking Supervision, 2006).

1.2 Statement of the Problem

Liquidity risk has afflicted numerous local banks, many of which have been closed down by the regulatory authorities or have been restructured under their supervision. In Kenya 5 local banks and 10 Non Bank Financial Institutions (NBFIs) were taken over in 1993/94, and 2 more local banks in 1996.In 1993/94 around 11 per cent of the total assets of banks and NBFIs was held by the failed local banks, a statement in the Kenyan parliament in October 1995 revealed that the Central Bank of Kenya (CBK) lost a total of KSh 10.2 billion from liquidity crisis. Some of the local bank that failed in Kenya are the Reliance Bank, Prudential Bank, Bullion Bank, Trade Bank, Delphis Bank, Continental Bank and Pan African Bank. (Economist Intelligence Unit, 1995). In 2003 Euro Bank's collapsed with billions of shillings of Parastatals money and caused a creeping liquidity crisis against the regulatory Central Bank of Kenya (CBK). The government was induced to take further action by passing the Anti-Money-Laundering (AML) Bill and licensing the Credit Reference Bureaus (CRB) in 2009 following further collapse of five more banks between 2003 to 2006 (Sundararajan and Balino, 2011). Extensive research has been conducted worldwide exploring the various aspects of WCM, however few attempt have been made to explore the effect of WCM on the liquidity risk of a bank. It was therefore necessary to examine the question of liquidity risk in banking sector and how it is influenced by WCM for emerging economies such as Kenya.

1.3 Objectives of the Study

i.   To establish the effect of debtors average collection period on liquidity risk in quoted commercial banks in Kenya.
ii. To assess the effect of creditors average payment period on liquidity risk in quoted commercial banks in Kenya.
iii. To establish the effect of cash conversion cycle on liquidity risk in quoted commercial banks in Kenya.

1.4 Hypotheses

$H0_1$: Debtors average collection period does not affect liquidity in quoted commercial banks in Kenya.
$H0_2$: Creditors average payment period does not affect liquidity in quoted commercial banks in Kenya.
$H0_3$: Cash conversion cycle does not affect liquidity in quoted commercial banks in Kenya.

2.0 LITERATURE REVIEW
2.1.1 Working Capital Management

Working capital management involves managing the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. A company can be endowed with assets and profitability but short of liquidity if its assets cannot readily be converted into cash. Positive working capital is required to ensure that a firm is able to continue its operations and that it has sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses (Afza and Nazir, 2009). The management of working capital involves managing inventories, accounts receivable and payable, and cash. Cash management identifies the cash balance which allows for the business to meet day to day expenses, but reduces cash holding costs. Inventory management identifies the level of inventory which allows for uninterrupted production but reduces the investment in raw materials and minimizes reordering costs - and hence increases cash flow. Debtors management identify the appropriate credit policy, i.e. credit terms which will attract customers, such that any impact on cash flows and the cash conversion cycle will be offset by increased revenue and hence Return on Capital. Short term financing identify the appropriate source of financing, given the cash conversion cycle, the inventory is ideally financed by credit granted by the supplier however, it may be necessary to utilize a bank loan or overdraft or to convert debtors to cash through factoring (Falope and Ajilore, 2009).

Working capital, on the one hand, can be seen as a metric for evaluating a company's operating liquidity. A positive working capital position indicates that a company can meet its short-term obligations. On the other hand, a company's working capital position signals its operating efficiency. Comparably high working capital levels may indicate that too much money is tied up in the business. The most important positions for effective working capital management are inventory, accounts receivable, and accounts payable. Depending on the industry and business, prepayments received from customers and prepayments paid to suppliers may also play an important role in the company's cash flow. Excess cash and non operational items may be excluded from the calculation for better comparison WCM processes involve crucial decisions on multiple aspects, including the investment of available cash, maintaining a certain level of inventories, managing account receivables, and account payables. However, WCM is not limited to these tasks, but is implicated in multiple levels of interactions both internally and between external parties (suppliers, customers, distributors, bankers and retailers). For example credit officers are required to investigate credit history of their clients in order to understand their financial worthiness (Amir and Sana, 2006).

2.1.2 Efficient Working Capital Management

Working capital management in any business is determined by: Nature of Business or Industry, Size of Business or Scale of Operations, Growth prospects, Business Cycle, Manufacturing Cycle, Operating Cycle and Rapidity of Turnover, Operating Efficiency, Profit Margin, Profit Appropriation and Depreciation Policy, Taxation Policy, Dividend Policy and Government Regulations. The maintenance of excessive levels of current assets can easily result in a substandard return on a firm's investment. However, firms with inadequate levels of current assets may incur shortages and have difficulties in smoothly maintaining day-to-day operations (Horne and Wachowicz, 2000). Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on one hand and avoids excessive investment in these assets on the other hand (Eljelly, 2004).

The decision-making process on the level of different working capital components has become frequent, repetitive, and time-consuming. Corporations are looking for new ways to stimulate growth, improve financial performance, and reduce risk in today's challenging economic climate. Funds tied up in working capital can be seen as hidden reserves that can be used to fund growth strategies, such as capital expansion. Cash flows locked in stock and receivables can be freed up by understanding the determinants of working capital. Many organizations that have earned profits over the years have shown the efficient management of working capital (WCM). The successful management of working capital is essential for short-run corporate solvency or the survival of any organization. Especially, efficient WCM will lead a firm to react quickly and appropriately to unanticipated changes in market variables, such as interest rates and raw material prices, and gain competitive advantages over its rivals. Too often, however, this is an area that many organizations have ignored. The way of managing working capital efficiently varies from firm to firm since it depends on industry, the nature of the business, business policy, strategy, etc. Thus, it is very important for an organization to understand the way to manage working capital efficiently (Afza and Nazir, 2009).

Su (2002) found that growth of the firm, size, and leverage affects the working capital of a company. Broadly, industry characteristics, firm specific characteristics and the financial environment are recognized as determining factors of working capital. However, still, there are firms that are struggling to manage working capital since they don't have a sufficient understanding of the determining factors of working capital. In addition to the growth, leverage, and the size of a company, type and size of expenditures, such as finance and operating and

capital expenditures have different impacts on working capital. Maness and Zietlow (2004) presented two models of value creation that incorporate effective short-term financial management activities. Deloof (2003) discussed that most firms had a large amount of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a significant impact on profitability of those firms. Using correlation and regression tests he found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of firms. On basis of these results he suggested that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills. Due to lack of a proper plan for Working Capital (WC) requirements most firms often experience excess WC or shortage of WC. Firms are able to reduce financing costs or increase the funds available for expansion by minimizing the amount of funds tied up in CAS. There is a significant difference among industries in WC measures across time (Krueger, 2002). The way in which WC is managed will have a significant impact on the profitability of companies (Deloof, 2003).

