DETERMINANTS OF LIQUIDITY LEVELS OF COMMERCIAL BANKS LISTED ON NAIROBI SECURITIES EXCHANGE IN KENYA

BY

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ABSTRACT

Liquidity level in the financial sector is key to financial intermediation, economic growth and economic sustainability and key to all nations in the world. This is evident in the development of guidelines and policies on liquidity management.The CBK has set the liquidity ratio at 20%. Despite this commercial banks listed in the NSE posted averages of 37%, 41.9% and 38.6% in 2011,2012 and 2013 respectively according to CBK begging the question of what else determines this liquidity levels other than this statutory requirement. Various studies have been conducted in this area but none specifically investigated the influence of investment strategies, management policies and loan structures on liquidity levels of the Ten commercial banks listed in NSE as at July 2014. The purpose of this study therefore was to investigate the factors that determine the liquidity levels of commercial banks listed on NSE. The study specifically sought to: evaluate the influence of investment strategies, management policies and structure of loans on the liquidity levels of commercial banks listed at NSE. The anchor theory is the Keynesian theory on liquidty preference. A cross sectional approach and correlational research design was used. The target population for the study comprissed of 254 divisional and departmental managers where a sample of 64 was selected using stratified random sampling techique. Data was collected using a questionnaire which was pre-tested to identify errors. Pretest data using test-retest method had a correlation of 0.782 indicating high levels of reliability. Analysis of data was done using descriptive and regression analysis.The regression model indicated that there was correlation between the independent and dependent variables with an R of 0.247 at $p > 0.05$. The results show that with a one unit change in the investment strategies of the bank the liquidity levels will increase by approximately 0.595 at $p > 0.08$. Secondly with a one unit change in loan structure of the banks it alters liquidity levels by approximately 1.480 at $p < 0.009$. Lastly with one unit change in management policy the liquitity levels change by -1.754 at $p > 0.006$. The study concluded that all the independent variables affected liquidity levels but at varying extents. However structure of loans was established to have more positive effect on liquidity levels .Although management policy had a negative effect it had the highest correlation with liquidity levels. The research recomends that banks must undertake due diligence on their investments options , further classify the loan structures to include very short term and very long term classes and that managerial decision be made based on factual information and data rather than intuition to ensure profitability and a better managed level of liquidity.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally in recent years, the world economy has experienced a number of financial crises. Often, at the center of these crises are issues of liquidity in the banking sector and financial markets.Ideally, commercial banks that hold cash reserves below a regulatory minimum set by the regulator of commercial banks are deemed to have violated their license requirements and face the risk of losing their trading licenses. The seeds of a financial crisis may also be sown during times of excessive liquidityfor example, when crises are likely to occur, banks seem less willing to lend and therefore hold more liquidity.

For commercial banks, liquidity entails their ability to meet customers demand for cash, both at the banking halls, clearing house and Automated Teller Machines (ATM) withdrawals, meet daily loan disbursement demands and thirdly meet their operational expenses without incurring unacceptable losses in so doing. This is closely tied to the liquidity management policies which involve the techniques used by banks management to ensure the bank has cash to meet the above obligations. Therefore, liquidity management would include the strategy that a bank adopts to balance the available cash to show how much the bank will need for payments to its customers and suppliers (Acharya, Shin & Yorulmazer, 2011). Liquidity management is an important determinant of the financial stability of financial institutions. The objective of liquidity management is to ensure that banks are able to meet in full all their financial obligations as they fall due (Ashcraft, 2006). The main objective of asset liability management in Banks is not to eradicate or eliminate risk, but to manage it in a way that the volatility of net interest income is minimized in the short run and economic value of the bank is protected in the long run (Berger et al., 2010).Liquidity is a prime concern in a banking environment and a shortage of liquidity has often been a trigger for bank failures. Holding assets in a highly liquid form tends to reduce the income from that asset (cash, for example, is the

most liquid asset of all but pays no interest) so banks will try to reduce liquid assets as far as possible(Acharya &Naqvi, 2010).

However, a bank without sufficient liquidity to meet the demands of their depositors risks experiencing a bank run. The result is that most banks now try to forecast their liquidity requirements and maintain emergency standby credit lines at other banks (Blundell-Wignall & Atkinson, 2010).Studies done in various world markets depict that liquidity levels of commercial banks attracts a lot of attention from scholars and practitioners. . In the United States of America (USA) it has been established that commercial banks will continue to hold significant liquidity into the foreseeable future but there is an opportunity for banks to reduce their liquid assets by more than $100 Billion through improved management of contingent liquidity needs and liquidity forecasting (Buehler, Noteboom & Williams, 2013). In the United Kingdom (UK), the prudential liquidity guidance regime is designed such that Liquid Asset Buffers (LAB) can be drawn down in the event of a liquidity stress and used for the duration of the period of stress; and indeed certain banks have used their buffers when needed. All of their buffer can be used in a stress and they will be given reasonable time to rebuild their buffers subsequently (Bank of England, 2013).Judit & Major (2001) studied the liquidity management operations at the National Bank of Hungary and established that the rise of monetarist theories and negative experiences with high inflation have been responsible in the past decade for the growing acceptance of the view that delivering price stability and thus ensuring predictable economic environment should be the final goal of monetary policy.

In India, Mayank and Mishra (2012) hold the view that banks should have a formal contingency plan of policies and procedures to use as a blueprint in the event the bank is unable to fund some or all of its activities in a timely manner and at a reasonable cost.The financial sector in Kenya has seen a total of 50 banks collapse due to a myriad of reasons, liquidity being one of them. The commercial banks that have collapsed due to liquidity related issues include Bullion Bank, Trust Bank and Euro Bank.

The survival of commercial banks depends greatly on how liquid they are since illiquidity being a sign of imminent distress can easily erode the confidence of the public in the banking sector and results to deposit (Gatev et al., 2009).There are two categories of bank liquidity: Precautionary and transactional liquidities. Precautionary liquidity is the ratio of total cash, demand deposit at central bank, and demand deposit at other banks, to total asset while transactional liquidity is the ratio of total traded securities of central bank, government, and others, to total asset (Acharya and Naqvi, 2010).

Adequate liquidity enables a bank to meet three risks namely: funding risk (the ability to replace net out flows of funds either through withdrawals of retail deposits or non-renewal of wholesale funds), time risk (the ability to compensate for non receipt inflows of funds if the borrower fails to meet their commitment at a specific time) and lending risk (ability to meet requests for funds from important customers) (Olagunju, Adeyanju & Olabode, 2013). For a corporation with a published balance sheet there are various ratios used to calculate a measure of liquidity. These include the current ratio which is the simplest measure and calculated by dividing the total current assets by the total current liabilities. A value of over 100% is normal in a non-banking corporation. However, some current assets are more difficult to sell at full value in a hurry. Secondly, the quick ratio is calculated by deducting inventories and prepayments from current assets and then dividing by current liabilities, giving a measure of the ability to meet current liabilities from assets that can be readily sold. However, a better way for a trading corporation to meet liabilities is from cash flows, rather than through asset sales. Therefore, a third ratio; operating cash flow ratio, can be calculated by dividing the operating cash flow by current liabilities. This indicates the ability to service current debt from current income, rather than through asset sales (Distinguin, Roulet & Tarazi, 2013).

The regulator of commercial banks in Kenya, Central Bank of Kenya (CBK) stipulates the minimum holding of liquid assets held by commercial banks with the current ratio being 20% of the total deposits held by the commercial bank. The minimum holding of liquid assets also acts as a buffer to ensure that commercial banks can meet their current financial obligations if there is a freeze in funding markets. This regulation is aimed at maintaining liquidity and preventing market crashesstemming from shortages of liquidity.

This required buffer is different from thebank's excess buffer. The excess buffer is considered to be the holding of liquid assetsin excess of requirements. This helps banks ensure that the liquidity demands of their customers can be met in times of increased liquidity pressure(Acharya, *et al.* 2011).

The purpose of the regulation among others is to; ensure that each institution meets the minimum liquidity requirements, guide institutions in the formulation of liquidity risk management strategies, policies, procedures, management information systems, internal controls and contingency plans for unexpected distress situations, protect deposit funds, promote a stable and efficient banking system, and endear confidence in the financial sector. The CBK supervisory department continues to adopt and implement effective and sound supervisory methods in order to minimize the risk inherent in the banking system in Kenya by ensuring that the funding gap for commercial banks is managed through a stable funding base along with detailed forecasting. Under section 19 of the Banking Act in Kenya, an institution shall maintain a minimum holding of liquid assets as the Central Bank of Kenya may determine from time to time. For instance, the current liquidity ratio stands at 20% of the total liabilities (CBK, 2014).

.Masuku (2014) investigated the determinants of excess liquidity in the listed banks in Kenya and established that bank specific factors affect listed commercial bank's excess liquidity positively and that external factors do not affect listed commercial bank's excess liquidity significantly. However, the study did not focus on what determines the general levels of liquidity of listed commercial banks in Kenya.

Although the Central Bank of Kenya has set the liquidity ratio at 20%, many banks in Kenya are still operating way above this ratio such as averages of 37%, 41.9% and 38.6% in 2011,2012 and 2013 respectively according to CBK Statistics begging the question of what else determines this liquidity while some have been reported to have gone below this ratio (CBK, 2014) leading to their downfall.

Holding assets in highly liquid form tend to reduce the income from that asset.Hence, bank liquidity management is important for both bank managers and policymakers in

safeguarding overall financial stability (Acharya &Naqvi, 2010). Therefore, there still exists a need for a study to identify the other factors, apart from monetary policy of CBK, which influence the general liquidity levels of commercial banks in Kenya and despite the ramifications of high liquidity.