2.1.3 Liquidity Risk in Banks

Liquidity risk is the risk that a given security or asset cannot be traded quickly enough in the market to prevent a loss or make the required profit. Liquidity risk arises from situations in which a party interested in trading an asset cannot do it because nobody in the market wants to trade that asset. An investment may sometimes need to be sold quickly. Unfortunately, an insufficient secondary market may prevent the liquidation or limit the funds that can be generated from the asset. Some assets are highly liquid and have low liquidity risk such as stock of a publicly traded company, while other assets are highly illiquid and have high liquidity risk such as a house (Kiyotaki and Moore, 2008). Liquidity risk becomes particularly important to parties who are about to hold or currently hold an asset, since it affects their ability to trade. Liquidity risk is financial risk due to uncertain liquidity. An institution might lose liquidity if its credit rating falls, it experiences sudden unexpected cash outflows, or some other event causes counterparties to avoid trading with or lending to the institution. A firm is also exposed to liquidity risk if markets on which it depends are subject to loss of liquidity (Sundararajan and Balino, 2011).

Liquidity risk management in banks is the risk of being unable to raise funds without incurring unusually high costs. This happens when the depositors collectively decide to withdraw more funds than the bank has immediately on hand hence, liquidity risk applies symmetrically to the borrowers in their relationship with the banks and to the banks in their relationship with the depositors in practice, the banks regularly find imbalances gap between asset and liability sides that need to be equalized because, by nature, banks issue liquid liabilities but invest in illiquid assets .If a bank fails to balance such gap, liquidity risk might occur followed by the other exposures such as insolvency risk, government's bail out the default banks and, reputation risk. These failures or inefficient management of liquidity is somehow determined by how strong is the liquidity pressure, how well the banks prepare the liquid instruments, how is the bank conditions in the time of liquidity pressure and, the inability of the banks to find liquid sources either inside or outside the banks (Anas and Mounira, 2008). Liquidity in financial markets and intermediaries has several different meanings. First, liquidity represents the capability of a financial firm to maintain constantly equilibrium between the financial inflow and outflow over time. Banks can adopt different strategies and techniques in order to achieve such goal. Second, liquidity is a measure of the capability of a financial firm to turn an asset into cash quickly, without capital loss or interest penalty. In this meaning, the emphasis is focused on the asset side of the balance sheet, since a potential source of liquidity can be achieved by selling, permanently or temporarily through repo operations, financial assets which are negotiated in markets having certain characteristics in terms of depth, breadth and size. Third, liquidity is somehow interpreted as the capability of a bank to raise funds on the wholesale financial markets first of all on the unsecured interbank market by increasing its liabilities. In a broader sense, liquidity can be considered as the aptitude of a financial firm to acquire funds when these funds are needed (Basel Committee on Banking Supervision, 2006).

The nature of banking business implies that banks structurally invest in assets having a different degree of liquidity. Therefore, the liquidity of a financial firm involves several different managerial aspects. While a significant percentage of assets are illiquid and cannot be easily converted in cash, without incurring in losses, typical liabilities of banks and financial firms are more liquid and imply a considerable degree of discretion as far as the timing of depositors' withdrawal. On one hand, traditional financial intermediation is based on different degree of discretionary power as far as the timing of use of funds. Consequently, the bank must maintain the confidence of depositors to have the faculty to withdraw their deposit on demand or at the scheduled moment. On the other hand, contemporary banking is based on more innovative financial services, which can also affect the capability of a bank to be liquid (Dinger, 2009). The increase in the complexity of financial instruments, the securitization, the growth of collateral usage and the trend to raise funds on wholesale capital markets are, among others, some of the reasons underlying the increase in the complexity of liquidity

management in the financial firms. In the light of above, liquidity risk can be considered as the risk that a financial firm, though solvent, either does not have enough financial resources to allow it to meet its obligations as they fall due, or can obtain such funds only at excessive cost (Vento and Ganga, 2009).

2.1.5 Efficient Liquidity Risk Management in Banks.

Eljelly (2004) elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. Efficient management of adequate liquidity is very crucial if banks are to operate optimally. Illiquidity is therefore a prominent risk in the banking sector that should be monitored at all times. Liquidity risk can also refers to the inability to procure enough fund due to exceptionally high costs of liquidity transformation that may affect the financial institution's incomes and capital fund, either now or in the future. This failure or inability can prompt the financial institution to suffer from liquidity crunch, especially, when demand for the capital is far higher than its existing liquidity level. This can thus force the financial institution to go under stress condition. However, liquidity risk is especially prominent in a financial crisis since a credit crunch and illiquid financial markets make it hard for banks to find funding sources, roll-over their debts, and mitigate maturity mismatches (Dinger, 2009).

It is the responsibility of every country to monitor and ensure that banks in their economy operate within the acceptable liquidity levels to avoid illiquidity crisis in the economy. Base III introduces for the first time internationally agreed minimum liquidity requirements for commercial banks. The main objectives of liquidity management are then to ensure sufficient reliable liquidity at all times and in all circumstances. It is necessary to guarantee banks' ability to meet its cash flow obligations. Since maturity transformation of short term deposits into long term loans is one of banks' fundamental roles, banks are then inherently vulnerable to liquidity risk, both of an institutional specific nature and a system wide effect. Liquidity management is of paramount importance because a liquidity shortfall at a single institution can have system wide repercussions. Moreover, financial market developments in the recent age have increased the complexity of liquidity and its management First, data is scare and lacking in quality. Also, historical events are not a particularly accurate predictive agent. Then data gathered from normal business activities may not be a good proxy for stress testing. It is obviously required good database system to gain sound liquidity management. Additionally, the liquidity management must include a projection of sources and uses of a bank's funds. By all means, the sound liquidity risk management, both in short run and long run is an integral component of a bank's contingency funding plan that can help the bank to prepare itself for any significant funding crisis that could arise (Khemraj, 2006). The liquidity measurement process consists of four necessary systems. The use of ratio analysis is one of the powerful tools in liquidity management. The application of ratios is developed to measure the relationship between various components in a bank's balance sheet. Examples of ratio analysis utilized for liquidity measurement are minimum liquid asset (MLA) requirement, capital adequacy ratio (CAR) and reserve requirement which is minimum cash balance (MCB). At the same time, the application of ratio analysis can be conducted for planning and preparing an institution's activities and strategies. It can also be used as a comparison among the various liquidity measures. In addition, a bank's liquidity position needs to be monitored with the application of these ratios, both on-balance-sheet and off-balance-sheet items (Lynch, 2007).

 The underlying measurement tool for liquidity is projection of cash flows based on both supply and demand for liquidity under normal market conditions. Also, evaluation of the implications of stress events on the projected cash flows is important. Institutions could conduct liquidity analysis with liability-based or off-balance-sheet funding strategies. The use of so-called pro forma cash flow statements may be benefit. The pro forma cash flow analysis usually shows institutions' projected sources and uses of fund under various liquidity scenarios. It can also identify potential funding shortfalls and liquidity gaps. The analysis should incorporate multiple scenarios that deliberate both general and unique risks faced institutions. Such analysis must be corresponding to the complexity of the institution's liquidity profile. At the end, it must measure a wide range of institutions' liquidity sources as another tool of liquidity management (Eakins, 2008). Various risk-based measures or framework used by financial institutions such measures or frameworks are important to capture possible risks in a system since risks are related to each other. Risk appetite must be defined based upon well defined criteria. For instance, target surplus must include proportion of total reliable liquidity, maximum financing requirement any period, target holding of liquid assets and limits on maturity mismatches. Moreover, reliability measures should consist of limits on reliance on a particular funding source and concentrate risk parameters. Therefore, the risk appetite should be reflected in a series of operational criteria and limits used to manage liquidity risk (Barr, 2004).