1.2 Statement of the Research Problem

Although the Central Bank of Kenya has set the liquidity ratio at 20%, many banks in Kenya are still operating way above this ratio such as averages of 37%, 41.9% and 38.6% in 2011,2012 and 2013 respectively according to CBK Statistics while some have been reported to have gone below this ratio (CBK, 2014) leading to their downfall. Findings from previous studies indicate that profitability of commercial banks is determined by the liquidity management framework of the banks while poor liquidity management is the main reason for failure of commercial banks. It had also been established that high interest rates result in low loan uptake by clients and thus increase the liquidity levels of commercial banks.. However, these studies had a limited scope of the factors influencing liquidity levels of commercial banks with their focus being on commercial banks within a given locality. In addition, the main determinants of liquidity levels among commercial banks had been categorized into internal and external factors. Holding assets in highly liquid form tend to reduce the income from that asset. Hence, bank liquidity management is important for both bank managers and policymakers in safeguarding overall financial stability and ensure profitabilty from normal operations.Arguably then, why is it that banks have consistently posted liquidity ratios higher than the CBK guideline? Therefore, there still exists a need for a study to identify the other factors, which influence the general liquidity levels of commercial banks in Kenya other than the CBK guideline and despite the ramifications of high liquidity.

1.3 Objectives of the Study

The general objective of the study was to investigate the factors that determine the liquidity levels of commercial banks listed on NSE. The specific objectives of the study were to;

1. To evaluate the influence of investment strategies on the liquidity levels of commercial banks listed on Nairobi Securities Exchange.
2. To establish the influence of management policies on the liquidity levels of commercial banks listed at Nairobi Securities Exchange.
3. To determine the influence of structure of loans on the liquidity levels of commercial banks listed at Nairobi Securities Exchange.

1.4 Research Questions

1. What is the influence of investment strategies on the liquidity levels of commercial banks listed at Nairobi Securities Exchange?
2. What is the influence of management policies on the liquidity levels of commercial banks listed at Nairobi Securities Exchange?
3. What is the influence of structure of loans on the liquidity levels of commercial banks listed at Nairobi Securities Exchange?

1.5 Scope of the Study

The study focused on the effects of investment strategies, management policies and structure of loans for the public on the liquidity levels of commercial banks listed at NSE. The period of investigation ranged between 2010 and 2013 in order to establish a trend from the information documented in the annual published audited financial statements of the selected commercial banks. Only the commercial banks listed at Nairobi Securities Exchange were investigated for uniformity and ease of avaiability of published data from the audited financial statements.

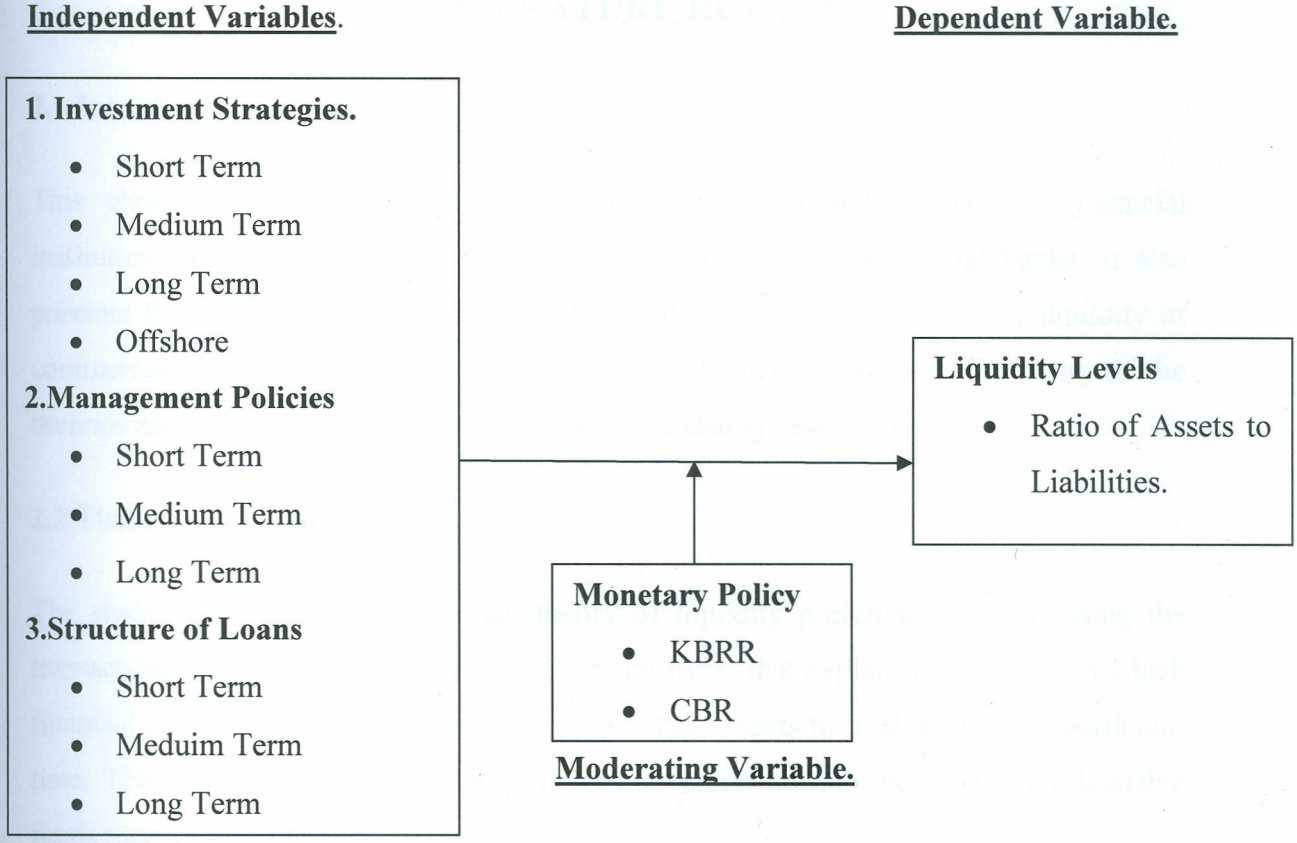
1.6Justification of the Study

The findings of this study are of benefit to staff and management of commercial banks by shedding more light on how day-to-day activities and practices ought to be implemented in order to attain the required levels of assets and liabilities. The attainment of adequate levels of liquidity among commercial banks will lead to a constant flow of credit for businesses and a stable regime of lending rates which would ultimately spur faster economic growth. The improved practices may also lead to high performance levels and aid in the achievement of the target profits among the commercial banks.

The policy makers in the field of Finance including CBK and KBA can use the findings of this study to come up with universally applicable policies that can improve the management of liquidity levels among commercial banks in Kenya.In addition, academic and business researchersin the field of Financecan able to borrow from the findings of this research to support literary citations as well as develop themes for further research.

The findings contributes to professional extension of existing knowledge in Finance by helping to understand implications of investment strategies, management policies and structure of loans on the overall liquidity levels of commercial banks listed on NSE. This will enrich the body of knowledge in this field and will prompt more investigations into the area of liquidity levels and liquiduty management in Kenya banks.

1.7 Conceptual Framework



Source: (Self Conceptualization, 2014)

Figure 1.1 Conceptual Framework of the Study

The conceptual framework shows that the independent variables (Investment strategies, management policies, and structure of loans) influence the dependent variable (ratio of assets to liabilities (liquidity level) of commercial banks). The context of the study was the commercial banks listed at Nairobi Securities Exchange. However, the effect of the independent variables on the dependent variable was moderated by the monetary policy of CBK which includes the Central Bank Rate (CBR) and the Kenya Bankers Reference Rate (KBRR).

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical foundations of liquidity levels of financial institutions and the factors that determine the liquidity of commercial banks. It also presents the empirical findings from related studies on different aspects of liquidity of commercial banks and other financial institutions.It then presents the summary of the theories and empirical findings and identifies the existing research gap.

2.2 Theoretical Perspectives

The study will be on the Keynesian theory of liquidity preference encompassing the transactionary, speculative and precautionary motives that explain the basis upon which financial institutions determine the amount of liquid assets to hold at any one particular time. The other theories include Keynesian the credit market theory and the loanable funds theory:

2.2.1 Keynesian Theory

The Keynesian theory states that in liquidity preference of a household or firm is determined by three main motives: Transactionary motive, speculative motive and precautionary motive. Therefore, the amount of money held by commercial banks depends on the extent to which these three motives are competing with each other. For instance, if the commercial bank intends to invest in infrastructural development like a new banking system; it would need to hold large volumes of liquid assets so as to finance the project. This might affect the size of assets and liabilities that the bank would hold. Secondly, if there is a public initial offering in the offing and the commercial banks intends to buy a large issue, then it might hold more cash for speculative purpose and therefore affect its assets and liabilities portfolios. Lastly, if there is a pending case in court that might result in huge financial implications, then the commercial bank would also hold a considerable amount of liquid assets in anticipation of the court verdict and

thereby affect the liquidity levels of the bank(Fofack, 2005).Consequently, the keynesian theory could be used to explain liquidity management choices in commercial banks. However, the specific motives of level of liquidity differ from bank to bank depending on factors which we seek to investigate.

2.2.2 Credit Market Theory

This theory postulates that the current prices in the credit market affects the liquidity levels of lending institutions. For instance, if collateral and other restrictions remain constant, the interest rate is the only price mechanism. However, if there is an increasing demand for credit then the commercial banks will avail more credit to the customers. On the other hand, if the interest rate rises and there is low demand for credit, then the commercial banks will divert the liquid assets to other investments in order to sustain their profitability. In practice, if commercial banks want to control the supply side of the credit market, they would increase their interest rates thereby making credit more expensive and vice versa (Fofack, 2005). Based on the interest rate variable, the credit market theory can be used the liquidity management choices adopted by Commercial Banks. i.e. Interest rates influence the liquidity management options for commercial banks.