The basic approaches for monitoring the level of liquidity risk exposure maybe categorized into three types: the liquid assets approach, the cash flow approach, and a mixture of the two as explained as follows; in liquid asset approach, banks will maintain liquid assets on its balance sheet that can be drawn up on when needed. Most unsecured receivables will be treated as illiquid assets. As a variation, the banks may maintain a pool of unencumbered assets such as government securities to obtain secured funding through repurchase agreements

and other secured facilities. This approach is commonly used in securities sector under both normal and stress periods. It is used to a lesser extent in the banking and insurance sectors as they emphasize more on the cash flow matching approach (Brigham and Ehrhardt, 2005). Under the cash flow matching approach, the bank attempts to match cash outflows against contractual cash inflows of a various near-term maturity buckets. The mixed approach combines the elements of the two. Firms attempt to match cash outflows in each time against a combination of contractual cash inflows, plus other inflows that can be generated through the sale of assets, repurchase agreement or other secured borrowing. Assets relatively more liquid will be matched to the earlier time buckets and vice versa. When gaps in the maturity buckets become unfavorable, firms will turn to the mixed approach to ensure all obligations are met (Sharma and Iselin, 2006)

 To measure liquidity risk, a set of indicators has set with two different aspects: quantitative liquidity risk indicators and qualitative liquidity risk indicators. First, the following risk indicators should be considered when assessing the quantity of liquidity. In other word, they measure a level of liquidity risk exposure to an institution: availability of funding sources, diversification of funding sources, alternative funding sources, capacity to augment liquidity through asset sales and securitization, volume of wholesale liabilities with embedded options, vulnerability of a bank to funding difficulties, support provided by the parent company, besides the quantitative liquidity risk indicators, the qualitative indicators are introduced to capture quality of liquidity risk management (Eakins, 2008).

The rating is classified as strong, satisfactory, and weak quality of management. The following indicators must be evaluated for the rating; effectiveness of a board's policy approvals in responding to the designated guidelines and responsibilities for liquidity risk management, effectiveness of liquidity risk management process in identifying, measuring, monitoring, and controlling liquidity risk, interaction of management to changing market conditions, development of contingency funding plans, information system management, and comprehensive and effective internal audit coverage (Vento and Ganga, 2009).

2.1.6 Working Capital Management in relation to Bank's Liquidity Risk

Working capital management by definition is the regulation, adjustment, and control of the balance of current assets and current liabilities of a firm such that maturing financial obligations are met and the fixed assets are properly serviced. In order to manage working capital efficiently, there is the need that financial managers be able to plan and control current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations (Eljelly, 2004). Also asserts that this process tend to enhance management of cash flow and cash conversion cycle. The way that working capital is managed has a significant impact on profitability and cash holdings of firms, (Deloof, 2003).It ensures a sound liquidity for assurance of long-term economic growth and attainment of profit generating process and it ensures acceptable relationship between the components of firms working capital for efficient mix which guarantee capital adequacy.

Kiyotaki and Moore, (2008) there appear to be a certain level of working capital requirement, which potentially maximizes returns. Banks may have an optimal level of working capital that maximizes their value. Large surplus funds and generous lending rate may lead to high loan management reach out. For all countries, both developed and developing, one of the fundamental objectives of working capital management is to ensure that the organization has sufficient, regular and consistent cash flow to fund its activities. This requirement is particularly heightened for financial institutions like banks. For banking business, being liquid is not negotiable, at least for two reasons; to meet regulatory requirement in addition to ensuring that they have enough liquid funds to meet customer withdrawals. Working capital management is aimed at sustaining strong profitability together with sound liquidity which in turn leads to strong cash holdings for ensuring effective and efficient customer services. Most empirical theory of working capital management study is related to corporate financial management. In most cases, empirical studies in this area mainly apply to large enterprises. Obviously, financial management in banks and large enterprises bear strong similarities. However, there is a significant disparity which substantiates the study of financial management in banks. Since banks of developing countries experience difficulties in accessing external finance, they rely more strongly on internally savings funds than larger banks from developed economies. Working capital management thus plays an important role in the liquidity of banks in developing countries. As working capital management is related to short-term financial planning and cash leveler, liquidity in general represents a significant indicator for short-term performance, the effective and efficient working capital management should be of crucial importance. In spite of its importance and attractiveness, not all banks have had it easy operating in the country. While some banks have had to liquidate others have been forced to submerge into others. Even though strong empirical support may not be found to support the assertion that poor working capital management practices could play a major in bank performance and failures, all indications would point to this as being the main reason for the same (Lynch, 2007). Banks' chief executives properly recognize the role of efficient use of WC in liquidity and profitability, but in practice they could not achieve it due to suboptimum utilization of WC. Efficient WCM is necessary for achieving both liquidity and profitability of a company. A poor and inefficient WCM leads to tie up funds in idle assets and reduces the liquidity and profitability of a company (Reddy and Kameswari, 2004). Efficient

liquidity management involves planning and controlling current assets (CAS) and current liabilities (CAS) in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The cash conversion cycle (CCC) has been one of the more important measures of liquidity than the current ratio that affects profitability. There is a negative relationship between profitability and liquidity indicators such as current ratio and cash gap (Kalani and Waweru, 2007). Banks perform valuable activities on either side of their balance sheets. On the asset side, they make loans too difficult, illiquid borrowers. On the liability side, they provide liquidity on demand to depositors. But there seems to be a fundamental incompatibility between the two activities. The demands for liquidity by depositors may arrive at an inconvenient time and force the fire sale liquidation of illiquid assets. Furthermore, because depositors are served in sequence, the prospect of fire sales may precipitate self fulfilling runs that further jeopardize bank activities (Diamond and Rajan, 2002).

2.2 Empirical Literature Review

Garcia and Martinez (2007) studied the effects of working capital management on the profitability of a sample of small and medium-sized firms. They found that managers can create value by reducing their inventories and the number of days for which their accounts are outstanding. Moreover, shortening the cash conversion cycle also improves the firm's profitability. Chakraborty (2008) evaluated the relationship between working capital and profitability of companies and pointed out that, there were two distinct schools of thought on this issue according to one school of thought, working capital is not a factor of improving profitability and there may be a negative relationship between them, while according to the other school of thought, investment in working capital plays a vital role to improve corporate profitability, and unless there is a minimum level of investment of working capital, output and sales cannot be maintained in fact the inadequacy of working capital would keep fixed asset inoperative.

Singh (2008) found that the size of inventory directly affects working capital and its management. He suggested that inventory was the major component of working capital, and needed to be carefully controlled. Singh and Pandey (2008) suggested that, for the successful working of any business organization, fixed and current assets play a vital role, and that the management of working capital is essential as it has a direct impact on profitability and liquidity. Mohammad and Noriza (2011) worked on crating the relationship between Working Capital Management (WCM) and performance of firms. For their analysis they chose the Malaysian listed companies. They administered the perspective of market valuation and profitability. They used total of 172 listed companies from the databases of Bloomberg. They randomly selected five year data (2003-2007). This research studied the impact of the dimensions of working capital component i.e. C.C.C., current ratio (C.R.), current asset to total asset ratio (C.A.T.A.R), current liabilities to total asset ratio (C.L.T.A.R.), and debt to asset ratio (D.T.A.R.) in effect to the firm's performance whereby firm's value dimension was taken as Tobin Q (T.Q.) and profitability that is return on asset (R.O.A.) and return on invested capital (R.O.I.C). They applied two different techniques for analyzing the data that are multiple regression and correlations. They found that there is a negative relationship between working capital variables and the firm's performance.

Chatterjee (2011) focused on the importance of the fixed and current assets in the successful running of any organization. It poses direct impacts on the profitability liquidity. There have been a phenomenon observed in the business that most of the companies increase the margin for the profits and losses because this act shrinks the size of working capital relative to sales. But if the companies want to increase or improve its liquidity, then it has to increase its working capital. In the response of this policy the organization has to lower down its sales and hence the profitability will be affected due to this action. Mathuva (2009) studied the impact of working capital management on the performance and took almost 30 listed firms as a sample and all these companies were listed in Nairobi stock exchange and the data was taken from 1993 to 2008. There were certain findings of his research by analyzing the fixed effects regression models. Firstly, there is a negative relationship between the time when the cash is collected from the customers and the firm's productivity. This depicts, firms that are more profitable enjoys less time period for the collection of cash from the customers as compare to ones which are less profitable. Secondly, there is a positive relationship between the inventories when they were brought in and the period to which they are sold and the firm's profitability. The interpretation comes out as that the firms or the organizations which take more time to keep the inventories it reduces the costs of the disruption in the process of production and usually the business losses as there is the insufficiency in the goods. This situation decreases the operating cost of the firm. The third assumption of the research was the association between the average payment period and profitability and found out to be positive ($p<0.01$). The more the time taken to disburse the creditors, the profitability will increase.

Most empirical works which use data from non-financial firms Shin and Soenen (1998), Wang (2002) and Deloof (2003) but corroborate that of Padachi (2006) and Sharma and Kumar (2011) argue in favour of a negative relationship between CCC and firm profitability. The caution however is that the level of interest income earned by banks depends largely on the level of credit available to banks for lending. Consequently, banks should match their assets against their liabilities appropriately by finding the optimal combination of

current assets and current liabilities that would enable the banks to stay profitable. They found that a shorter cash conversion cycle results in better profitability. Deloof (2003) added number of day's accounts payable, number of day's accounts receivable and number of day's inventories to the studied measures. Amir Shah and Sana (2006), Garcia-Teruel and Martinez-Solano (2007), Falope and Ajilore (2009), Dong and Su (2010) and Mathuva (2009) all made nearly replicates of Deloof's article with different data and some expanding. All agree that smaller number of days accounts receivable and shorter cash conversion cycle improved profitability.

2.3 The Global Situation

Most countries have quantitative regulations, such as the liquidity ratio and the maturity gap ratio, and this approach is supposed to provide a tool to prevent banks from insolvency. It, however, does not take financial market conditions into account. Some countries have adopted requirements for bank liquidity risk management through stress testing, constructing contingency plans, etc. With liquidity risk becoming more important as the financial crisis intensifies, it is meaningful to review current regulation and supervision on bank liquidity risk management (Basel Committee on Banking Supervision, 2006). In practice, every institution needs levels of liquidity high enough to meet its payment obligations and low enough to take advantage of any investment opportunities. As sources of funding become ever more volatile and costly, active liquidity risk management enables institutions to keep ahead of the competition. However, liquidity risk is especially prominent in a financial crisis since (FPRI, 2011). In spite of efforts to liberalize and modernize financial institutions, markets and instruments in LDC, the banking sector forms the most important source of financing in these economies and it is likely to continue to be that way indefinitely. Therefore, the investment choice of banks can either retard finance's role in growth or augment that role. Hence, examining banks' liquidity preference in LDCs will emphasize important information regarding their behavior in such economies (Khemraj, 2007).

2.4 The Situation in Kenya

In Kenya, banks hold large quantities of excess liquidity a large part of which is non-remunerative in their asset portfolio. If the marginal borrower is unwilling to pay the minimum rate, then the banks accumulate non-remunerative excess liquidity. Therefore, non-remunerative excess liquidity and loans can become perfect substitutes at a very high rate of interest in the loan market (Khemraj, 2007). The obvious question would be why banks still hold unremunerated liquidity given that the foreign rate is the opportunity cost. There are likely to be several factors that preclude banks from doing so. The first is a shortage of foreign exchange in the domestic foreign currency market. This is a foreign currency constraint. The constraint can be unofficially maintained by the central bank when it accumulates international reserves by buying up US dollars in the local currency market. This behavior was found in Khemraj (2006) in the Guyana case.

2.5 Summary and Gaps

Mathuva (2009) studied the impact of working capital management on the performance. He found out that there is a negative relationship between the time when the cash is collected from the customers and the firm's productivity. Secondly, there is a positive relationship between the inventories when they were brought in and the period to which they are sold and the firm's profitability. The third assumption of the research was the association between the average payment period and profitability and found out to be positive (p<0.01). Shin and Soenen (1998), Wang (2002) and Deloof (2003) but corroborate that of Padachi (2006) and Sharma and Kumar (2011) argue in favour of a negative relationship between CCC and firm profitability. They found that a shorter cash conversion cycle results in better profitability. Deloof (2003) added number of day's accounts payable, number of day's accounts receivable and number of day's inventories to the studied measures. Amir Shah and Sana (2006), Garcia-Teruel and Martinez-Solano (2007), Falope and Ajilore (2009), Dong and Su (2010) and Mathuva (2009) All agree that smaller number of days accounts receivable and shorter cash conversion cycle improved liquidity and profitability.

A number of studies have been done relating to working capital management and its effect on profitability of commercial banks but few has exploited on the implication of liquidity risk of commercial banks. Therefore this study is aimed at filling the gap on working capital management and its implication on liquidity risk in commercial banks in Kenya.

3.0 RESEARCH METHODOLOGY

Longitudinal research design using Panel data was adopted in analyzing the relationship between Working capital management and liquidity risk. This is because the study involved taking repetitive measures overtime for the purpose of comparing returns over long periods (Kothari, 2004). Target population is defined as all the members of a real or hypothetical set of people, events or objects to which a researcher wishes to generalize the results of the research study (Kothari, 2004). The target population of this study was made up of all the 9 NSE quoted commercial banks in Kenya which are Barclays bank of Kenya, Kenya Commercial Bank, Standard Chartered Bank, National Bank of Kenya, The Cooperative Bank of Kenya, Diamond Bank of Kenya, CFC-Stanbic bank, Equity Bank and NIC Bank. A census study was conducted on the entire population where all the 9 NSE listed commercial banks in Kenya were analyzed. There was no need for a sample as the whole

population was selected.