Therefore if credit prices affcet the level of liquidity in the market, what determines the rates which in turn influnce liquidity levels?

2.2.3 Loanable Funds Theory

The loanable funds theory contends that the demand of loanable funds originates from domestic business, consumers, governments and foreign borrowers while the supply of loanable funds is generated by domestic savings, dispersion of money balances and money creation in the banking system and foreign lending. The theory holds that equilibrium will be reached only when the demand and supply factors reach equilibrium. Therefore, this theory suggests that the liquidity levels of commercial banks would be a function of the demand or supply side factors of the loanable funds. If the supply side is

more than the demand side, then the liquidity levels will be higher and vice versa (Altunbas *et al.* 2009).

Apart from the demnd and supply side of the laonable fund theory, we seek to fnd out how the the structure of the loans so demanded or supplied affect the level of liquidity in the said commercial banks.

2.3Review of Empirical Studies

Various empirical studies have been carried out to investigate the extent to which management policies, investment strategies, interest rates and structure of loans influence the liquidity levels of lending institutions including commercial banks.

2.3.1 Investment Strategies

A few studies have been conducted to establish the effects of investment strategies on the liquidity of organizations. Munchil (2010) conducted a survey of the determinants of liquidity of companies listed at Nairobi Securities Exchange. The findings indicated that, in order to promote effective diversification of investments, companies should regularly gauge their capacity to raise funds quickly from each of their investments. It should identify the main factors that affect its ability to raise funds and monitor those factors closely to ensure that estimates of fund raising capacity remain valid. An organization should also establish a funding strategy that provides effective diversification in the sources and tenor of funding and maintain an ongoing presence in its chosen funding markets and strong relationships with funds providers. However, the study only concentrated on the effects of assets management practices on the liquidity of organizations and did not focus on the liability management practices.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. The findings revealed that the percentage of the profits of commercial banks originating from commissions and fees was higher than the percentage of profit earned from loans and advances. The findings indicated that, a commercial bank should actively manage its intraday liquidity positions and risks to meet payment and

settlement obligations on a timely basis under both normal and stressed conditions and thus contribute to the smooth functioning of payment and settlement systems. There is also need for the bank to actively manage its collateral positions, differentiating between encumbered and unencumbered assets and monitor the legal entity and physical location where collateral is held and how it may be mobilized in a timely manner. The findings indicated that there is need for organizations, including commercial banks, to identify sources of potential liquidity strain and to ensure that current exposures remain in accordance with a the organization's established liquidity risk tolerance. For instance, a commercial bank should use stress test outcomes to adjust its liquidity risk management strategies, investment policies, and positions and to develop effective contingency plans. A bank should have a formal Contingency Funding Plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. A CFP should outline policies to manage a range of stress environments, establish clear lines of responsibility, include clear invocation and escalation procedures and be regularly tested and updated to ensure that it is operationally robust(Gorton & Winton, 2000). A bank should also maintain a cushion of unencumbered, high quality liquid assets to be held as insurance against a range of liquidity stress scenarios, including those that involve the loss or impairment of unsecured and typically available secured funding sources. There should be no legal, regulatory or operational impediment to using these assets to obtain funding (Ndichu *et al.* 2013). These studies were anchored on the assumption that doubtful debts and bad debts were the reason for instability in the liquidity levels of commercial banks in Kenya. Other contributors to the liquidity level of commercial banks including investment strategies, management policies and structure of loans were not investigated.

Odongo (2008) investigated the effects of liquidity levels on the stock returns of companies listed at Nairobi Securities Exchange. The findings indicated that liquidity levels of companies had a double effect on the stock returns. For instance, high liquidity levels was identified as a mechanism through which companies would take advantage of fluctuations in share prices by buying huge issues during a bullish season and making huge capital gains in the short term. However, during seasons of low share prices, high

liquidity levels was identified as the main source of opportunity costs of missed opportunities like real estate and offshore investments. In conclusion, the findings indicated that liquidity levels of companies affected the stock returns in various ways depending on the prevailing market conditions. The findings indicated that a bank should clearly articulate a liquidity risk tolerance that is appropriate for its business strategy and its role in the financial system. The study focused on how commercial banks would enhance their liquidity through earnings from trading in stock of listed companies, real estate and offshore investments but did not consider the effects that other factors like structure of loans and management policies would have on the liquidity levels of listed companies.

Masuku (2014) conducted a study of the determinants of excess liquidity in the listed banks in Kenya. The findings indicated that the nature of investment options in the capital market and money market affected liquidity levels of commercial banks. For instance, the availability of a bullish securities exchange would attract more buyers of equities who will access their bank deposits to execute the purchases thus reducing the liquidity levels of commercial banks. On the other hand, in times of a bearish market, the rush to sell off equities would lead to more bank deposits which would increase the liquidity level of commercial banks. Other investment options that were identified to be determinants of liquidity levels of commercial banks included investment opportunities in real estate, government securities treasury bills, treasury bonds and infrastructure bonds) and corporate securities including commercial papers, corporate bonds and debentures. This study focused on the effects of investment options on excess liquidity of commercial banks in Kenya but did not expose the role of investment options on the fluctuations in liquidity levels of commercial banks. In addition, the study did not explore the effects of other factors like management policies and structure of loans on the liquidity levels of commercial banks.

In summary therefore, the above mentioned empirical studies established that the main preoccupation of commercial banks in the management of liquidity levels is the maintenance of their capacity to raise funds quickly from each of their investments. The studies also investigated the effects of investment strategies on the management of credit

risk, profitability and contingency plans of commercial banks. However, the studies did not establish the specific effects of investment strategies on the level of assets and liabilities held by commercial banks at any one particular time. In addition, the studies did not determine the effects of management policies and structure of loans on the liquidity levels of commercial banks listed on NSE.

2.3.2 Management Policies

In many jurisdictions across the world, banking legislation normally contains specific liquidity requirements that must be met. These regulations that ensure proper management of financial resources are generally referred to as prudential guidelines. The prudential guidelines should not be viewed as the primary method of managing risk but should be a minimum guide to the basic controls to be established by financial institutions in the management of risks. The prudential guidelines are also aimed at enhancing management of liquidity of the financial institutions and guiding the day to day fund management (Altunbas *et al.*,2009).

A savings institution should have a formal liquidity policy that wasdeveloped and written by the officials with the assistance of management.The policy should be reviewed and revised as needed, no lessthan annually. The policy should be flexible, so that managers mayreact quickly to any unforeseen events. A liquidity policy shouldspecifically state:Who is responsible for liquidity management, what is the general methodology of liquidity management, how will liquidity be monitored or, in other words, whatliquidity management tools will be used,what are the timeframes to be used in cash flow analysis, the level of detail,and the intervals at which the cash flow tools used are to beupdated (Cooperman, Mills, & Gardner, 2000).

Chisoko and Pierre (2012) sought to establish how Zimbabwe commercial banks managed liquidity risk in a hyperinflationary environment. The findings showed thatliquidity risk management during the hyperinflation was a challenge because the instruments used by theReserve Bank of Zimbabwe to fight inflation had negative effect on commercial banks asset and liabilitymanagement. In line with this, the monetary

authorities were recommended to put in place measureswhich took into consideration the impact of their policies on bank liquidity risk management when thereare problems of high inflation. The study also recommends commercial banks to take proactivemanagement measures and long term views to operations, in other words beyond the currentchallenges posed by inflation by creating new demand for their products.However, the focus of the study was management of risk in a hyperinflationary environment and not in the day-to-day operations of commercial banks.

Ashcraft(2006) recommends three mechanisms that banks can use to insure against liquidity crises: Holding buffer of liquid assets on the asset side of the balance sheet. A large enough buffer of assets such as cash, balances with central banks and other banks, debt securities issued by governments and similar securities or reverse repo trades reduce the probability that liquidity demands threaten the viability of the bank. Second mechanism is connected with the liability side of the balance sheet where banks can rely on the interbank market where they borrow from other banks in case of liquidity demand. Third mechanismconcerns the liability side of the balance sheet, as well where the central bank typically acts as a lender of last resort to provide emergency liquidity assistance to particular illiquid institutions and to provide aggregate liquidity in case of a system-wide shortage. However, the three mechanisms guards against liquidity crises but are not a solution to maintenance of adequate levels of liquidity on a day to day basis.

Mayank and Mishra (2012) in their study of the emerging trend of changing liquidity and liquidity risk management in Indian banking industry recommended that banks shouldhave a formal contingency plan of policies and proceduresto use as a blueprint in the event the bank is unable to fundsome or all of its activities in a timely manner and at areasonable cost. Indeed, industry experts generally agree that thesecrises tend to develop very rapidly. The researchers held that comprehensivecontingency funding plan can provide a useful frameworkfor meeting both temporary and long-range liquidity disruptions of commercial banks. However, this study confirmed the importance of contingency plans in liquidity management but did not explore other forms of management policies that would also contribute to attainment of adequate liquidity levels among the commercial banks listed on NSE.

Loo (2007) conducted a survey of the effects of liquidity management approaches on the profitability of commercial banks in Kenya. The findings indicated that there existed various liquidity management approaches ranging from authorized sources of liquid assets, authorized channels of investment, limits of loans, limits of borrowings and general controls on liquid assets of commercial banks in Kenya. This study suggested that the flexibility, inclusivity and communication of the management approaches have effects on profitability of commercial banks. The findings indicated that the policy should establish minimums and maximums for totalcash assets and for the amount to be kept on-site and how often decisions about liquidity should be reviewed,including: assumptions used to develop the cash flow budget,the minimum cash requirement as described in daily cashforecasting, and any of the established ratio targets. This study was preoccupied with delivery of targeted profits through proper liquidity management. In addition, liquidity decisions need to be made rapidly to avoid acrisis; therefore the liquidity manager should have someauthority. This authority should have limits; for example,another signature should be required for unusually largetransactions. If liquid funds are not invested in anotherfinancial institution or other type of investment, then thereshould be very specific policies on how excess funds are to behandled, such as who has access to them and where they areto be kept(Cooperman, Mills, & Gardner, 2000).