Secondary data was collected for the purpose of this study, this was from the financial statements which were statements of financial position and income statement of the nine quoted commercial banks. This was obtained from the banking survey of Kenya. The data obtained was considered reliable and valid since these financial statements and reports were audited by accredited audit firms as per CBK requirements. Data collected was from the year 2002 to 2011. Descriptive statistics was employed to analyze quantitative data. The descriptive statistics was computed by means, mode and standard deviations using Statistical Package for social Sciences (SPSS version 19). Statistical inferences were drawn using correlation analysis applied to study and compares the effect of independent variables on the dependent variable. Time series analysis was also used to observe data over a series of years and took into account the change over time. The analysis of time series showed the trend of the movement of variables over time. The hypothesis was analyzed by linear regression which helped in determining the strength between the dependent variable and the independent variable. The linear regression model used was as follows:

LR = f (DACP, CCC, CAPP)

LR = β_o + β_1 DACP + β_2CCC + β_3 CAPP+ e

	LR =	Liquidity Risk
	DACP =	Debtors Average Collection Period
	CCC=	Cash Conversion Cycle
	CAPP=	Creditors Average Payment Period
Where:	β_o	= Intercept constant
	β_1, β_2 & β_3	= Partial regression coefficients of the scope of the Regression line of the independent variables 1 to 3. They Indicate the relationship between the dependent and Independent variables,
	e	= the error

4.0 RESULTS AND DISCUSSIONS
4.1 Assets in Commercial Banks
4.1.1 Deposits in Banks from 2002 to 2011

Figure 1 above shows that there has been a general increase in total deposits in the major banks in Kenya from the year 2002 to 2011. There was a sharp increase in total deposits for co-operative bank between 2008 and 2011.However in the year 2008, the total deposits for Barclays bank declined. Kenya Commercial Bank, National Bank of Kenya, Diamond bank, CFC Stanbic, Equity, Standard Chartered and NIC had a gradual increase in total deposits.
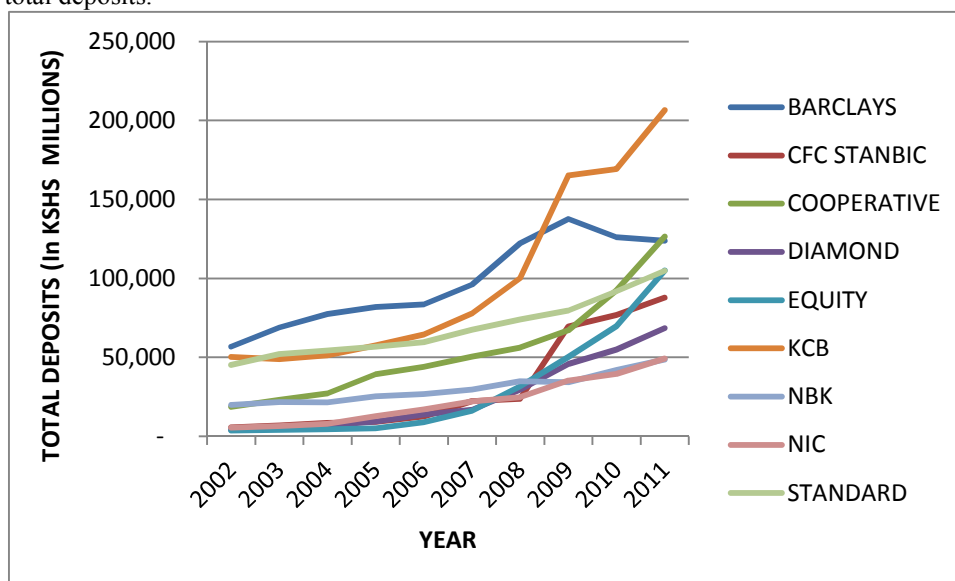

Figure 1: Total Deposits for nine NSE listed banks from year 2002-2011

4.1.2 Average Short term deposits

Table 1 show that there has been an increase in the average short term deposits in all the banks in Kenya from 2002 to 2011.This shows that there has been an increase in the short term deposits from the customers of the nine

listed banks.

Table 1: Annual Average short term deposits for nine NSE listed banks in Kenya

Year	2002	2003	2004	2005	2006	2007	2008	2009	2011	2011
Average short term deposits (Millions)	23,322	26,374	28,879	33,056	36,811	44,361	55,228	76,122	84,768	102,316

4.1.3 Mean Short Term Deposits

Table 2 shows a calculation of the mean short term debts from the year 2002 to 2011 depicts Kenya Commercial bank as the NSE listed bank with the highest mean of 99,160 million. This translates to the fact that KCB has the highest short term debts followed by Barclays bank with a mean of 97,474 million worth of short term debts. Equity bank ranks third with 89,954 million, Standard Chartered Bank ranks the fourth with 68,577million while NIC bank has the least mean short term debts of Kshs 22,105M.

Table 2: Mean short term debts for nine NSE listed banks from 2002 to 2011

Banks	Mean short term debts from 2002 to 2011(Millions)
BARCLAYS	97,474
CFC STANBIC	32,355
COOPERATIVE	54,536
DIAMOND	25,453
EQUITY	89,954
KCB	99,160
NBK	30,501
NIC	22,105
STANDARD	68,577

4.1.4 Quick Assets

Figure 2 below shows a general increase in the quick assets in all the listed commercial banks in Kenya from the year 2002 to 2011. A comparison of the trends for both the quick assets and the short term debts of all the 9 listed banks (Figure 2 and 3) depict that there is a positive trend of total deposits and quick assets
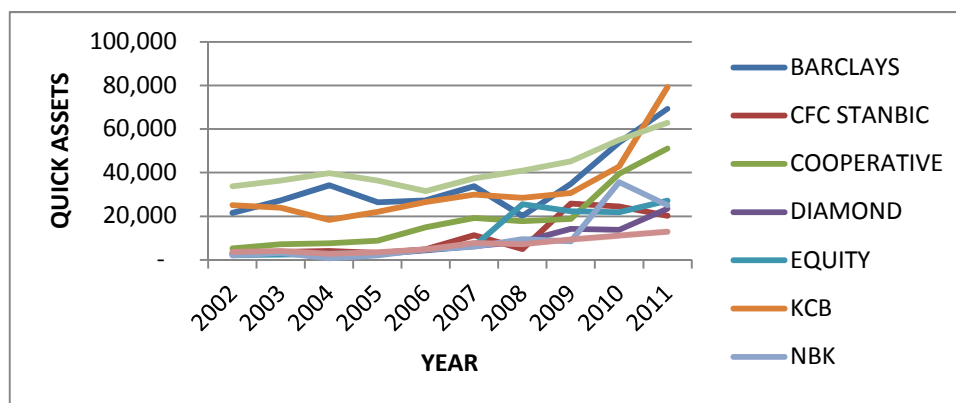

Figure 2: Quick Assets for nine NSE listed banks from the year 2002 to 2011.

4.2 Implications Of Debtors Average Collection Period On Liquidity Risk Of The Banks

Table 3 shows the analysis for the debtors average collection period depicts that National Bank of Kenya as the bank with the highest collection period of 382 days followed by Barclays Bank with 132 days. NIC has an average collection period of 126 whilst Cooperative Bank has an average of 110 days. Diamond Trust Bank had an average collection period of 107 days. Kenya Commercial Bank had 105 while equity averaged 87 days. CFC Stanbic had an average collection period of 79 days while Standard Chartered Bank 57 days. The industry or the market had an average collection period of 131 days. This indicates that National Bank of Kenya and Barclays Bank have adopted a more liberal policy. This shows that as banks increase the length of time it takes to collect its debts, liquidity decreases and when the banks reduces the period of collecting its debts, liquidity increases.