The management policies should also address the question of which assets are considered to be liquid and the established limits for the maximum amount to be investedin any one bank, to limit exposure to a bank failure.Senior management should develop a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance and to ensure that the bank maintains sufficient liquidity. They should also continuously review information on the bank's liquidity developments and report to the board of directors on a regular basis. In other words, a bank's board of directors should review and approve the strategy; policies and practices related to the management of liquidity at least annually and ensure that senior management manages liquidity risk effectively. Lastly, the policy should stipulate who may access or establish a line of credit for short-termliquidity needs and what are acceptable reasons or scenarios for accessing theline of credit(Gorton & Winton, 2000).However, the study identified the liquidity management

approaches that would assure commercial banks of the targeted profits but did not explore other mechanisms like appropriate investment decisions and a balanced portfolio of loans.

In summary therefore, the empirical studies indicated that management policies ranged from authorized sources of liquid assets, limits of loans, limits of borrowings and general controls on liquid assets. The policies were evaluated in relation to their effects on managing crises like hyperinflation and their contributions to profitability levels. However, the studies did not evaluate the specific effects of management policies on the liquidity levels of commercial banks.

2.3.3 Structure of Loans

The structure of loans refers to whether loans are short, medium or long term. A substantial proportion of liquidity is required when a higher portion of the loans are long term loans (Mervyn, 2010).Aikaeli (2006) investigated the determinants of excess liquidity in Tanzanian commercial banks. The findings indicated that high cost of funds, credit risks, volatility of deposit holders' cash preference, and the rate of required reserves perpetuated accumulation of excess liquidity in commercial banks in Tanzania. The main determinant of excess liquidity in Tanzania commercial banks was identified as the high interest on loans which made potential investors to shy away from borrowing from the commercial banks. Indeed, these empirical findings and conclusions had important policy implications on price stability, risks minimization, proper supervision and optimal liquidity management by the commercial banks in Tanzania.

Berger and Udell (2006)explored how bank characteristics and the institutional environment influence the composition of banks' loan portfolios. In this study, the researchers sought to establish the determinants of the composition of banks' loan portfolios for 220 banks in 20 transition countries. The study revealed that bank ownership, bank size, and legal creditor protection were important determinants of the composition of banks' loan portfolios. In addition, commercial banks that perceived pledge and mortgage laws to be of high quality chose to focus more on mortgage lending.

The study recommended that prudent risk selection is vital to maintaining favorable loan quality. In addition, the findings proposed that management must have established the following tostrengthen the management of loans portfolios: Short and long-term minimum capital or equity to total assets goal ratios, the maximum percentage of assets to be held by any oneclient, in different types of loans and investments, in fixedrateinvestments and loans with a maturity greater than oneyear, and invested in fixed assets. Other minimum standards in management of loans include: Thedesired diversification of savings and deposits to eliminate potential concentration risk (having too much in anyone type of deposit or with any one client) and the maximum maturities for all types of loans, investments, anddeposits(Berger & Udell, 2006).This study emphasized the need to guard against bad debts in the creation of loan portfolios as a means of attaining adequate liquidity levels. However, the study did not provide an insight on the effects of each type of loan on the overall liquidity of commercial banks.

Akeyo (2010) investigated the relationship between interest rates and liquidity of companies listed at Nairobi Securities Exchange. This study confirmed the earlier findings of Kinyu (2009) and Muchil (2010); that the liquidity of companies was determined by management policies, investment plans, and nature of business operations, nature of industry, types of financial obligations and the background of managers employed by the corporate entity. However, the findings indicated that the main determinant was not the prevailing economic conditions as held by Muchil (2009). Instead, Akeyo (2010) observed that the main determinant of liquidity levels of organizations was the investment strategy of the firm.The findings supported the need to establish fixed or variable interest rate loans and deposits as a pricing strategy for loans and savings products that arebased on what it actually costs to offer the products andwhat the local market will bear. However, the study did not explore the role played by the structure of loans in determining the liquidity of companies listed on NSE.

In summary therefore, the above mentioned empirical studies established that the loan structure decisions of commercial banks affected the size of loan portfolios, the desired diversification of savings and deposits and the maximum maturities for all types of loans,

investments anddeposits. However, the findings did not investigate the specific effects of the size and nature of loan portfolios to the liquidity levels of commercial banks.

2.3.4 Monetary Policy

Monetary policy refers to the actions of the Central Bank to regulate the money supply which could be through discretional monetary policy instruments such as the open market operation (OMO), discount rate, reserve requirement, moral suasion, direct control of banking system credit, and direct regulation of interest rate. Monetary policy is one of the principal economic management tools that governments use to shape economic performance (Loayza, and Schmidt-hebbel, 2002).

Amidu (2006) assessed the link between monetary policy and bank lending behaviour in Ghana and established that for monetary policy to operate through a credit channel, not only must there be bank dependent borrowers, but monetary policy must also directly affect banks'willingness to lend. Kimani (2013) assessed the effects of monetary policy on lending behaviour of commercial banks in Kenya. She established that monetary policy objectives are concerned with the management of multiple monetary targets among them price stability, promotion of growth, achieving full employment, smoothing the business cycle, preventing financial crises, stabilizing long-term interest rates and the real exchange rate. She also found out that in Kenya, emphasis of monetary policy is usually on maintaining price stability or ensuring low inflation rates. She also concluded that the effectiveness of monetary policy on the real economy is still an issue under intense debate particularly related to the efficacy of the transmission. The above mentioned studies show that the effect of monetary policy on liquidity of a commercial bank is dependent on the nature of the monetary policy and the response that commercial banks exhibit in terms of their investment strategies, management policies and structure of loans.

2.4 Summary and Research Gap

The theoretical review has indicated that the amount of funds held by organizations can be explained by the motives of holding the cash balances, the existing mechanisms of

pricing loans, the conditions prevailing in the credit market and the competing forces of demand and supply for loanable funds. However, in real situations the liquidity levels of commercial banks in Kenya are not uniform and therefore there is still need to understand the reason behind the disparities. This presents a research gap on how various factors such as investment practices adopted by a bank, the managerial policy and structure of loans affect liquidity levels of banks. Based on the fact that investment strategies, managerial policy and structure of loans are internal variables, what are their effects on liquidity management in commercial banks?

The existing empirical findings sought to establish the determinants of liquidity levels of different types of organizations and generally indicated that management policy, investment plan, structure of loans and investment options for the public in the capital and money markets have an influence on the liquidity level of organizations including commercial banks. However, the existing empirical studies had either investigated the effects of various determinants on an assortment of companies from various industries listed at NSE or fon a single commercial bank rather than a cross section of commercial banks. Furthermore, some of the findings could be outdated due to changes in the regulatory framework requireng commercial bank to hold higher levels of liquidity in addition to other raft of measures influencing decision making at commercial banks. This creates a research gap that the study sought to fill. This was achieved by investigating the factors, other than monetary policy, which affect the liquidity levels of commercial banks listed on Nairobi Securities Exchange.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on the research design, the study area, target population, sample size and sampling procedure, data types and data collection methods, validity and reliability checks, data analysis and data presentation methods and closes with the contributions of the study.

3.1 Research Design

This study employed a cross-sectional survey design and correlational design. Orodho (2003) points out that the cross-sectional survey design can be used when collecting information about peoples' attitudes, opinions, habits or any of the variety of education and social issues. Orodho (2005) holds that the cross sectional survey design describes the state of affairs as it exists by use of statistical figures and it isused when collecting information about the relationship of values of two related variables (Kombo & Tromp, 2006). The defining feature of a cross-sectional study is that it can compare different population groups at a single point in time. The benefit of a cross-sectional study design is that it allows researchers to compare many different cases at the same time. In this study the ten banks listed on the NSE were all used. By the virtue of assessing relationship between the variables; independent variables (investment strategies, management policies and structure of loans) on the dependent variable (liquidity levels) correlational was also adopted.

3.2 Study Area

The ideal setting for any study is one where a researcher has interest in, one which is easily accessible and one that allows the researcher's immediate rapport with the respondents (Kombo & Tromp, 2006). The study was carried out in Nairobi County, Kenya where the commercial banks had their administrative headquarters and the head

offices for the assets and liabilities departments that dealt with the liquidity management activities. Spefically, the study was conducted within three major locations: the Nairobi Central Business District, the Upperhill Area and Westlands where all banks had their headquarters.

3.3 Target Population

This study targeted the Divisional and Departmental managers who deal with liquidity management. They were 254 managers of the 10 commercial banks listed in the NSEas the respondents. The listed commercial banks wereStandard Chartered Bank, CFC Stanbic Bank, Cooperative Bank of Kenya,Diamond Trust Bank, Kenya Commercial Bank, NIC Bank, Equity Bank, Barclays Bank, I & M Holdingsand National Bank of Kenya.

3.4 Sampling Frame

The sampling frame was as illustrated in the table below:

Table 3.1: Sampling Frame

	Target Population	
Population Category	**Divisional Managers**	**Departmental Managers**
Barclays Bank of Kenya Limited	6	18
CFC Stanbic Bank Kenya Limited	4	12
Diamond Trust Bank Kenya Limited	4	14
Kenya Commercial Bank Limited	8	25
National Bank of Kenya Limited	8	24
NIC Bank Kenya Limited	5	20
Standard Chartered Bank Kenya Limited	4	18
Equity Bank Kenya Limited	8	22
Cooperative Bank of Kenya Limited	6	20
I & M HoldingsKenya Limited	3	16
Totals	**56**	**189**

Source: (Kenya Bankers Association, 2014)

3.5 Sampling Technique and Sample Size

The study employed stratified random sampling technique to select respondents from the10 commercial banks listed on Nairobi Securities Exchange.In order to select a wide representation of the managers from the listed commercial banks, the sample size was made up of at least a third of each category of the population stratum. Mugenda & Mugenda (1999) holds that a sample size of at least 10% is an adequate representation of the target population. In this study a sample size of 30% of the target population was selected as illustrated in the table below:

Table 3.2: Target Population and Sample Size

Respondent Category	Target Population	Sample Size	Percentage
Divisional Managers	56	17	30%
Departmental Managers	189	57	30%
TOTAL	**245**	**74**	**30%**

3.6 Data Collection

3.6.1 Sources and Type of Data

The study used primary and secondary data. The research permit was sought from the heads of Corporate Affairs of the respective commercial banks. Primary data was collected by use of a semi-structured research questionnaire (Appendix III) while secondary data was collected from published audited financial statements and websites commercial banks and Central Bank of Kenya.

3.6.2 Data Collection Procedure

Due to the nature of the respondents, the questionnaires were dropped to the respondents by the researcher. This ensured that the respondents were informed of the purpose of the study and assured of the confidentiality involved in the study. In order to increase the response rate, the respondents were reminded to complete the questionnaires via telephone calls and physical visits were made to pick the questionnaires.

3.6.3 Instrument for Data Collection

The instrument for data collection was questionnaires for primary data. The questionnaire was used because it provides reliable, valid and theoretically satisfactory results in cases where the respondents have first-hand information on a phenomenon (Orodho, 2006). Secondary data was collected from websites, publications and audited financial reports.

3.6.4 Reliability Test for Data Collection Instrument

The reliability test of the research instrument was done by use of the Test-retest method. Mugenda & Mugenda (1999) hold that the test-retest method is the simplest way of testing the stability and reliability of a research instrument over time. The test-retest coefficient was a measure of how consistent the results of the the test and those of the retest were correlated. Of the 74 respondnets,10 respondnets were used for pretesing and thus were not used in the final sample.A correlation factor of 0.9 and greater was considered excellent reliability, between 0.9 and 0.8 was considered good reliability while a correlation of between 0.8 and 0.7 was acceptable reliability. Test retest method had a correlation factor of 0.782 which was considered acceptable.

3.6.5 Validity Test for Data Collection Instrument

Validity is the degree to which results obtained from the analysis of the data actually represents the phenomena under study(Mugenda & Mugenda, 1999). The researcher checked the face validity of the research instrument by evaluating the logical sequence of the questions. Content validity was tested by ascertaining the representativeness of the questions in relation to the universe of questions that could have been asked on the variables of the study.

3.7 Data Analysis

Simple descriptive statistics including the mean and standard deviation was used to summarize the findings from the questionnaires. Multiple regression analysis was used to establish relationships between the independent variables and the dependent variable of the study. The Statistical Package for Social Sciences (SPSS) computer programme was used to derive the descriptive statistics, and regression coefficients. In order to establish the relationship between the dependent and independent variables, the following multiple regression model was used:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon \qquad \varepsilon \sim N(0, \sigma^2) \qquad (3.1)$$

Where:Y =Liquidity differential (Bank liquidity ratio – statutory liquidity ratio); $\beta 0$ = Constant Term; $\beta 1$, $\beta 2$and $\beta 3$= Beta coefficients; X1= Average Score on Investment Strategies; X2= Average Score on Management Policies; X3= Average Score on Structure of Loans; ε = Error term

3.8 Data Presentation

The findings of the study were presented according to the findings on each research question. Frequency tables, graphs and charts were used to present the findings of the study.

3.9 Contribution of Study

Academic and business researchers can borrow from the findings of this research to support literary citations as well as develop themes for further research. Policy makers, including the Central Bank of Kenya and the Kenya Bankers Association, can come up with universally applicable policies to govern the liquidity levels of commercial banks. Lastly, the management teams of commercial banks can use the findings of this study to improve the management of liquidity levels among commercial banks in Kenya.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings and results of the study. The study utilized data from 52 out of 64 respondents set out in the sample size. This represented an 81% response rate which is considered adequate.

4.2 Social demographic Characteristics of the respondents

Various demographic data are relevant to the study topic of this research. The Level of education, work experience and role in the organization structure. This variables have an effect on the reliability of data collected.

4.2.1 Education Levels

All respondents to this study had at least an undergraduate level of education. Whereas 28.8% had an undergraduate level of education, 71.2% had a postgraduate level of education. This meant that most respondents could understand the terms in the questionnaire with relative ease.

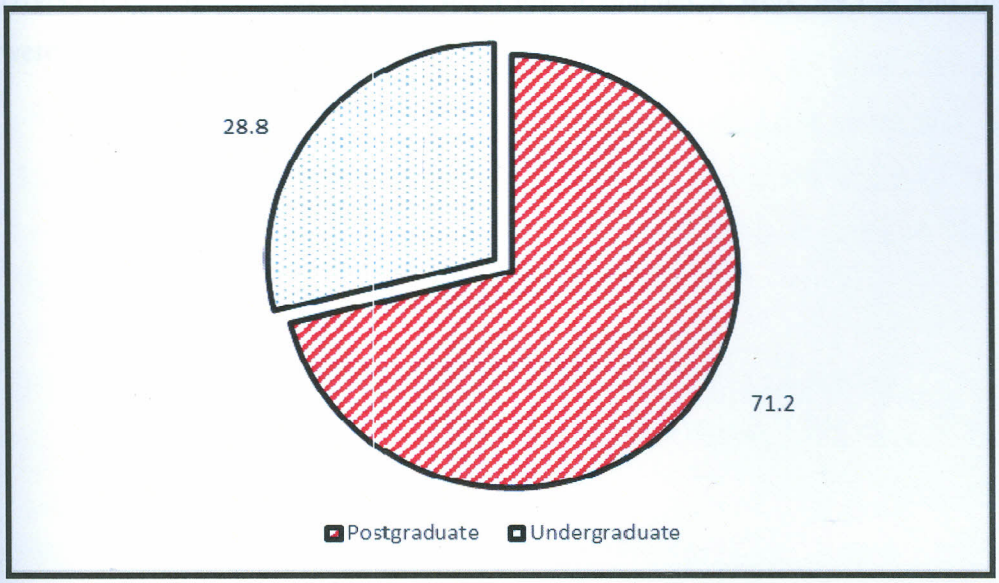


Figure 4.1: Education Levels

4.2.2 Work Experience

All the respondents to this study had worked in the banks for more than 6 years indicating that they had high levels of experience. This enhanced the reliability of data collected due to familiarity with the concepts. 34.6% had worked in the banks for between 6 – 10 years, 36.5% had worked for 11 – 15 years and 28.8% had worked in the banks for above 16 years.

Table 4.3: Work Experience

	Frequency	Percent
6 - 10 Years	18	34.6
11 - 15 Years	19	36.5
above 16 Years	15	28.8
Total	**52**	**100.0**

Source: Survey Data (2015)

4.2.3 Role of respondents

All the respondents in this study were managers in the banks indicating that they were involved in liquidity management. This enhances the reliability of the findings as it is drawn from individuals with experience and interaction with liquidity management. Division managers were 13.5%, department managers were 44.2% and line managers were 42.3%.

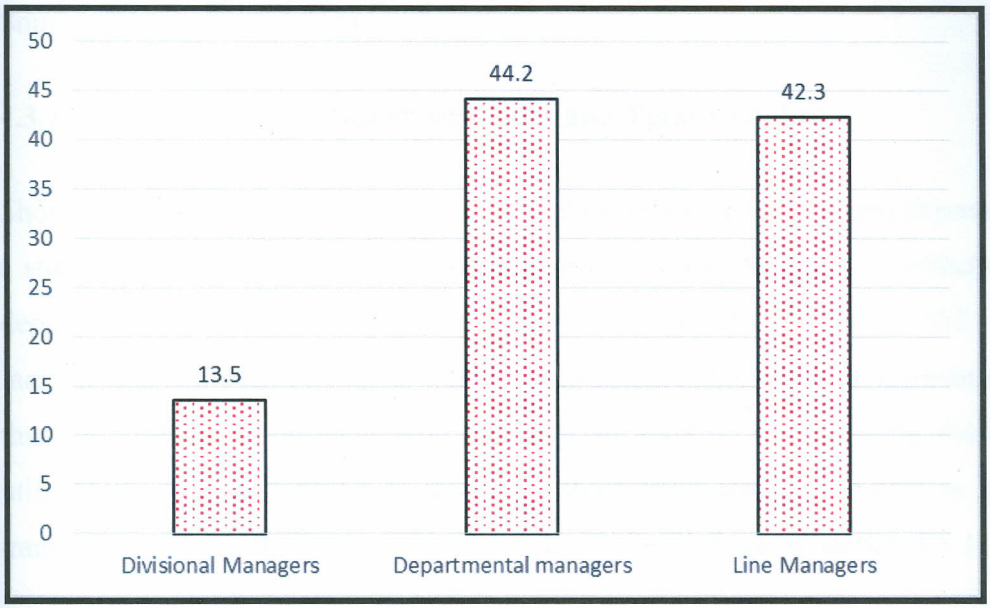


Figure 4.2: Role of Respondents

4.3 Investment Strategies and Liquidity Levels

4.3.1 Long-term Investment Strategies and Total Liabilities

The section investigated the effect of long term investment strategies on total liabilities of the commercial banks. According to the study, long term investment strategies had the highest effect on long term deposits (1.44) and had the least variation amongst the banks (0.916). Long term investments had a high effect on midterm deposits (2.23) with a standard deviation of 1.041. The least affected short term liability was short term deposits (2.92) with a standard deviation of 1.281. The findings imply that long term investments affected long term deposits the most amongst the commercial banks being an indicator that long term deposits were used for long term investment strategies. The findings further indicate that there was matching of liabilites and assets of banks. Banks matched their long term liabilities with their long term assets. This is deduced from the various effects of liabilites to assets.