Table 3: Debtors average Collection Period and Liquidity of 9 NSE listed Banks (2002 to 2011)

Bank	Debtors Average Collection Period(days)	Liquidity=Quick Assets/Total Deposits (%)
NBK	382	14.70
BARCLAYS	132	36.89
NIC	126	41.64
COOPERATIVE	110	43.69
DIAMOND	107	45.92
KCB	105	47.25
EQUITY	87	49.97
CFC STANBIC	79	54.07
STANDARD	57	64.60
MARKET/INDUSTRY	131	

4.3 Hypothesis 1

4.3.1 Implications of Debtors Average Collection Period on the Liquidity of the Banks

Table 4 shows the implications of debtors average collection period on the liquidity of the banks, a linear regression model of the form $Y_i = B_0 + B_i X_i$, where Y_i is the liquidity of Bank i over the period between 2002 to 2011 while X_i was the average collection period for Bank i in the ten year period. B_0 Was found to be 376.38%. This is the level of liquidity that does not depend on the average collection period. B_i Was found to be **-5.96%**. This implies that for one day increase in the average collection period, there is a decrease on the liquidity of the banks by 5.96. These findings are consistent with the findings of Deloof (2003) who found out that there is a negative relationship between the gross operating income and the number of days for accounts receivable.

Table 4: Implications of debtors average collection period on the liquidity of the banks (linear regression)

Dependent Variable	Degrees of freedom	F	significance	B_0	B_i
Liquidity	7	16.42	0.005	376.38	-5.96

4.3.2: Debtors average collection period on liquidity of 9 NSE listed banks in Kenya

Figure 3 shows the graph of liquidity against debtors average collection period. The graph is of both the observed and the linear values are negatively sloped implying that liquidity and debtors average collection period are negatively correlated. The slope of the linear graph is **-5.96** which is equal to B_i .This implies that as the debtors average collection period increases, liquidity of a bank declines at the rate of 5.96%.When the linear graph is extrapolated, it will touch the Y axis (liquidity) at 376.38%. This will therefore be the constant level of liquidity of a bank which does not depend on debtors average collection period.
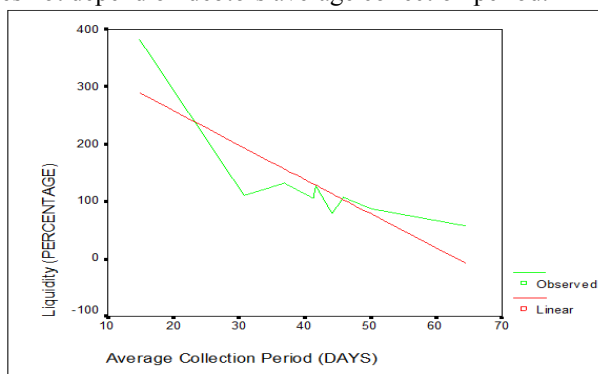

Figure 3: Debtors average collection period on liquidity of 9 NSE listed banks in Kenya.

4.4 Hypothesis 2

4.4.1 Implications of creditors average payment period on liquidity risk of the banks

Table 5 shows analysis of the creditor's average payment period from the year 2002 to 2011 shows that Equity

Bank had the least creditors' average payment period of 5 days as compared to the other 8 NSE listed banks in Kenya. On the other hand, Diamond Trust bank and NIC had the highest creditors' average payment period of 15 days. Barclays has a creditor's average payment period of 6 days while CFC Stanbic Bank had a creditor's average payment period of 9 days. Cooperative Bank had a creditor's average payment period of 11 days within the ten year period whereas Equity Bank had a creditor's average payment period of 5 days. Kenya Commercial Bank had a creditor's average payment period of 7 days while National bank of Kenya had creditors' average payment period of 11 days within ten year. Standard Chartered bank had a creditor's average payment period of 7 days within the span of ten years. The creditors' average payment period in the market was 10 days. This shows that Barclays, CFC Stanbic, Equity, Kenya Commercial and Standard Chartered Banks were below the market average in terms of creditors' average payment period. Cooperative, Diamond Trust, National and NIC banks were above the market average in terms of payment period. This suggests that increasing the creditors' average payment period increases the liquidity of a bank whereas reducing the creditors average payment period decreases liquidity of a bank. The implications of creditors average payment period on the liquidity of the banks was analyzed using a linear regression model of the form $Y_i = B_0 + B_i X_i$, where Y_i is the liquidity of Bank i over the period between 2002 to 2011 while X_i was the average payment period for Bank i in the ten year period.

Table 5: Creditors average payment period for nine NSE listed banks from 2002 to 2011

Bank	Creditors Average Payment Period From 2002 to 2011(in days)	Liquidity=Net Loans Advances/Total Deposits (%)
BARCLAYS	6	34.51
CFC STANBIC	9	62.13
COOPERATIVE	11	69.74
DIAMOND	15	85.24
EQUITY	5	32.40
KCB	7	55.22
NBK	11	66.53
NIC	15	82.20
STANDARD	7	48.32
MARKET /INDUSTRY	10	

4.4.2 Regression Model

Table 6 shows the results of linear regression results of the implications of creditors' average payment period on the liquidity of the banks. B_0 was found to be 61.26%. This is the level of liquidity in the 9 NSE listed Banks that does not depend on the creditors average payment period while B_i was 0.66. This implies that as the creditors' average payment period of a bank increases by one day, the liquidity of the bank increases by 0.66. This shows that as banks increase the length of time it takes to pay for loans, it reduces the burden on their cash and therefore gives them the opportunity to hold cash and cash equivalent

Table 6: Implications of creditors average payment period on the liquidity of the banks (linear regression)

Dependent Variable	Degrees of freedom	F	significance	B_0	B_i
Liquidity	7	0.52	0.493	61.26%	0.66

4.4.3: Creditors average payment period on liquidity of 9 NSE listed banks in Kenya

Figure 4 shows the graph of liquidity against creditor's average payment period. Both the observed and linear graphs are positively sloped implying that creditor payment period and liquidity are positively correlated. As the creditor payment period increases, liquidity also increases at the rate of 0.66, which is equal to B_i. If the linear graph is extrapolated to touch the Y axis (liquidity), it will touch at a liquidity of 61.26%. This is the average amount of liquidity that does not depend on liquidity.
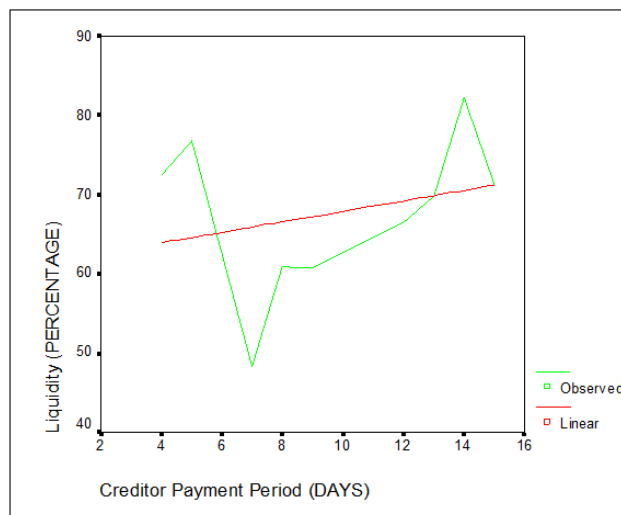
Figure 4: Creditors average payment period on liquidity of 9 NSE listed banks in Kenya

4.5 Hypothesis 3

4.5.1 Implications of cash conversion cycle on liquidity risk of the banks

Table 7 shows the average cash conversion cycle and liquidity for 9 banks in ten year period between 2002 and 2011; National Bank of Kenya had the highest average cash conversion cycle of 371 days. Barclays bank had an average cash conversion cycle of 126 days while NIC bank had 111 days. Cooperative Bank and Kenya Commercial Bank had an average cash conversion cycle of 99 and 97 respectively. Diamond Trust Bank had an average of 91 days whilst Equity had 82 days. Standard Chartered bank had an average cash conversion cycle of 50 days. The market average conversion cycle was 122 days meaning that National bank and Barclays bank were above the Market level and their liquidity was at risk. The other seven banks are below the Market level meaning that their liquidity is not at risk. This shows that increase on average cash conversion cycle period reduces the liquidity of a bank whereas decrease on average cash conversion cycle period increases the liquidity of a bank. The implications of Cash conversion cycle on the liquidity of the banks was analyzed using a linear regression model of the form $Y_i = B_0 + B_i X_i$, where Y_i is the liquidity of a Bank i over the period between 2002 to 2011 while X_i was the average Cash conversion cycle for Bank i in the ten year period.