Table 4.4: Long Term Investment Strategies and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
Long term deposits	52	1	4	1.44	0.916
midterm deposits	52	1	5	2.23	1.041
short term deposits	52	1	5	2.92	1.281

Source: Survey Data (2015)

4.3.2 Short-term Investment Strategies and Total Liabilities

Short term investment strategies had the highest impact on short term deposits (1.77) with a standard deviation of 0.921. Short term investments had the least effect on long term deposits with a mean rating of 2.92 and a standard deviation of 1.355. The findings indicate that short term deposits were used to finance short term investment strategies and thus the high effect on short term liquidity. In addiiton, this fiinding shows that banks utilized short term liabilites to invest in short term assets as a way to hedge against transaction risks in the banks. This is similar to the findings of section 4.4.1.

Table 4.5: Short Term Investment Strategies and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
Long term deposits	52	1	5	2.92	1.355
mid-term deposits	52	1	4	2.44	0.752
short term deposits	52	1	4	1.77	0.921

Source: Survey Data (2015)

4.3.3 Offshore Investment Strategies and Total Liabilities

Off shore investment strategies had an average effect on long term deposits (2.65), medium term deposits (2.62) and short term deposits (2.77). The variance amongst the effect of offshore investment strategies on liabilities was also almost uniform; long term deposits (1.046), medium term deposits (1.051) and short term deposits (1.381). The findings indicate that offshore investment strategies were financed from a mixture of long term, short term and medium term deposits. From the findings it can also be deduced that banks utilized short term liabilities to invest in offshore investment strategies. After the use of short term liabilites, the banks utilized mid term deposits and later long term deposits. This therefore shows that banks used a step approach to finacing offshore investment strategies by preferrign short term deposits, mid term liabilites and long term liabilites in their descending order of preference respectively.

Table 4.6: Offshore Investment Strategies and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
Long term deposits	52	1	5	2.65	1.046
mid-term deposits	52	1	5	2.62	1.051
short term deposits	52	1	5	2.77	1.381

Source: Survey Data (2015)

4.3.4 Short Term Investment Strategies and Liquid Assets

Short term investment strategies had the highest effect on overdrafts with a mean rating of 2.15 and a standard deviation of 0.978. Further, short term investment strategies had a diminishing effect on liquid assets in their descending order: unsecured loans (2.38), discounting of invoices (2.40) and bills of exchange (2.60). The minimum rating for each of the short term investment strategies was 1 while the maximum for unsecured loans was 5 and 4 for bills of exchange, discounting of invoices and overdrafts. The standard deviation shows the variance of the ratings away from the mean and shows that unsecured loans had the highest variation from the mean with 1.157, bills of exchange had a variation of 1.125, discountign of invoices (1.034) and overdrafts (.978). The findings show that there was no major variances on the effect of short term investment strategies on liquid assets. Nevertheless the effect of short term investment strategies on liquid assets was high. Consequently, the findings imply that short term investment strategies were linked to highly liquid assets.

Table 4.7: Short Term Investment Strategies and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
Unsecured loans	52	1	5	2.38	1.157
Bills of exchange	52	1	4	2.6	1.125
Discounting of invoices	52	1	4	2.4	1.034
Overdrafts	52	1	4	2.15	0.978

Source: Survey Data (2015)

4.3.5 Long-term Investment Strategies and Liquid Assets

Long term investment strategies had a moderate effect on liquid assets. In their descending order, long term investment strategies had an effect on unsecured loans (2.63), bills of exchange (3.00), discounting of invoices (3.06) and overdrafts (3.15). The variance of the variables from the mean was highest in overdrafts (1.274), unsecured loans (1.221), bills of exchange (1.221) and discounting of invoices (1.211). Generally, the findings imply that there were no major variances in the effect of long term investment strategies on liquid assets and that long term investment strategies had a moderate effect on liquid assets. Consequently, long term investment strategies were not largely linked or matched to liquid assets.

Table 4.8: Long Term Investment Strategies and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviati
Unsecured loans	52	1	5	2.63	1.221
bills of exchange	52	1	5	3.00	1.221
discounting of invoices	52	1	5	3.06	1.211
Overdrafts	52	1	5	3.15	1.274

Source: Survey Data (2015)

4.3.6 Offshore investment Strategies and Liquid Assets

The effect of offshore investment strategies on liquid assets was moderate overall. The effect of offshore investment strategies on liquid assets ranged from a high of 3.17 for bills of exchange and discounting of invoices respective to 3.44 for unsecured loans. The effect on overdrafts was 3.29. In addition, the mean ratign for the four variables was 1 and the maximum 5. The variance in the findings was highest in unecured loans (1.178), bills of exchange (1.024), and discounting of invoices (0.985) respectively. Generally, the findings indicate that the effect of offshore investment strategies on liquid assets was moderate. Therefore, the findings of this study imply that offshore investment strategies

were not linked to liquid assets. This means that liquid assets were not utilized to finance or match offshore investment strategies.

Table 4.9: Offshore Investment Strategies and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	5	3.44	1.178
bills of exchange	52	1	5	3.17	1.024
discounting of invoices	52	1	5	3.17	0.985
Overdrafts	52	1	5	3.29	1.016

Source: Survey Data (2015)

4.3.7 Discussion of Results

Findings of the investment strategies show that investment strategies have an influence on the level of liquidity and liquidity management in commercial banks. Short term investment strategies have a high effect on short term deposits and short term loans. On the other hand, long term investment strategies have a high effect on long term deposits and long term loans. This indicates that banks adopt a matching approach for investment strategies and liquidity management.

This is similar to the conclusions of Kithinji (2010) who noted that banks should actively manage their internal liquidity positions through manage its collateral positions, differentiating between encumbered and unencumbered assets and monitor the legal entity and physical location where collateral is held and how it may be mobilized in a timely manner. Basically, Kithinji (2010) noted that matching of assets and liabilities was key. This was similar to the conclusions of Gorton and Winton (2000) in their study where they noted matching of assets and revenues durations as a key strategy towards liquidity management in commercial banks. Odongo (2008) also recommended that banks must match their assets and liabilities durations in his study on the effects of liquidity levels on the stock returns of companies listed at Nairobi Securities Exchange. According to Odongo (2008) in view of the risks and returns in the market, it is important that companies match their liabilities and assets to enhancing liquidity management.

Masuku (2014) had similar findings to those of this study. Masuku (2014) found that some of the factors that influenced excess liquidity in listed banks was the availability of investment options and the investment strategies of the banks.

4.4 Management Policies and Liquidity Levels

4.4.1 Internal Liquidity Buffer Policy and Total Liabilities

Internal liquidity buffer policy had a very high effect on mid-term (1.82) and short term deposits (1.62) with very few variations amongst the listed commercial banks. In addition, internal liquidity buffer policy had a high effect on long term deposits (2.56) which had a high variation amongst the banks. There was high variations in the effect of internal liquidty buffer policy on long term deposits (1.259), mid term deposits (0.758) and short term deposits (0.690). The findings imply that in most commercial banks internal liquidity buffer policy affected short term deposits, mid-term deposits and long term deposits in their descending order respectively. Consequently, it can be deduced that managerial action and policies in regard to internal liquidity buffers was largely aimed at promoting short term liquidity.

Table 4.10: Internal Liquidity Buffer and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	5	2.56	1.259
mid-term deposits	52	1	4	1.88	0.758
short term deposits	52	1	3	1.62	0.69

Source: Survey Data (2015)

4.4.2 Loan Deposit Ratio Policy and Total Liabilities

The loan deposit policy had the highest effect on mid-term deposits (1.90) with a standard deviation of 0.693 indicating that the variance amongst the banks in the effect on mid-term deposits was minimal compared to other liabilities. The effect was least in long term and short term deposits at 2.02 although the variance was slightly higher in long term deposits (0.939) than in short term deposits (0.693). Nevertheless, loan deposit ratio had a high effect on total liabilities. This findings imply that the managerial policies

and actions in relation to loan deposits were aimed at managing the medium term deposits. Nevertheless, lona deposit ratios policy were also utilized to manage short term and long term deposits though at a lower level of importance.

Table 4.11: Loan Deposit Policy and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	4	2.02	0.939
mid-term deposits	52	1	4	1.9	0.693
short term deposits	52	1	4	2.02	0.828

Source: Survey Data (2015)

4.4.3 Contingency Plan Policy and Total Liabilities

Contingency plan policy had a high effect on mid-term deposits (2.48), short term deposits (2.52) and long term deposits (2.58). The variance on the effect across the banks was highest in short term deposits (1.244) and lowest in mid-term deposits (0.980). The findings show that contingency plan policy had a high effect on total liabilities of the commercial banks. Consequently, this findings show that managerial contigency policies were aimed at managing the mid term deposits. In addiiton, the contigency plan policy was also aimed at managing long term deposits and short term deposits.

Table 4.12: Contingency Plan Policy and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	5	2.58	1.242
mid-term deposits	52	1	4	2.48	0.98
short term deposits	52	1	5	2.52	1.244

Source: Survey Data (2015)

4.4.4 Internal Liquidity Buffer Policy and Liquid Assets

The internal liquidity buffer policy had a high effect on overdrafts (2.08), unsecured loans (2.19), invoice discounting (2.27) and bills of exchange (2.50). The variance in the effect across the commercial banks was least in invoice discounting (0.866) and highest

in unsecured loans (1.067). The findings show that internal liquidity buffer policy had a high impact on all liquid assets but had the highest impact on overdrafts and unsecured loans.

Table 4.13: Internal Liquidity Buffer Policy and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	4	2.19	1.067
Bills of exchange	52	1	4	2.5	0.96
invoice discounting	52	1	4	2.27	0.866
Overdrafts	52	1	4	2.08	0.926

Source: Survey Data (2015)

4.4.5 Loan Deposit Ratio Policy and Liquid Assets

The effect of loan deposit ratio policy was highest in unsecured loans (2.10), overdrafts (2.17) and discounting of invoices (2.31). The effect on bills of exchange was least (2.40). On the other hand, variances between impacts on difference banks was highest in bills of exchange (0.995) and lowest in overdrafts (0.857). The findings imply that loan deposit ratio policy had a very high effect on unsecured loans and overdrafts in comparison to other liquid assets.

Table 4.14: Loan Deposit Ratio Policy and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	5	2.1	0.891
bills of exchange	52	1	5	2.4	0.995
discounting of invoices	52	1	4	2.31	0.919
Overdrafts	52	1	4	2.17	0.857

Source: Survey Data (2015)

4.4.6 Contingency Plan Policy and Liquid Assets

The overall effect of contingency plan policy was high on liquid assets. Nevertheless, the effect was highest in unsecured loans (2.42), discounting of invoices (2.63), bills of exchange (2.67) and overdrafts (2.73). The variances on the effect across commercial banks was high ranging between 0.923 for bills of exchange and 1.087 for overdrafts.

The findings show that contingency plan policy had a high effect on all the liquid assets. In addition, the study shows that contigency plans and policies were utilized to manage other liquid assets since their mean rating was very high. Consequently, contigency plans and policies constituted management of unsecured loans, bills of exchange, discounting of invoices and overdrafts.

Table 4.15: Contingency Plan Policy and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	4	2.42	1.016
bills of exchange	52	1	4	2.67	0.923
discounting of invoices	52	1	4	2.63	0.971
Overdrafts	**52**	**1**	**5**	**2.73**	**1.087**

Source: Survey Data (2015)

4.4.7 Discussion of Findings

This study found that managerial policies have an effect on liquidity management of listed commercial banks in Kenya. According to the study, internal liquidity buffer policy was a tool to manage short term liquidity for the bank due to its high effect on short term deposits and assets. On the other hand, contingency liquidity management policy was a medium term management policy which matched medium term assets and liabilities. Finally, loan deposits policy is a tool for long term liquidity management. The findings show that managers in listed commercial banks utilized different managerial policies for different liquidity management plans.

Similar to the findings of this study, Ashcraft (2006) recommended that banks use three different mechanisms for their liquidity management plans. This includes holding adequate buffers for liquid assets for internal purposes which is similar to internal liquidity management. Second mechanism is connected with the liability side of the balance sheet where banks can rely on the interbank market where they borrow from other banks in case of liquidity demand similar to the contingency plan identified in this study. Third mechanism concerns the liability side of the balance sheet, as well where the central bank typically acts as a lender of last resort to provide emergency liquidity

assistance to particular illiquid institutions and to provide aggregate liquidity in case of a system-wide shortage which is similar to long term loan management policy.

Similar findings and plans were identified by Mayank and Mishra (2012) who found that Indian banking industry recommended that banks shouldhave a formal contingency plan of policies and proceduresto use as a blueprint in the event the bank is unable to fundsome or all of its activities in a timely manner and at areasonable cost. A contingency plan policy was also identified in this study. Other scholars with similar or related findings included Loo (2007) who identified that banks should have different strategies to manage short term, long term and medium term liquidity. This was also recommended in the study by Cooperman, Mills and Gardener (2000).

4.5 Structure of Loans and Liquidity Levels

4.5.1 Short Term Loans and Total Liabilities

According to respondents in this study, short term loans have very high effect on short term deposits (1.90) with a variance of 0.934. In addition, short term loans had a high effect on mid-term deposits (2.21) and long term deposits (2.60). The findings show that short term loans had a high effect on total liabilities but had the highest effect on short term deposits. This could indicate that short term loans were financed using short term liabilities.

Table 4.16: Short Term Loans and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
Long term deposits	52	1	5	2.6	1.192
mid-term deposits	52	1	4	2.21	0.915
short term deposits	52	1	4	1.9	0.934

Source: Survey Data (2015)

4.5.2 Medium Term Loans and Total Liabilities

Medium term loans had the highest effect on mid-term deposits with a mean of 2.06 and a corresponding standard deviation of 0.916. The second highest effect of medium term loans was on long term deposits with a mean rating of 2.17. The least affected liability

was short term deposits with a mean of 2.23 with a standard deviation of 1.231 which indicated that the impact varied most in short term deposits across the banks.

Table 4.17: Medium Term Loans and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	5	2.17	1.216
mid-term deposits	52	1	4	2.06	0.916
short term deposits	52	1	5	2.23	1.231

Source: Survey Data (2015)

4.5.3 Long Term Loans and Total Liabilities

The effect of long term loans was highest on long term deposits with a mean rating of 1.90 and standard deviation of 0.955. In addition, long term loans affected mid-term loans to a high extent with a mean rating of 2.31 while short term deposits were also affected to a high extent (2.67) though it was the least. In addition, the effect of long term loans on liabilities varied most on short term deposits for the commercial banks. The findings show that long term loans had a high effect on total liabilities and highest on long term deposits. This could be due to the matching of liabilities and assets for the banks.

Table 4.18: Long Term Loans and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	4	1.9	0.955
mid-term deposits	52	1	4	2.31	0.805
short term deposits	52	1	5	2.67	1.15

Source: Survey Data (2015)

4.5.4 Short Term Loans and Liquid Assets

Short term loans had the highest effect on discounting of invoices with a mean rating of 2.19. In addition, short term loans affected bills of exchange to a high extent with a mean rating of 2.37 and unsecured loans to a high extent with a mean rating of 2.42. The findings imply that short term loans had a high effect on liquid assets though the effect

was highest on discounting of invoices which was the most liquid asset for the bank. This could therefore indicate that most short term loans were matched to short term assets for liquidity purposes.

Table 4.19: Short Term Loans and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	4	2.42	1.054
bills of exchange	52	1	5	2.37	1.103
discounting of invoices	52	1	4	2.19	0.864

Source: Survey Data (2015)

4.5.5 Medium Term Loans and Liquid Assets

The effect of medium term loans on liquid assets was high for most liquid assets. It was highest on overdrafts (2.35), discounting of invoices (2.38), unsecured loans (2.44) and bills of exchange (2.54) respectively. The findings show that medium term loans had a high effect on liquid assets. Nevertheless, the effect was highest on the most liquid assets (overdrafts). The findings indicate that the matching of liabilities to assets was done on a preferential order from the most liquid to the least liquid.

Table 4.20: Medium Term Loans and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	4	2.44	0.938
Bills of Exchange	52	1	5	2.54	1.093
Discounting of Invoices	52	1	4	2.38	0.953
Overdrafts	52	1	4	2.35	1.064

Source: Survey Data (2015)

4.5.6 Long Term Loans and Liquid Assets

Long term loans had the highest on overdrafts (2.71), discounting of invoices (2.83), unsecured loans (2.85) and bills of exchange (2.92) in their descending order respectively. The findings show that there was high variance across the bank responses

on the effect especially on overdrafts (1.194) and bills of exchange (1.250). Nevertheless, the findings reinforce the findings in the subsection above that most banks utilized a preferential order in matching of long term loans to liquid assets from the most liquid to the least liquid.

Table 4.21: Long Term Loans and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	5	2.85	1.055
Bills of Exchange	52	1	5	2.92	1.25
Discounting of Invoices	52	1	5	2.83	1.08
Overdrafts	**52**	**1**	**5**	**2.71**	**1.194**

Source: Survey Data (2015)

4.5.7 Discussion of Findings

This study found that the structure of loans was an important determinant of liquidity amongst commercial banks listed in the NSE. The study found that most banks matched the structure of loans to liabilities of the commercial banks. This meant that, long term loans were matched to long term deposits and assets and short term loans were matched to short term assets and deposits. This shows that matching of the structure of loans was an important strategy for liquidity management amongst listed commercial banks.

Similar to the findings of this study, Aikeli (2006) found that commercial banks in Tanzania utilized the structure of loans to match against assets in an attempt to manage liquidity in the commercial banks. Furthermore, similar to the findings of this study Aikeli (2006) and Mervyn (2010) noted that the structure of loans was an important determinant and factor in liquidity management across commercial banks.

Berger and Udell (2006) in their study on bank characteristics and institutional environment noted that loan portfolios and structure was an important aspect in asset management and liquidity management amongst banks in transitional countries. Further Berger and Udell (2006) noted that thedesired diversification of savings and deposits to eliminate potential concentration risk (having too much in anyone type of deposit or with any one client) and the maximum maturities for all types of loans, investments,

anddeposits(Berger & Udell, 2006). This study emphasized the need to guard against bad debts in the creation of loan portfolios as a means of attaining adequate liquidity levels.

4.6 Monetary Policy and Liquidity

4.6.1 Kenya Bankers Reference Rate and Total Liabilities

The Kenya Bankers Reference (KBBR) rate had a high effect on mid-term deposits (2.67) and short term deposits (2.65). Nevertheless, the effect of the Kenya Bankers Reference rate was moderate on long term deposits (3.02). The findings show that the Kenya Bankers Reference Rate as a monetary tool has a high effect on mid-term deposits and short term deposits and a moderate effect on long term deposits. Consequently, KBBR was a tool for managing short term and mid term liabilities of the bank.

Table 4.22: KBRR and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
long term deposits	52	1	5	3.02	1.26
mid-term deposits	52	1	5	2.67	1.279
short term deposits	52	1	5	2.65	1.327

Source: Survey Data (2015)

4.6.2 Central Bank Rate and Total Liabilities

The Central Bank Rate had a high effect on long term deposits (2.67), mid-term deposits (2.02) and short term deposits (2.23). The findings show that overall the Central Bank rate had a high effect on all liabilities but was highest on mid-term liabilities. However, the variance on the commercial banks was very high across all the liabilities with a low of 1.115 for long term deposits and a high of 1.323 for short term deposits.

Table 4.23: Central Bank Rate and Total Liabilities

	N	Minimum	Maximum	Mean	Std. Deviation
Long term deposits	52	1	5	2.67	1.115
mid-term deposits	52	1	5	2.02	1.146
Short term Deposits	52	1	5	2.23	1.323

Source: Survey Data (2015)

4.6.3 Kenya Bankers Reference Rate and Liquid Assets

The Kenya Bankers Reference Rate had a high effect on unsecured loans (2.44), bills of exchange (2.81) and discounting of invoices (2.23). The findings show that the Kenya banker's reference rate had a high effect on all liquid assets and was especially highest on the most liquid assets i.e. discounting of invoices.

Table 4.24: KBRR and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
Unsecured loans	52	1	5	2.44	1.195
bills of exchange	52	1	5	2.81	1.155
discounting of invoices	52	1	5	2.23	0.983

Source: Survey Data (2015)

4.6.4 Central Bank Rate and Liquid Assets

The Central Bank rate had high effect on all liquid assets. The effect was high on unsecured loans (2.19) and lowest on bills of exchange (2.42) and discounting of invoices (2.42). The variation in the effect across banks was highest in discounting of invoices and lowest in bills of exchange as indicated by the standard deviations. The findings indicate the Central Bank rate had the highest effect on unsecured loans. The findings indicate that banks consider the central bank rate when benchmarking their unsecured loans.

Table 4.25: Central Bank Rate and Liquid Assets

	N	Minimum	Maximum	Mean	Std. Deviation
unsecured loans	52	1	5	2.19	1.121
bills of exchange	52	1	5	2.42	1.226
discounting of invoices	52	1	5	2.42	1.016

Source: Survey Data (2015)

4.7 Regression Analysis

The study sought to develop a linear model using regression analysis to establish the effect of investment strategies, structure of loans and management policies on liquidity in listed commercial banks. The model was in the form of:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \varepsilon \quad (4.1)$$

Where: Y = liquidity ratio differential (Bank liquidity – statutory liquidity) $\beta 0$ *= is a constant* $\beta 1, \beta 2, B3, B4 = Beta\ Coefficients$ *X1 = Investment strategies, X2 = Management policies, X3 = Structure of loans and* ε $represents\ an\ error\ term$

Table 4.26: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.247[a]	0.061	-0.017	3.21728

Source: Survey Data (2015)

From the model summary on Table 4.26 presents the relationship between the variables in the study. The R represents the correlation between the dependent and independent variables in the study. The correlation coefficients (0.247) indicates that there was a significant relationship between the independent variables and dependent variable. The findings show that a significant relationship exists between the managerial policy, structure of loans, investment strategies and the liquidity ratios in the commercial banks.

The R- Squared indicates the independent variables (managerial policy, structure of loans, investment strategies) account for 0.061 (6.1%) of the variation in the dependent variable (Liquidity levels) in the commericail banks. 0.0931 (93.1%) is accounted for by other factors that are attributed to monetary policy.

Analysis of variance

Table 4.27: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.242	4	8.060	.779	.005[b]
	Residual	496.844	48	10.351		
	Total	529.086	52			

Source: Survey Data (2015)

The analysis of variance in table 4.27 indicates the F- statistics of 0.779 with the P-value of 0.005.The results indicate the model is significant thus stable at both 1% and 5%.

Coefficients of variations

Table 4.28: Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	16.377	2.622		6.245	0
	Investment Strategies	0.595	2.433	0.081	0.244	0.008
	Management Policy	-1.754	0.336	-0.33	-5.22	0.006
	Structure of Loans	1.48	0.541	0.27	2.737	0.009

Source: Survey Data (2015)

From table 4.28,the coefficients of the model were positive for investment strategies (0.595) and loan structure (1.480) which was significant at 0.05 significance levels. On the other hand, the coefficients for management policy was negative (-1.754) which was significant at 0.05 significance levels. The findings show that all the variables had a significant effect on liquidity levels in commercial banks. The results show that with a one unit change in the investment strategies of the bank the liquidity levels will increase by approximately 0.595. Secondly with a one unit change in loan structure of the banks it alters liquidity levels by approximately 1.480. Lastly with one unit change in mamagement policy the liquitity levels change by -1.754. This indicates that management policy has a negative influence on the liquidity levels in the commercial banks.

The model liquidity model is :

$$Y = 16.377 + 0.595X_1 - 1.754X_2 + 1.480X_3 \quad (4.2)$$

Where: Y = *Liquidity ratio*
$X1$ = *Investment strategies*
$X2$ = *Management Policy*
$X3$ = *Structure of Loans*

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions and recommendations of the study.

5.2 Summary

The study sought to investigate the determinants of liquidity levels amongst listed commercial banks Kenya. The study specifically investigated the influence of investment strategies on liquidity levels, examined the influence of management policies on liquidity levels and analyzed the influence of loan structures on liquidity levels of commercial banks in Kenya.

The study sought to evaluate the influence of investment strategies on the liquidity levels of commercial banks listed on Nairobi Securities Exchange. The study established that investment strategies had a positive effect on the liquidity levels of commercial banks. The results show that with a one unit change in the investment strategies of the bank the liquidity levels will increase. In addition, the study found that most banks listed in the NSE undertook liabilities and assets matching for their investment strategies. This meant that long term investment strategies were primarily financed or matched with long term liabilities while short term investment strategies were financed or matched to short term liabilities. A similar approach was used for mid-term investment strategies which were matched to medium term liabilities.

The study also established that managerial policies overall had a negative influence on liquidity levels in listed commercial banks. The findings are validated by the findings that the all the managerial policies such as internal liquidity buffer policy, contingency plan policy and loan deposit ratio policy had an influence on all deposits and liabilities of the commercial banks. Nevertheless, the managerial policies were also focused on specific assets and liabilities as a liquidity management plan i.e. short term deposits and liabilities

were influenced by internal liquidity buffer policy, medium term deposits and liabilities were managed using a contingency plan policy while long term loans and deposits were managed using the loan deposit ratio policy.

The study further determine the influence of structure of loans on the liquidity levels of commercial banks listed at Nairobi Securities Exchange and found that there was a positive effect of the structure of loan effect on liquidity levels of commercial banks listed in the NSE. From the findings it was revealed that short term loans had an effect on the most liquid assets e.g. discounting of invoices and had the highest influence on short term liabilities. Similarly, medium term loans had the highest effect on medium term liabilities and deposits of commercial banks while long term loans had the highest effect on long term loans and deposits. This implies that most banks matched their liabilities to assets with their structure i.e. Length of the assets and liabilities.

5.3 Conclusions

From the summary of the findings the study concludes that the independent variable factors investment strategies and structure of loans all affect liquidity levels positively but at varying extents. However structure of loans was established to have more positive effect on liquidity levels. The study therefore concludes that most banks matched their liabilities to assets with their structure i.e. Length of the assets and liabilities. Therefore liabilities with similar structures were matched with assets of the commercial banks with similar structures.

From the study Managerial policy had an overall negative effect on liquidity levels in listed commercial banks in Kenya. Banks utilized a variety of managerial policies to manage different liabilities and assets of the commercial bank in an effort to manage liquidity. Although manegement policy had a negative effect it had the highest correlation with liquidity levels.

5.4 Recommendations

Based on the summary of the findings and conclusions, the study recomends:

i. The bank managers make investment decisions based on risk and return. This is because though liquidity management is an objective for most banks it should go hand in hand with the profitability objective of the commercial bank. Consequently, banks must undertake due diligence on their investments options to ensure that though matching is done for liquidity management, risk and returns on the investments are also taken into consideration.

ii. Managerial decision making must be made based on factual information and data rather than intuition. Banks must strengthen their data collection systems and strategies to aid in decision making especially in relation to liquidity management. This is because is because managerial policies have the highest effect on liquidity management in commercial banks. Banks must invest substantial amounts of time, resources and human capital on data collection for effective decision making on liquidity management.

iii. Banks should diversify their loan structures from merely short term, medium term and long term classes. The banks can further classify the loan structures to include very short term and very long term classes. This will enhance in better decision making and liquidity management. For example: rather than classify all deposits of loans of less than 1 year as short term, there can be classes for immediate assets (0 – 3 months) and short term assets (4 – 12 months). A similar approach should be used for deposits in the banks.

5.5 Areas of Further Research

i. The study suggest further research on other factor that determine liquity level since the findings indicated that the independent variables (managerial policy, structure of loans, investment strategies) accounted for minimal variation in the dependent variable (Liquidity levels) in the commericail banks.

ii. This study recommends further research on the impact of economic variables on liquidity management of commercial banks. While liquidity management is an internal issue for commercial banks, changes in the economic variables such as exchange rate, interest rates and inflation rates could have an effect on the

liquidity levels and management for commercial banks. What is the effect of the economic variables on liquidity management?

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