Table 7: Average cash conversion cycle and liquidity for nine NSE listed banks from (2002 to 2011)

BANK	Average Cash Conversion Cycle (days)	Liquidity =Cash And Balances/Total Deposits (%)
NBK	371	23.96
BARCLAYS	126	35.22
NIC	111	37.24
COOPERATIVE	99	40.23
KCB	97	41.38
DIAMOND	91	46.08
EQUITY	82	51.58
CFC STANBIC	70	58.56
STANDARD	50	64.75
MARKET/INDUSTRY	122	

4.5.2 Regression Model

Table 8 shows the constant level of liquidity that does not depend on the cash conversion cycle was denoted by B_0. This was 33.31%. Conversely, B_i was found to be -0.0052. This means that liquidity is negatively related with the cash conversion cycle. Therefore, for every increase in cash conversion cycle by one day, liquidity of a bank decreases by 0.0052.

Table 8: implications of cash conversion cycle on the liquidity of the banks (linear regression)

Dependent Variable	Degrees of freedom	F	significance	B_0	B_i
Liquidity	7	0.02	0.889	33.31%	-0.0052

4.5.3 Implication of average cash conversion cycle on liquidity of 9 NSE listed banks in Kenya

Figure 6 is a graphical representation of the implication of average cash conversion cycle on liquidity of the 9 NSE listed banks. Both the linear and the observed graph have a general negative slope. Implying that cash conversion cycle and liquidity are negatively correlated. As the cash conversion cycle of a bank increases, the liquidity of a bank will decline at the rate of B_i =0.0052.When the linear graph is extrapolated, it will touch the Y axis (liquidity) at 33.31%.This is the threshold level of liquidity that does not depend on the cash conversion cycle.
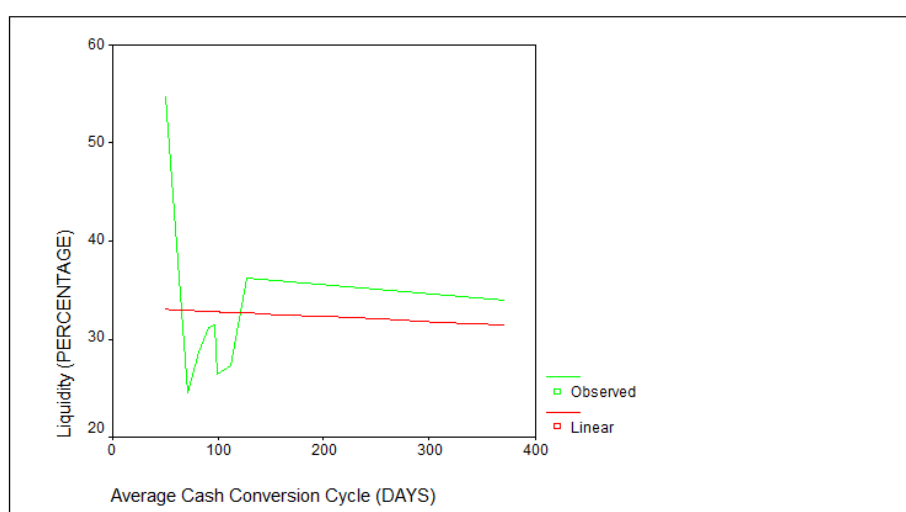

Figure 6: Implication of average cash conversion cycle on liquidity of 9 NSE listed banks in Kenya

5.0 SUMMARY

5.1.1 Implications Of Debtors Average Collection Period On Liquidity Risk In Quoted Commercial Banks In Kenya

The findings show that there is a significant relationship between debtors average collection period and liquidity risk in quoted commercial banks in Kenya. Debtors' average collection period has significantly negative relationship with the liquidity of banks; banks are able to increase their liquidity when they shorten their debtors' collection period. Deloof (2003), Amir Shar and Sana (2006), Garcia-Teruel and Martinez-Solano (2007), Falope and Ajilore (2009), Dong and Su (2010) and Mathuva (2009) All agree that smaller number of days accounts receivable improved liquidity and profitability of firms.

5.1.2 Implications Of Creditors Average Payment Period On Liquidity Risk In Quoted Commercial Banks In Kenya

The findings show that there is a significant relationship between creditors average payment period and liquidity risk in quoted commercial banks in Kenya. Creditors' average payment period has significantly positive relationship with the liquidity of banks; banks are able to increase their liquidity when they increase their creditors' payment period. These results show that as banks increase the length of time it takes to pay for loans, it reduces the burden on their cash and therefore gives them the opportunity to hold cash and cash equivalent. Banks should stretch the payments for better liquidity position. Mathuva (2009), Wang (2002), and Deloof (2003) all found out the same results that the more the time taken to disburse the creditors, the liquidity and profitability will increase.

5.1.3 Implications Of Cash Conversion Cycle On Liquidity Risk In Quoted Commercial Banks In Kenya

The findings show that there is a significant relationship between cash conversion cycle and liquidity risk in quoted commercial banks in Kenya. Cash conversion cycle has significantly negative relationship with the liquidity of banks; banks are able to increase their liquidity when they shorten their cash conversion cycle. Falope and Ajilore (2009), Eljelly (2004), Mathuva (2009) and Dong and Su (2010) supports the findings that

reducing the cash conversion cycle improved liquidity and profitability of firms.

5.3 Recommendations

The banks can stretch the accounts payable so that they can reduce the cash conversion cycle period. Banks can improve their liquidity by increasing the number of days accounts are payable in as far as they do not strain their relationships with the creditors and reducing the cash conversion cycle up to an optimal level.

The banks can reduce cash conversion cycle period so as it can lead the company liquidity higher. A careful reduction of cash conversion cycle period will improve the liquidity of a bank and excess cash can be reinvested in the bank.

The banks can improve the cash conversion cycle by better debtor's collection period management. The banks should minimize debtors by reducing number of day's accounts receivable which will reduce the cash conversion cycle and ultimately improves liquidity.

The accounts receivable should be collected soon and they should stretch the payments for better liquidity position. The bank should shorten the debtors' collection period and extend the creditors' payment period so as the bank can have sufficient liquidity to carry out day to day operations.

Bank should maintain its current assets for meeting its short term obligation. The banks should increase their liquidity by shortening their debtors' collection period and cash conversion cycle whereas increasing their creditors' payment period for better liquidity position.

A study about bank industry can adequately address all the issues in this dynamic and yet complex sector. This was a census study and therefore suffers from certain restrictions that would not be present when cross sectional study of all banks is undertaken. It is with this in mind that an empirical study is recommended about the industry undoubtedly, this study will form an important part in that undertaking.

REFERENCES

Afza, T. and Nazir, M. (2009). Impact of aggressive working capital management policy on firms profitibility. *The IUP Journal of Applied Finance* , Vol 15:20-30.

Amir Shah, S.M. and Sana, A. (2006). Impact of working capital management on the profitability of oil and gas sector of Pakistan, *European Journal of Scientific Research*, Vol.15: 301-307.

Anas, E. and Mounira, B. A. (2008). Managing Risks and Liquidity in an Interest Free Banking Framework, the Case of the Islamic Banks. *International Journal of Business and Management,* Vol 1:80-95.

Barr, N. (2004). *Problems and definition of measurement. In Economics of the welfare state.* New York: Oxford University Press.

Basel Committee on Banking Supervision, (2006). *The management of liquidity risk in financial groups*, Bank for International Settlement.

Bhunia, A. (2011). A trend analysis of liquidity management efficiency in selected private sector Indian steel industry. *International Journal of research in commerce and management* , Vol1 :115-137.

Brigham, E.F. and Ehrhardt, M.C. (2005). *Financial Management*: Theory and Practice. (11th Ed). Australia: Thomson Learning.

Chakraborty, K. (2008). Working capital and Profitability. *Icfai Journal of Management research* , Vol 34:32-47.

Chatterjee, S. (2011). Impact of Working Capital Management on the Profitability of the Listed Companies in the London Stock Exchange: 19-27.

Deloof, M. (2003). Does working capital management affects profitability of Belgian firms? *Journal of business finance & Accounting* , Vol 30:573-587.

Diamond and Rajan. (2002). Banks and Liquidity. *American Economic Review Papers and Proceedings* , Vol 1 :8-23.

Dinger, V. (2009). Do foreign-owned banks affect banking system liquidity risk? *Journal of Comparative Economics,* Vol 4: 647–657.

Dong, H.P. and Su, J.T. (2010). The relationship between working capital management and profitability, *International Research Journal of Finance and Economics*, Vol 49:62-71.

Eakins, G.S. (2008) *Financial Markets and Institutions*. Sage Publications. Beverly Hills.

Economic Intelligence Unit. (1995). *Banks Liquidity Management.* Nairobi: Country Report Kenya.

Eljelly, A. (2004). Liquidity-Profitability tradeoff:An empirical investigation in an emerging market. *International Journal of Commerce & Management* , Vol 14:48-61.

Falope, O.I. and Ajilore, O.T. (2009), Working capital management and corporate profitability, *Research Journal of Business Management*, Vol 3:73-84.

Fiscal Policy Research Institute, (2011). *Regulation and Supervision for Sound Liquidity Risk Managenemt For Banks Regulation.* Thailand: Fiscal Policy Research Institute.

Garcia, T. and Martinez, S. (2007). Effects of working capital management on SME profitability. *International Journal of management finance* , Vol 3:164-177.

Ganesan,V. (2007). An analysis of working capital management efficiency in telecommunication equipment. *Industry Academic Journal* , Vol 3:12-25.

Hadley, A. (2004). A modern view of inventory. *Strategic Finance* , Vol 86:30-39 .

Horne, J.C. and Wachowicz, J.M. (2000). *Fundamentals of financial Management(12 ed).* Newyork: Prentice Hall.

Kalani, V.M and Waweru, N.M. (2007). *Commercial Banking Crises in Kenya:Causes and Remedies.*Research Paper. Canada: York University.

Khemraj, T. (2006). *Excess Liquidity,Oligopoly Banking and Monetary Policit in a small open economy.* New york: PhD dissertation,New school for Social Research.

Khemraj, T. (2007). What does excess bank liquidity say about the loan market in less developed countries. *Journal of economic and social affairs DESA* ,Vol 3:41-.60.

Kiyotaki, N. and Moore, J. (2008). *Liquidity,business cycles and monetary policy.* Princeton University,unpublished.

Kothari, C.R. (2004). *Research Methodology,2nd Edition. Method and Techniques.* Nairobi, Acts Press.

Krueger, T. (2002). An analysis of working capital management results across industries. *American Journal of Business* , Vol 2:11-18.

Lee, A.H, and Kang, H.Y. (2008). A mixed 0-1 integer programming for inventory model. *A case study of TFT-LCD manufacturing company in Taiwan,Kybernetes* , Vol 37:12-25

Lynch, D. (2007) *the Art and Science of Financial Management*. (Quality in the finance function) Longman Inc. Newyork.

Maness, T. and Zietlow, J. (2004). *Short-term financial management.* Australia: Southwestern Press.

Mathuva, M.D. (2009). The influence of working capital management components on corporate profitability:a survey on Kenyan listed firms. *Research Journal of Business Management* , Vol.5:1-11.

Mohammad, N. and Noriza, S. (2011). Working capital management:The effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management* , Vol.5:140-147.

Padachi (2006). "Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms", *International Review of Business Research Papers* Vol.2 No. 2: 45 -58.

Raghavan, R. (2003). *Risk Management in Banks*. Chartered Accountant .

Raheman, A. and Nasir, M. (2007). Working capital management and profitability-case of Pakistani firms. *International Review of Business Research Papers* , Vol 3:279-300.

Reddy, P.R. and Kameswari, P. (2004). Working capital management practices in Pharma industry. *A case study of Cipla Limited Management Accountant* : 638-644.

Sharma, D.S. and Iselin, E. (2006) '*The Decision Usefulness of Reported Cash Flow Information versus Accrual Information for Banker's Assessment of Corporate Solvency'*, Western Decision Sciences Conference, Maui, Hawaii.

Sharma, A. K. and Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability. *Global Business Review*, 12(1), 159-173.

Shin, H. H. and Soenen, L. (1998). "Efficiency of Working Capital and Corporate Profitability". *Financial Practice and Education*; 8: 37-45.

Singh, P. and Pandey, S. (2008). Impact of Working Capital Management in the Profitability of Hindalco Industries Limited. *The Icfai University Journal of Financial Economic* , Vol 36:84-98.

Singh, P. (2008). Inventory and Working capital management:An Empirical Analysis. *The Icfai University Journal of Accounting Research* , Vol.35:35-51.

Su, F.C. (2002). *The impact of the change of business cycle in manufacturing industry.* Taiwan: Unpublished masters dissertation Department of Accounting,National cheng chi.

Sundararajan, V. and Balino, T. (2011). *Issues in recent banking crises: Cases and Issues.* Washington,DC: International Monetary Fund.

Vento, G. A. and Ganga, P. L. (2009). Bank Liquidity Risk Management and Supervision, *Journal of Money, Investment and Banking,* Vol 10: 79-126.

Wang, Y. J. (2002). Liquidity Management, Operating Performance, and Corporate Value: Evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, 12, 159-169.

Weisel, J.N.Harm, and Brandley, C. (2003). The cash Factor. *Strategic Management*, 29-33.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Recent conferences: http://www.iiste.org/conference/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar