A SURVEY OF LIQUIDITY MANAGEMENT APPROACHES AND THEIR EFFECT ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

Submitted By:

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D61/P/7189/04

A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT FOR THE AWARD OF MASTERS DEGREE IN BUSINESS ADMINISTRATION (MBA) OF THE UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS STUDIES

UNIVERSITY OF NAIROBI

SEPTEMBER, 2007

Declaration

This MBA research is my original work and has not been submitted for presentation at the University of Nairobi or any other institution of higher learning

This research paper has been submitted for examination with my approval as the university supervisor.

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DEDICATION

This study is dedicated to the following people: -

My mother, Mariam Abdalla who inspired me and encouraged me to pursue further education.

My sweet caring wife Fahima, My sons Hussein and Ali and daughters Farhat and Saada for their understanding of my long absence and support they offered when I was undertaking the course

All my relatives and friends who provided me with support me when I needed them.

ACKNOWLEDGEMENT

The completion of this study would not have been possible without the invaluable contribution of my lecturer, Mr. Otieno Luther who helped to develop the research study from the initial idea to the final report.

Special thanks also go to my supervisor Mr. Martin Odipo for his ideas, criticism and encouragement during the study.

I deeply appreciate the love and understanding of my dear wife and children for their moral support and patience.

Finally, I must thank my friends in general for their invaluable contribution and in many ways towards the study. Special thanks go to all those who spared their time to respond to my questionnaire and interviews and gave some suggestions

Abbreviations

LIL - Liquidity Instability of Liability

IMF - International Monetary Fund

ALM - Asset and Liability Management

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ABSTRACT

Liquidity has been generally defined as the ability of commercial banks to fund increases in assets (advances) and meet obligations (depositors' claims) as they become due. Liquidity is of two types: Liquidity of assets and that of liability Illiquidity of assets refer to the inability to sell assets at current market prices. The liquidity instability of liability (LIL) refers to the inability to obtain sufficient funds to meet payment obligations in a timely manner (instability of deposit base over a long period of time). Banks create liquidity on the balance sheet by transforming less liquid assets into more liquid liabilities. This suggests that Banks may also create significant liquidity off the balance sheet through loan commitments and similar claims to liquid funds.

The study had the objective of identifying the liquidity management theories employed by commercial banks in Kenya and study relationship between bank liquidity management approaches and bank profitability.

The study findings reveal that the most popular theory with bankers is Commercial loan theory the next is Asset liability management theory, the evidence of use of shiftability and anticipated income theory is weak. However, there was one firm that employed a hybrid strategy i.e. anticipated and commercial loan theory. All the respondents were at senior management level with professional qualifications in banking.

From the study it is evident the most common type is commercial and industrial loans. However, consumer loans are becoming more popular. The liquidity levels seem not to depend on particular theories, again because a number of approaches are employed by a particular bank.

CHAPTER 1

1.0 INTRODUCTION

This chapter provides the general area of the research which refers to the impediments facing bank managers in Kenya. It also provides the background of the study and the problem statement hence providing the need for the research to be undertaken. The objectives of the research project are also explained together with the research questions which the researcher wishes to get answers. Finally the importance of the study and the scope expected of the study had also been covered under this chapter.

1.1 Background

Strong domestic financial systems play an important role in development and stabilization of the overall economy. The significance of the banking sector within the financial system becomes even more apparent in emerging markets like Kenya, which are highly vulnerable to economic distortions and financial crisis. Structural differences in emerging markets introduce new risks such as currency and maturity mismatch thus the bank managers have to consider a wide range of scenarios and manage their balance sheets optimally by developing an efficient management strategy. Liquidity is traditionally defined as the ability of credit institutions to fund increases in assets and meet obligations as they become due. Liquidity is at the centre of any banking system (Bindseil, 2003 *et al*).

The significance of the banking sector in the smooth and efficient functioning of the overall economy as well as the domestic financial system has become even more apparent during financial crises. Therefore, developing appropriate bank management strategies seems crucial for lowering the devastating effects of crises i.e. lowering banking risk. In any case banking risk management is both a philosophical and operational issue.

Commercial banking services are extremely important in both free and emerging market economies. Banking services serve two primary purposes. First, by supplying customers with the basic mediums-of-exchange such as cash, cheque accounts, and credit cards, commercial banks impact on the way goods and services are purchased. Checking on current accounts, because they act like cash, make it much easier to buy goods and services and therefore help both consumers and businesses, who would find it inconvenient to carry or send through the mail huge amounts of cash. In the absence of these familiar methods of payment, goods could only be exchanged by barter, which is trading one good for another. However Barter trade is time-consuming, inefficient and costly.

Banks accept money deposits from savers and then lend the money to borrowers. This encourages the flow of money to productive use and investments and in turn allows the economy to grow. Should commercial bank fail to offer such a service, savings would be idle, money would not be available to borrow, people would not be able to purchase cars or houses, and businesses would not be able to build the new factories that the economy needs to produce more goods and grow. Loans enable consumers to improve their standard of living by borrowing money to purchase cars, houses, and other expensive consumer goods that they otherwise could not afford. Loans help businesses finance plant expansion and production of new goods, and therefore increase employment and economic growth.

However, banks want borrowers repay their loans in which case the banks choose borrowers carefully and monitor performance of a company's managers (borrowers) very closely. This disciplinary role of bank loan is valuable to the shareholders of the borrowing firm. The owners (stockholders) of a company receiving a loan want their company to be profitable and managed efficiently, bankers act as surrogate monitors for stockholders who cannot be present on a regular basis to watch the company's managers.

Financial intermediation is extremely important to a free market economy because it is the back bone of loaning system. In brief, according to the theory of financial intermediation, an important role of banks in the economy is to create liquidity by funding illiquid loans with liquid demand deposits (Diamond 1984 *et al*).

The major risks that commercial banks are exposed to, include: operational risk which is the breakdown of internal controls and corporate governance; credit risk which is the possibility of defaults arising from the lack of complete agreement of the liability and the risk of the banks ownership of the assets being financed; foreign exchange risk which is a loss due to exchange rates fluctuations; market risk which arises from a change in commodity prices, in the mark-up price of deferred sale and the lease-based transactions; risk arising from non-standardized nature of some commercial banks' products, given that, some financial instruments could not be used simultaneously as risk management instruments; and liquidity risk that arises from a decline of the bank's cash flow or inability to raise resources. The focus of this study is approaches to liquidity risk management in commercial banks.

The liquidity risk is created by the mismatch of deposits and financing tenures, which generates either idle cash position or shortage of cash position. Many factors are identified in the literature as causing liquidity risk, include: the lack of confidence in the bank or the banking system as a whole due to mal-practices or mismanagement; concentration of investment in specific sector, specific investment projects, or country; reliance on few large depositors; and the use of short-term deposits in long-term investment, or the mismatch of assets and liabilities.

Liquidity is of two types: Liquidity of assets and that of liability .Illiquidity of assets refer to the inability to sell assets at current market prices. The liquidity instability of liability (LIL) refers to the inability to obtain sufficient funds to meet payment obligations in a timely manner (instability of deposit base over a long period of time). LIL is the degree to which the bank is not able to meet its payment obligations to depositors when deposits are declining or fluctuating. The liquidity gap is a function of liquidity of assets and that of liability.

Banks create liquidity on the balance sheet by transforming less liquid assets into more liquid liabilities. (Kashyap 2002 *et al*) propose that banks create significant liquidity off the balance sheet through loan obligations and claims to liquid funds.

1.1.1 Profitability of Banks

A bank exists primarily to generate a profit, that is, to take in more money than it spends. The owners can decide to keep all the profit themselves, or they can spend some or all of it on the business itself. Or, they may decide to share some of it with employees through the use of various types of compensation plans, e.g., employee profit sharing. Study shows lower operating expenses costs have improved the profitability of banks. The reduction in operating expenses promises a brighter future for the banking sector and imparts a greater level of comfort in terms of the banking sector's ability to sustain its profitability in the future. , the profitability improvement can be because of the increase in income and not due to any material reduction in operating expenses.

As the heavy burden of the bad loans has been somewhat lifted, banks are now working towards the longer-term goal of recovering their profitability and looking ahead and defining new goals through the analysis of the banks financial statements in order to examine the perspectives of profits, bad loans, and capital adequacy. Finally, the analysis of the lending market to understand the current situation of the lending business this is their core sources of profit and the measures towards meeting their new goals of improving profitability.

The increasing competition in the national and international banking markets and the new technological innovations herald major changes in the banking environment, and challenge all banks to make timely preparations in order to enter into the new competitive monetary and financial environment. Therefore, it is interesting to investigate the effectiveness of the banks and profitability, as it is valued by the financial markets, i.e. the greater the efficacy the higher the competitiveness and vice versa.

As financial intermediaries, banks play a crucial role in the operation of most economies. Recent research, as surveyed by (Levine 1996), has shown that the efficacy of financial intermediation can also affect economic growth. Crucially, financial intermediation affects the net return to savings, and the gross return for investment. The spread between these two returns mirrors the bank interest margins, in addition to transaction costs and taxes borne directly by savers and investors. This suggests that bank interest spreads can be interpreted as an indicator of the efficiency of the banking.

Banks in countries with a more competitive banking sector-where banking assets constitute a larger share of GDP-have smaller margins and are less profitable (Levine, 1996). The bank concentration ratio also affects bank profitability; larger banks tend to have higher margins. Well-capitalized banks have higher net interest margins and are more profitable. This is consistent with the fact that banks with higher capital ratios have a lower cost of funding because of lower prospective bankruptcy costs. (Levine, 1996)

Differences in a bank's activity mix affect spread and profitability. Banks with relatively high noninterest-earning assets are less profitable. Also, banks that rely largely on deposits for their funding are less profitable, as deposits require more branching and other expenses. Similarly, variations in overhead and other operating costs are reflected in variations in bank interest margins, as banks pass their operating costs (including the corporate tax burden) on to their depositors and borrowers. (Berger1995)

In developing countries foreign banks have greater margins and profits than domestic banks. In industrial countries, the opposite is true. Macroeconomic factors also explain variation in interest margins. Inflation is associated with higher realized interest margins and greater profitability. Inflation brings higher costs-more transactions and generally more extensive branch networks-and also more income from bank float. Bank income increases more with inflation than bank costs do. (Kunt1997 *et al*)) There is evidence that the corporate tax burden is fully passed on to bank customers in poor and rich countries alike. Legal and institutional differences matter. Indicators of better contract enforcement, efficiency in the legal system, and lack of corruption are associated with lower realized interest margins and lower profitability.

1.1.2 Profitability measures

Performance analysis of financial institutions, particularly commercial banks has received increased attention over the past several years. As a result the focus has moved from attempts to characterize performance in terms of simple ratios (ROA or ROI) to multidimensional system perspective. Although accounting and financial ratios provide important and useful information for benchmarking a bank's financial performance there are also many factors relative to bank performance e.g. asset, revenue, profits, market value, number of employees and customer satisfaction. A better understanding of the

relationship among the various factors would provide the key of improving bank productivity.

Investment choices are motivated by the quest to obtain the highest returns on capital. It is, however, not easy to gauge or analyse profitability, of the bank. Profitabilty analysis is nonetheless indispensable to assessing the determinants and prospects of growth.

To understand profitability preference is given to two indicators that are commonly found in the economic literature: firstly, net economic , profitability which provides information on the profitability of capital invested in productive activity irrespective of the financing structure chosen; and secondly, financial profitability , which provides information on returns on equity. Financial profitability is influenced by the financing structure *via* financial leverage. Both indicators are adjusted for the impact of taxation on corporate earnings. Financial profitability is, in addition, adjusted for the impact of inflation on the real value of debt. (Levine, 1996)

Today's financial services industry is a highly competitive world. Banks are faced with competition from not only other financial institutions, but also, thrifts, insurance companies, investment companies, mortgage companies and others. Banks are facing immense challenges to achieve sustainable profitability. Historically low interest rates are compressing margins and forcing banks to enhance their performance management capabilities. One of the biggest measures of a bank's profitability is its net interest income. Net interest income is by far the largest driver of product profitability, typically accounting for up to 80 percent of a bank's revenue. (Levine, 1996)

The profitability of banks has two measures of, viz., the return on assets (ROA; measure of the operational efficiency of the bank) and the return on equity (ROE; measure of the owner's returns on their investment). (Allen, 1995) Banks manage the amount of capital they hold to prevent bank failure and to meet bank capital requirements set by the regulatory authorities and central bank. However, they do not want to hold too much capital because by doing so they will lower the returns to equity holders. In order to accomplish this, we derive information of the value net profit after tax, equity capital and total assets.

1.1.2.1 EBIT Margin %

EBIT Margin is the ratio of earnings (before interest and taxes) to sales. It is a measure of profitability on sales, most useful when compared against other firms in the same industry. EBIT Margin is also meaningful when evaluated over time to show where corporate profitability is headed.

1.1.2.2 EBIT to Assets (%)

EBIT to Assets is the ratio of Net Income plus Interest plus Taxes, all divided by total assets. EBIT is an excellent tax-adjusted measure of profitability, so the EBIT/Assets ratio is a correspondingly excellent measure of asset utilization efficiency.

1.1.2.3 Return on Assets (%)

Return on assets (ROA) gauges how efficiently a company can squeeze profit from its assets, regardless of size. A high ROA is a telltale sign of solid financial and operational performance. Return on Assets (pre and post tax) is a critical indicator of profitability. Companies which use their assets efficiently will tend to show a ratio higher than the industry norm. It measures the success of management's use of assets and is therefore a measure of profitability which allows us to compare companies with different levels and types of gearing without having to consider the impact of regulators or balance sheet management.

1.1.2.4 Return on Capital Employed (%)

Also known as Return on Equity, this ratio is one of the most important profitability metrics. Return on equity reveals how much profit a company earned in comparison to the total amount of shareholder equity found on the balance sheet. Remember that shareholder equity is equal to total assets minus total liabilities. It's what the shareholders "own". Shareholder equity is a creation of accounting that represents the assets created by the retained earnings of the business and the paid-in capital of the owners.

A business that has a high return on equity is more likely to be one that is capable of generating cash internally. For the most part, the higher a company's return on equity compared to its industry, the better.

These financial ratios are generally understood as measures of firm and industry profitability.

1.1.2.5 Quick Assets to Total Deposits

This ratio is a much better of how quickly a bank can respond to demands for cash from their depositors. If the ratio of Quick Assets to Total Deposits is high, it implies that the bank is liquid enough to settle it's obligation with depositors promptly.

1.1.2.6 Quick Assets to Total Liabilities

Quick assets are those assets that are either in cash form or can quickly be converted into cash, for example treasury bonds and bills. Items falling into this category must have a maturity period of less than five years. The bulk of a bank's liabilities are often the deposits it takes from customers.

1.1.3 Liquidity Theories

Asset liquidity is the ease of converting an asset to cash with a minimum loss. The most liquid assets mature near term and are highly marketable. Liquidity measures are normally expressed in percentage terms as a fraction of total assets. Liability liquidity is the ease with which a bank can issue new debt to acquire clearing balances at reasonable costs. Liability liquidity measure typically reflects a bank's asset quality, capital base, and composition of outstanding deposits and other liabilities. Historically, liquidity management focused on assets and was closely tied to lending policies.

1.1.4 Liquidity Management Theories

Four liquidity management strategies are suggested in the finance literature. Under the *commercial loan theory* prior to 1930, banks were encouraged to make only short-term,

self-liquidating loans (Currie, 1931). *Shiftability theory* represented the next extension by recognizing that any liquid asset could be used to meet deposit withdrawals (Klein, 1971). In particular, a bank could satisfy its liquidity requirements if it held loans and securities that could be sold in the secondary market prior to maturing. Around 1950 the focus shifted to the anticipated income theory. *Anticipated income theory or prospect theory*, which suggested that liquidity requirements and thus loan payments should be tied to a borrower's expected income by (Kahneman1979 *et al*)). According to prospect theory decision makers can become less risk averse and even risk seeking if they find that they are operating below target or aspiration levels. High-variance (riskier) alternatives may provide a decision maker a better chance of achieving the desired outcome than low-variance (safer) alternatives (Kahneman1979 *et al*). Fishburn (1977) suggests that perceived risk is more related to the extent to which decision makers find themselves operating below target than to the dispersion of outcomes about the mean.

Banks were still encouraged to invest in marketable instruments but now structured loans so that the timing of principal and interest payments matched the borrower's ability to repay from income. Then there was the *liability management theory* which stipulates that banks can satisfy liquidity needs by borrowing in the money and capital markets (Ars 1994 *et al*). When they need funds, they can simply borrow via central bank funds purchased, commercial paper, etc. Today, banks use both assets and liabilities to meet liquidity needs. This requires that the available liquidity sources are identified and compared to expected needs.

1.1.5 Liquidity versus profitability

As a philosophical issue, banking risk management is about attitudes toward risk and the pay off associated with it, and strategies in dealing with them. As an operational issue, risk management is about the identification and classification of banking risks, and methods and procedures to measure, monitor and control them.

There is a short-run trade-off between liquidity and profitability. The more liquid a bank is, the lower its return on equity and return on assets, all other things being equal. Both asset and liability liquidity contribute to this relationship. Asset liquidity is influenced by

the composition and maturity of funds. In terms of liability liquidity, banks with the best asset quality and highest equity capital have greater access to purchased funds. They also pay lower interest rates and generally report lower returns in the short run. Liquidity management is a day-to-day responsibility. Liquidity risk, for a poorly managed bank, closely follows credit and interest rate risk. Banks that experience large deposit outflows can often trace the source to either credit problems or earnings declines from interest rate bets that backfired (Berger, 1995).

1.2 RESEARCH PROBLEM

Stiff competition within the financial services industry poses new strategic challenges to bank management. The hot topics beyond (Basel II 2003) include generating sustainable returns above the cost of capital; state of the art methods for managing economic capital and capital allocation; value based bank management; integrating risk and capital management. The effort involved when implementing the infrastructure necessary for a bank management based on economic capital is immense.

Diversity in bank decision makers' attitudes toward risk results in diverse bank management strategies. Risk taker decision makers are willing to accept higher risk for higher return whereas risk-averse managers accept lower level of risks for lower return, (Angelopoulos 2001 *et al*)).

Consequences of high risk taking strategies might be more devastating in unstable macroeconomic environments such as emerging financial markets, leading to systemic banking crises. On the other hand, financial risks may also increase a bank's overall risk. Since in Kenya this type of interdependency has not been studied, it might be worthwhile to analyze strategies that commercial banks employ. It is also useful correlating different strategies that exhibit varying risk-taking to demonstrate their sensitivity to banks' performance.

In Kenya there is greater focus on financial stability given the bank failures in 1980's (www.centralbank.go.ke**).** Furthermore, and not surprisingly, various research organizations and financial institutions such as the Central Bank of Kenya, the IMF, Basel Committee, European Bank and Asian Development Bank invest in developing

useful measures of, and management approaches to, financial soundness (Diziobek 2000 et al), and estimating their impact on various economies. However, financial intermediation creates some risks that are borne by commercial banks. This study is motivated by this perception of increased risk in the commercial banking industry. It is to examine competing theories and how useful the theories are in explaining variations in returns (performance) among commercial banks. As a matter of fact, there has never been unanimity in theory or in practice on this subject of bank management strategies.

In Kenya some commercial banks report huge profits while others report huge losses. The problem is then to identify the management approaches employed by both profitable and unprofitable commercial banks and recommend the best practice. The research question is: What measures do commercial banks take to effectively manage liquidity risk?

1.3 RESEARCH OBJECTIVE

a. To identify liquidity management strategies employed by commercial banks in Kenya

b. To study the relationship between bank liquidity management strategy and bank profitability.

1.4 IMPORTANCE OF THE STUDY

Bank Managers

The findings of the study can guide finance managers to make value maximizing investment decisions on behalf of their companies. Identification of liquidity management strategies with maximum impact on profitability enables manager employ relevant strategies. This will be beneficial to the owners of the bank.

Bank Regulators

The regulators will have evidence as to which types of strategies are employed by successful banks. This enables them design rules and regulations that help minimize financial crises.

Management Consultants

This study will benefit management consultant as they ponder on development of tools for the management of bank liquidity.

To Finance students

The research adds to the body of knowledge in finance as well as further evidence on how banks in Kenya are managed.

CHAPTER 2

2.0 Literature Review

Introduction

This chapter provides the theoretical foundation of the model in order to identify and analyze the ultimate challenge (s) that would face the banking sector and the economy at large. The literature on the subject as found in the journals, previous finance researches papers, textbooks by several authors, internet and other professionals magazines.

2.1 The Concept of Liquidity

The modern theory of financial intermediation conceives creating liquidity by funding illiquid loans with liquid demand deposits as an important role of banks in the economy (Diamond 1984 *et al*)). Banks create liquidity on the balance sheet by transforming less liquid assets into more liquid liabilities. This suggests that Banks may also create significant liquidity off the balance sheet through loan commitments and similar claims to liquid funds (Kashyap 2002 *et al*)).

That commercial banks transform short-term, liquid liabilities (short term deposits from customers) into long-term, illiquid assets, (Kashyap2002 *et al*) it enables customers to smooth out their consumption and investment patterns. In providing this economic function, banks effectively protect their customers against liquidity tribulations. However, by providing liquidity to citizens, banks become exposed to liquidity risks whenever the borrowers fail to service the loans. The effect of this transformation increases the overall welfare level of society.

Banks illiquidity problems can manifest themselves in runs, even on sound banks. Run on a bank by its customers arise when customers withdraw their deposits on a huge scale. It is possible that an individual bank liquidity problem can quickly spread to the whole banking system thus resulting in a destructive bank panic.

The absence of perfect information together with the principle of first come, first served in the repayment of deposits at par are critical factors in bank runs and panics.
To mitigate bank runs, measures such as deposit insurance; reserve requirements and access to central bank liquidity must be put in place, (Diamond 1984 *et al*)).

The role of commercial banks as liquidity providers explain why lending and deposit-taking operations are combined as functions of commercial banks. Remember that under narrow banking, lending and deposit-taking are separated and performed by different financial institution. But this is not the case nowadays. Nowadays both sides of a bank's balance sheet emphasize on same basic function, which is the provision of liquidity. Provision of liquidity require that credit is available to those who need it, but without comprising the liquidity of the lending financial institution. This implies that banks hold large volumes of liquid assets in order to share any dead-weight costs of holding these liquid assets, (Ramakrishnan 1984 *et al*))

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Other authorities argue that the spur created by demand deposits is what encourages banks to providing liquidity to borrowers. That is, as the total face value of the loans cannot be recovered, early loan liquidation may result in possible losses for depositors and, in turn, in a bank run, (Ramakrishnan 1984 *et al*)).

We define liquidity is the ability of commercial banks to fund increases in assets (advances) and meet obligations (depositors' claims) as they become due. This definition underlines the stochastic dimension of liquidity (Kashyap 2002 *et al*)). This dimension is important where there is an unexpected utilization of credit lines, unforeseen deposit withdrawals, untimely loan redemption, untimely interest payments, liquidity need resulting from asset price developments, or failed or delayed payments by sellers of credit risk protection. Ideally, banks would like to calculate a measure of vulnerability to such liquidity risks by considering a range of possible outcomes and their probabilities and ultimately design an effective strategy.

There are two distinct but interrelated dimensions of bank liquidity: funding or cash liquidity, this refers to the ability to borrow in the market; and asset or market liquidity, which is the ability to sell or to unwind asset positions.

A leveraged institution that is not willing or able to sell its asset positions in time will need to ensure appropriate funding liquidity. Likewise, an institution that is not able to get the necessary funding might want to sell or pledge assets, which will be considerably more difficult for illiquid assets. The mutual interaction of funding and asset liquidity means that they tend to reinforce each other. However, this dependency could weaken markets during unstable periods if disruptions affecting funding (liabilities) spread to lending (assets).

Institutions that tend to finance their market-making activities through borrowed funds, or financial institutions with relatively low level of cash, expose themselves to distress selling, thereby undermining the liquidity of the whole market. Banks should be able to assess the maturity profile of their assets and liabilities and the related returns and costs. In doing so, they can also determine what liquid assets to hold to meet a desired threshold for maturity mismatch i.e. they design a strategy.

It follows that commercial banks must assess the likelihood of more liabilities having to be repaid than new liabilities being generated to replace them i.e. manage funding liquidity risk. If they fail in this, they will be unable to meet short-term obligations i.e. manage asset liquidity risk (Ramakrishnan 1984 *et al*)) Not surprisingly, the managers of well managed commercial banks tend to think about normal and stress times separately since the probability of shifts in the marketability of different asset classes and the maturity structure of liabilities may be different when circumstances are normal. Liquidity management is in actual fact a matter of a cost-benefit trade-off. This is because a bank will always be able to finance itself as long as it is willing to pay the prevailing market price or by selling or pledging assets. Likewise, a bank may hold a stock of high-quality liquid assets to provide liquidity insurance but such assets will give low returns. (Bindseil 2003 *et al*)) However, in the event of an individual bank crisis, the bank's access to liquidity may be severely restricted if other financial institutions are unwilling to provide funds. In a general market crisis, it may even be impossible for a bank to mobilize its assets on the market.

2.2 Liquidity Risk and Financial Structure

Liquidity risk is closely related to other dimensions of a bank's financial structure. Banks financial structure includes transactions relating to interest rate risk, foreign exchange risk, profitability and solvency. The interest rate risk resulting from mismatches in maturity or interest rate renegotiated dates lead to reinvestment risk and market value risk. However, by acting as a risk-bearing maturity and liquidity transformer, a bank can earn a return and enhance its profitability. This implies an attempt by banks to match liquidity with financial structures.

Holding more liquid assets or better matching the cash-flow profile of assets and liabilities will reduce the liquidity risk, but compromise bank profitability. The relationship works equally in the opposite direction: impaired loans will impact both profitability and liquidity, as expected cash inflows do not materialize. Furthermore, there is a relationship to solvency (Diamond 2001 *et al*). Greater bank capital reduces liquidity creation by the bank but enables it to survive more often and to avoid distress. Solvent bank should not normally experience funding problems with customers willing to roll over their deposits. However, as the solvency of an institution becomes more uncertain, the liquidity becomes more of an issue. Moreover, solvency may be difficult to ascertain, especially in a crisis situation, which would call for liquidity regulation as a sort of insurance. These illustrations show the close interaction between different risk areas which are difficult to disentangle in practice.

2.3 Liquidity Creation and Capital

There are opposing predictions on the link between capital and liquidity creation. Some theories (financial fragility-crowding out hypothesis) – predicts that higher capital reduces liquidity creation. This is the case when level of reserve requirement is high and managers become complacent (Diamond2000 *et al*)) focus on financial fragility and model a relationship bank that raises funds from investors (those with savings) to provide financing to an entrepreneur (borrower). In that set up, it is hypothesized that the entrepreneur may withhold effort, thus reducing the amount of bank financing attainable. It is equally possible that the bank may also withhold effort, which limits the bank's ability to raise financing to enhance liquidity creation bank source capital from

long term debenture. These investors cannot run on the bank and thus limits their willingness to provide funds, and hence reduces liquidity creation. Thus, banks with less capital ratio are likely to create less liquidity,(Diamond 2000 *et al*)).

(Gorton 2000 *et al*) show how a higher capital ratio may reduce liquidity creation through the crowding out of deposits. They argue that deposits are more effective liquidity hedges for investors than investments in equity capital. Thus, higher capital ratios shift investors' funds from relatively liquid deposits to relatively illiquid bank capital, reducing overall liquidity for investors.

The competing hypothesis is the risk absorption hypothesis. Risk absorption hypothesis suggest that higher capital enhances banks' ability to create liquidity.(Dybvig 1983 *et al*) assertion is that liquidity creation exposes banks to risk. The more liquidity that is created, the greater is the likelihood and severity of losses associated with having to dispose of illiquid assets to meet the liquidity demands of customers. (Bhattacharya 1993 *et al*), assert that bank capital absorbs risk and thus make banks to be receptive to risk. By being receptive to risk, banks will be willing to accommodate marginal borrowers, thereby creating more liquidity. This is in line with the standard view of liquidity creation, which is that banks create liquidity by transforming illiquid assets into liquid liabilities.

(Rajan 2000 *et al*) show that banks can create more or less liquidity by simply changing their funding mix on the liability side. This might or might not require additional injection of capital. Thakor (1996) shows that capital may also affect banks' asset portfolio composition, thereby affecting liquidity creation through a change in the asset mix.

2.4 Banks Liquidity Management Theories

From the above, it is clear that a major objective of a commercial bank is to create liquidity while remaining financially sound. However, there are a number of dimensions in the way banks concretely manage their liquidity risk. In simple words, there are competing liquidity management theories. Liquidity management theories encompass where it is exactly performed in the organization, how liquidity is measured and monitored, and the measures that banks can take to prevent or tackle a liquidity

shortage. The competing theories include: Commercial Loan Theory (or Traditional Theory), Shiftability Theory and Anticipated income Theory.

2.4.1 Commercial Loan Theory

In the development of the commercial banking system, one of the principles of bank credit that has acquired widespread acceptance, not only in theory but also in practice, is the belief that commercial banks in their lending activities should extend credit only for short periods and for purposes which result in the self-liquidation of the credit, "The primary function of commercial banks, therefore, is to create funds which may be used to complete the processing of goods, to bring them to the markets, to transfer them to the possession of the ultimate consumer or user, and to provide means of final payment for all materials and services involved in the production and marketing of the goods." This is an explanation of bank liquidity described by Adam Smith: short-term loans advanced to finance salable goods on the way from producer to consumer are the most liquid loans the bank can make. These are self-liquidating loans because the goods being financed will soon be sold. The loan finances a transaction and the transaction itself provides the borrower with the funds to repay the bank. Adam Smith described these loans as liquid because their purpose and their collateral were liquid. The goods move quickly from the producers through the distributors to the retail outlet and then are purchased by the ultimate cash-paying consumer.

The earliest view was that loans should be granted to all classes alike but this was soon modified when successive failures brought home the importance of the liquidity principle in banking. Thus Nicholas Biddle (1825) said that loans should be made only on good short-term commercial paper and forbade the managers of the Bank of the United States to make loans on real estate or stock security, real estate not being "fit banking security" (large losses were taken on this type of loan during Jones' administration of the Bank) and stock loans having a "tendency to lock up the funds of the Institution" (Ralph 1903). These views, however, were not unanimously held: A committee of the Virginia legislature argued in 1816 that the experience of every American banker proved that advances for long periods are not inconsistent with commercial banking itself (Miller 1927)

Much of the sentiment in favor of commercial loans or "business paper" can be traced to the popular idea that a bank's main function is to develop its community; as such loans are more generally made to local merchants than other types (Reliance on commercial paper branch) .This sentiment is clearly brought out in the frequent condemnation by the Massachusetts Bank Commissioner of the practice of buying commercial paper in New York. These "foreign loans" were declared to be poor risks and moreover banks were chartered to provide for the needs of their vicinity and not to finance the undertakings of a distant city.

In USA, many of the states even went so far as to require the banks to lend a certain proportion of their funds to farmers for relatively long periods. This unfortunate attitude, which subordinated considerations of liquidity and solvency to the needs of local borrowers, has persisted to some extent to this day and has undoubtedly been responsible for many banks' failures.

The commercial loan theory posits that bank loans should be made largely to finance the production and movement of goods. For example, a manufacturer may borrow from a bank to purchase raw materials and fabricate them into finished products, with the understanding that the loan will be retired by the manufacturer when he sells his products (Currie, 1931). A retailer may properly be given bank credit to purchase merchandise, and it is understood that the loan will be retired from the proceeds of the sale of the merchandise to the consumer. A farmer may borrow to purchase feed to fatten cattle which are to be sold. The proceeds of the sale are used to retire the loan. Bank loans to finance the production and movement of goods thus automatically liquidate themselves. However, there are periods of depression when goods did not move readily into the normal channels of trade, or moved at greatly reduced prices, and frequently at substantial losses to the sellers. In such circumstances, the borrowers could not retire even their short-term loans, and lending commercial banks found themselves with frozen loans and unanticipated losses. (Currie 1931). Commercial banks with limited demands for strictly commercial loans have likewise frequently abandoned the theory of short-term loans and have made longer-term loans upon farm properties. It must be admitted that this has not always been to their advantage.

Borrowers sometimes follow the practice of transferring a loan from one bank to another instead of providing annual liquidation. See Shiftability Theory. This is not uncommon and gives the appearance of a short-term loan to an obligation which is actually a longer-term credit. There have likewise been many instances where businesses in the past obtained bank loans to finance additions to factories and equipment. These loans were often made for three, six, nine, or twelve months, with the understanding that they would be renewed, per-haps with a reduction in the principal. The complete liquidation of the loans was dependent upon earnings over a period of time or upon obtaining funds in the capital markets. (Currie1931). Obviously, these credits were not strictly short-term, commercial loans, but were for longer terms. If the relationship between current assets and current liabilities was good, banks have extended credit on a short-term basis for the purchase of fixed assets in reasonable amounts.

But, from the standpoint of the borrower, it may be disadvantageous to obtain credit for a long-term need on an uncertain short time commitment. Although the bank may extend the credit with an implied understanding that it can be renewed, assuming business conditions and the financial position of the borrower do not deteriorate, the bank does retain the right to ask for payment of the loan at maturity.

In the banks, particularly in urban communities, the majority of collateral loans to individuals are seldom strictly commercial loans, judged either by the purpose for which they are extended or the length of time for which they are granted. In the 1920's, during the stock market boom, loans to individuals were often secured by stocks and bonds. These loans were sometimes carried indefinitely in anticipation of further advances in stock market prices (Currie, 1931). However, in some instances, individuals operating businesses may borrow by assigning accounts receivable or by pledging eggs, butter, grain, or other acceptable collateral; secured loans of this character may meet all the requirements of the traditional commercial bank credit.

Collateral loans to brokerage houses have had a commendable record of safety and prompt payments and yet many of them could hardly be classified as commercial loans in the traditional sense. Nor would bank loans on the cash-surrender value of insurance policies be considered as loans granted to finance the movement of goods when the

funds were used to carry stocks or bonds (Currie, 1931). However, there might not be the slightest question of their ultimate goodness or even of the possibility of liquidating them quickly.

Likewise, there might be, strictly speaking, some question whether bank loans to commercial credit companies, which finance the retail installment sales of pianos, radios, washing machines, automobiles, furniture, and other merchandise that is relatively durable and is primarily investment spending, fall in the class of the traditional commercial loans. Small personal loans would not qualify as loans made to facilitate the movement of goods, with liquidation flowing automatically out of the sale of the goods by the borrowers.

The entire development of consumer credit, that is, small personal loans, in the commercial banking system has not generally conformed to the traditional concept of commercial bank credit. It has represented, as a rule, simply the extension of credit to the public for consumption purposes; it has not been short-term commercial credit used to finance the production and distribution of goods with liquidation resulting from the sale of the goods by the borrower.

2.2.1.2 Commercial Loan (Traditional) Theory and Liquidity.

Under the older or traditional theory of liquidity, individual banks and the banking system as a whole found that bank credit generally was liquid in an expanding economy. Business was prosperous and goods were moving through the channels of trade regularly, perhaps at an increasing velocity (Schreft 1990) most businessmen could, if requested, easily liquidate their inventories and discharge their bank obligations. However, with increasing trade, and particularly with rising prices, banks loans tended to grow larger because it was profitable to borrow funds. In a prosperous and expanding economy individual banks and even the entire banking system might be considered liquid for normal purposes when judged by the requirements of the traditional theory of liquidity. (Schreft 1990 *et al*)

In the event of economic depression with falling prices, many business concerns might find it impossible to dispose of their inventories at prices which would permit the

liquidation of their commercial bank loans. An individual bank might, at the beginning of a depression, force its borrowers to liquidate their bank obligations, but any attempt by all banks in time either of depression or prosperity to compel the liquidation of all their bank loans simultaneously would result in national economic chaos. (Schreft 1990 *et al*) The traditional theory of liquidity presumably provides for an elastic bank credit structure, one which permits bank credit to expand in periods of prosperity and to contract in depressions. However, it should be emphasized that it would be economically disastrous if all banks, either in good times or in periods of depression, wished at one time to retire any substantial part of the total bank credit outstanding.

2.4.1.3 Shiftability Theory

The "shiftability" theory is the second major theory of bank liquidity. According to the shiftability theory the liquidity of a bank may be measured by the extent to which it can shift its assets readily to other buyers for cash at satisfactory prices. The old traditional theory of liquidity with short maturities was no longer to be considered the only basis upon which banks might extend credit. This greatly expanded opportunity for the shifting of assets in an emergency unquestionably gave some impetus to the granting of longer-term bank credits.

The bond portfolios of banks, whether the bonds do or do not have ready markets, rarely represent the extension of credit or the use of bank funds in accordance with the traditional concept of liquidity. The bonds are not liquidated by the sale of goods as in a typical commercial transaction, but are liquidated by the bank selling them or shifting them to another holder. The shift ability "theory holds that experience shows that the bond paper often cannot be liquidated at maturity; that when the paper can be liquidated at maturity, it may not be desirable to liquidate it; and that when demand is made on the liabilities of an individual bank, the only reliance for liquidity in an emergency lies in the power to shift assets to other banks and get funds from the banks that still have available funds, (Waldo, 1923).

It should be emphasized that in ordinary times the problem of liquidity is not a problem of maturing loans so much as it is a problem of shifting assets to other banks in exchange for cash. If one bank can always get help from another in case of trouble,

there is no necessity of relying upon maturing loans i.e. banks only need to shift liabilities and assets. It is now recognized in banking circles that the way to attain the minimum in the matter of reserves is not by relying upon maturities but by maintaining a considerable quantity of assets that can be shifted to other banks before maturity as necessity may require. Liquidity is tantamount to shiftability, (Moulton 1939, p. 723). Moulton also states that "under the Central Bank System. It is of course apparent that liquidity is a question of shiftability to the Central Bank banks". This suggests that in the case of temporary liquidity crisis, it is normal for commercial banks to seek temporary accommodation at central bank.

The shiftability theory has its inadequacies and advantages. The first shortcoming is that it does not readily apply to a bank's unsecured commercial loans because these loans cannot be sold in the money market or even transferred to other commercial banks (Prochnow, 1949). Prospective buyers of bank loans ordinarily would have no ready knowledge of the value of the obligations of many individual bank borrowers. Certain types of paper such as prime bankers' acceptances and commercial paper can be sold in the market, but these are normally only a small part of total bank loans (Prochnow , 1949), Even the disposal of these assets by one bank to another would leave the banking system as a whole in no more liquid condition, i.e. a diminution in the total amount of commercial loans will accompany a fall in prices, and a decline in the activity of trade, but for the banks to attempt to contract such loans quickly and in large amounts subjects business to intolerable strain and if persisted in, occasions failures so numerous and widespread as speedily to threaten even the solvency of the banks themselves. In short, business cannot suddenly be deprived of the volume of credit to which it has become adjusted without disastrous consequences both to lenders and borrowers" (Charles, 1922, pp. 82-88).

The shiftability theory does have special application to bonds held by banks, particularly bonds possessing marketability, and it does include the very significant possibility of shifting assets from commercial banks to the Central Bank System (Moulton 1939). It should be noted that the development of the corporate form of business enterprise has tended to increase the importance of the shiftability theory and to decrease the significance of the traditional theory of liquidity. This form of business enterprise has made possible the issuance of corporate bonds which have been purchased by banks,

and it has also made possible the use of bonds and stocks of corporations as collateral for bank loans(Moulton 1939).. Consequently, the long-term requirements of corporations are financed partly through bank bond portfolios and through the collateral loans of commercial bank borrowers temporarily or for a considerable period.

An individual bank may, in good times, have little difficulty in shifting assets, such as its bonds, to other holders. However, even in times of general economic prosperity, all banks could hardly elect simultaneously to shift any considerable portion of their assets to other holders. In a period of depression an individual bank would almost certainly find that assets which were shifted to other holders would be transferred at lower prices than those prevailing in prosperous periods (Moulton 1939,).. The bank would have liquidity, as many banks found in the 1930's, but it would be liquidity at a price.

If all banks attempted to shift any considerable portion of their assets in periods of depression, it would probably be impossible to find buyers and the cost of liquidity in the markets would be excessive (Mitchell, 1923). It is also an established principle with well-managed banks that they will, if at all possible, carry their customers through depressions. Time collateral loans, for example, of good customers of the bank are not ordinarily subjected to forced liquidation.

The banks, as a rule, co-operate with their customers to see them through economic hardships. When shrinkage takes place in all bank loans in accordance with the traditional theory of liquidity, it involves shrinkage of the entire economic structure, and this may be most unfortunate. In accordance with the shiftability theory, when an attempt is made to shift all bank loans, either in the form of commercial credit or bond holdings, it is possible to obtain liquidity only at a sacrifice in values. (Mints 1949)
The traditional theory of liquidity and the shiftability theory of liquidity have merit, but it is not difficult to overrate their advantages to the banking system as a whole. It is obvious that they have definite disadvantages, and they do not assure the liquidity of the entire banking system. Moreover, any attempts to use their assumed advantages in times of depression may not only aggravate and prolong a period of economic stress, but may actually initiate a major economic decline. Even the improvement of the liquidity of one bank by the traditional method or by the process of shifting assets may simply mean that the liquidity of other banks is lessened because the credits find their

way from the liquidating bank into other banks. In our analysis of theories of bank liquidity in the past we have repeatedly emphasized the liquidity of the individual bank, but we have underemphasized the liquidity of the banking system as a whole.

The truth is that there is no banking asset which is liquid in the sense that the aggregate amount of this asset can be greatly contracted without deleterious effects on the volume of output. Only the existence of a central monetary agency that is willing and able to increase its holdings of a given asset by large amounts will make that asset liquid for the banking system, (Mints, 1945, p. 263). Furthermore, a banking system, most of whose assets were shiftable and few self liquidating would rely heavily on the strength of the markets or on the stimulation of investment demand. A system which relied on self-liquidation, in the sense of motion towards a customer, would endeavor to stimulate consumption. For instance, many bankers today advocate a high dispersion of the national income and a high rate of wages on the theory that consumption is thereby fostered and goods move rapidly towards a market. "It is hardly fair to say that either system is essentially safer than the other. They do different things; they are supported in different ways; and indeed in a period of grave crisis it might be far more difficult to support a flow of consumption which makes loans self-liquidating than to support a market situation which makes securities temporarily unsalable. The commercial bank, which confines its activities to short-time loans for commercial purposes, is more interested in commerce and consumption than in the capital markets. A bank lending on securities is more interested in the opening or supporting of the stock exchanges. Of course, over a period of time consumption begets the construction and use of plants, and thereby reflects back on the capital markets. Equally, the stimulation of capital markets facilitates employment, payment of wages and ultimate consumption. But at any given moment of time the interests may diverge though in the long run they must move more or less together.

2.4.1.4 Anticipated Income Theory

According to prospect theory decision makers can become less risk averse and even risk seeking if they find that they are operating below target or aspiration levels (Kahneman 1979 *et al*). High-variance (riskier) alternatives may provide a decision maker a better chance of achieving the desired outcome than low-variance (safer)

alternatives. This presupposes variability of accounting measures and attempts to differentiate between alternative definitions of target outcomes in the banking industry. (Kahneman 1979 *et al*) suggested prospect theory as an explanation for the phenomena noted by Friedman and Savage and by Swalm, that incorporate Fishburn's concept of risk, i.e. high return is a compensation for high risk.

(Payne1980) *et al*) confirm the Kahneman1979 *et al*) results. Therefore according to prospect theory, an individual can rationally exhibit differing degrees of risk aversion over time, depending on his position relative to required income.

It may be appropriate to add here that some bankers who are reluctant to make term loans to business and industry have no objection to loans to consumers; i.e. soliciting consumption loans from individuals such loans are advances to consumers for the purchase of radios, washing machines, automobiles, furniture, and other commodities. (Marvin1949 *et al*)These loans are not paid out of the sale of the commodity by the borrower in accordance with the commercial bank or traditional theory of liquidity, nor do the banks expect to shift the loans to the open market or to the Central Banks for liquidation. They are to be liquidated out of the anticipated income of the borrowers, and the same theory of liquidity thus applies both to term loans and to consumer loans. If the businesses and industries which make tern loans operate successfully with earnings available for the payment of their term loans, citizens will have employment and earnings so they too can retire their consumer loans. The failure and success of these types of loans are in a large measure interdependent in our economy.

It may be well to state again that the traditional theory that bank loans should be self-liquidating is not a workable theory when it must meet the test of liquidation not by one bank but by the entire banking system. Those who are critical of the theory say that so-called self-liquidating loans cannot in fact be liquidated in any considerable amounts without ruinous consequences for business activity.

Likewise, it may also be stated again that individual banks may ordinarily shift individual assets in moderate quantities without serious loss if other banks are less interested in shifting assets than in acquiring them. However, when the banking system faces a

period when liquidity preference is strong in the entire banking system, shiftability, except to a central bank, becomes an unworkable theory.

Under the traditional theory of liquidity, the liquidation of a bank loan stops the borrower at once from trading at the old level. Under the shiftability theory, that is, shiftability to other comrnercial banks, the borrower's credit has been liquidated at one bank only to be extended at another. Under the anticipated income theory of liquidity there is pressure on the borrower to save and to retire his loan from earnings, or to defer replacement to obtain funds for liquidating his borrowings.

2.4.1.5 Asset and Liability Management Theory

A vital issue in strategic bank planning is asset and liability management (ALM), which is the assessment and management of endogenous – financial, operational, business – and exogenous risks. The objective of ALM is to maximize returns through efficient fund allocation given an acceptable risk structure.

Asset/liability management (ALM) is coordinated management of a bank's balance sheet to allow for alternative interest-rate and liquidity scenarios Greuning (2003). The objective of ALM in the short run is to maximize net interest income. Asset/liability management has evolved over the years from simple maturity "gapping" procedures to market-based procedures that incorporate the use of more sophisticated means for managing and hedging interest, liquidity, credit and risks, (Ravindran 2005). In the face of the increased complexity of operating in a global environment, an effective asset/liability management process is critical to long-term success, (http://www.finser.com/) ALM is a multidimensional process, requiring simultaneous interactions among different dimensions. If the simultaneous nature of ALM is discarded then decreasing risk in one dimension may result in unexpected increases in other risks. ALM has changed significantly in the past two decades with the growth and integration of financial institutions and the emergence of new financial products and services. New information-based activities and financial innovation increased types of endogenous and exogenous risks as well as the correlation between these.

Consequently, the structure of balance sheet instruments has become more complex and the volatility in the banking system has increased.

It is mentioned above that traditionally banking was a simple intermediation of deposits that had been raised at a relatively low cost. Bank managers avoided complex decisions, specifically decisions were on loan volumes, pricing and investments. However, recession, volatile interest rates and inflation during the 1970s and early 1980s, forced bank managers to change. The management of both assets and liabilities became necessary in order to maintain earn good returns and maintain stable liquidity. Bank deregulation even made bank management more challenging. Deregulation introduced additional competition.

Sinkey (1992) is of the opinion that asset/liability management has been practiced by commercial banks earlier, though in a fragmented manner and at different levels. He points out that planning for capital was done by the corporate finance department, risk management by the treasury group, and investment functions by the investment planning department.

2.5 Asset Management

Kidwell, (1990) classify commercial banks assets under primary reserves, secondary reserves, bank loans and investments. Primary reserves are cash held by a bank and include: vault cash, deposits with correspondent banks, and the banks cash balances held at the central bank. The returns and risk on primary assets is low and negligible. Secondary reserves are short-term assets that can be easily converted at no discount: include treasury bills, and short-term securities. Therefore secondary reserves provide the bank with additional liquidity while earning interest income.

What emerges is under this strategy is that overall bank strategy is to hold minimum amounts of primary and secondary reserves. However in fixing this minimum, a bank hold is related to deposit variability, other sources of liquidity, bank regulations and the risk posture of the bank must be considered, (Kidwel, 1990)

2.6 Liability Management

Bank liabilities include negotiable certificates of deposit, repurchase agreements; commercial paper; saving deposits; and demand deposits. Under liability management, the assumption is that banks can use the liability side of the balance sheet to achieve optimum liquidity, while maximizing its income (Kidwel, 1990). In that framework, liabilities are a pool of funds in their short-run periods of operation under which the banks target asset growth as given by the market then adjust their liabilities to suit this provided growth.

Different liabilities respond to interest rate differently. Some liabilities are very sensitive to interest rate changes while others are less sensitive. This provides an opportunity to use liabilities in managing risk exposure. It is suggested that liability management enable banks to reduce their secondary reserves thus releasing those funds to be invested assets with relatively high yields Sinkey (1992).

2.7 Balance Sheet Risk Management

Raising funds and investing the funds in assets whose returns are commensurate with their risk complexion is what balance sheet management is about. and is the core business of commercial banking. with risk utilization of funds and this lies in the heart of a bank. It comprises strategic planning and implementation and control processes that affect the volume, mix, maturity, interest rate sensitivity, quality and liquidity of a bank's assets and liabilities. According to (Schoeb 2006 at www.garp.com), the primary goal of asset-liability management is to produce a high quality, stable, large, and growing flow of net interest income. This goal is accomplished by achieving the maximum combination and level of assets, liabilities and financial risk. ALM calls for the understanding of the interaction between the various types of risks to ensure that they are not evaluated in isolation.

In (Elements of ALM, 2006 at www.fca.org) it is noted that an important component of an acceptable ALM function is the development of an appropriate ALM policy. It is again pointed in this document that policies provide boundaries for decision-making and represent the philosophies and attitudes of an institution's board of directors.

Directors should assure themselves through their policies that decisions are not being made without measuring and considering the exposure of earnings and capital to potential interest rate movements.

2.8 Critique

An anticipated income theory of liquidity (Kahneman1979 *et al*) has certain points of similarity to the traditional and the shift ability theories of bank liquidity. The bank manager may rightly assume that in prosperous times a company that is well managed and has a good record of past earnings will be able to meet its debt commitment; while in periods of depression, he/she may assume that the same well-managed and well established company with a satisfactory record of past earnings will be able to make the same provision for payments on a long term loan that it might make on a short-term loan. A well-established company will in all probability have a surplus and reserves for emergencies. Moreover, in arranging a good term loan, the banker makes allowances for the ups and downs of business and does not extend a credit so large that the interest and principal payments require all the earnings of prosperous times. Some margin of protection is always required.

On the other hand, a short-term loan against inventories in process, as per commercial loan theory (Adam Smith), faces the hazard of sharp declines in prices that may translate into losses. The risk of loss is real in this type of loan, but here it is also to be noted that sound loans are not extended to the point where any loss in the conduct of the business would impair the loan and the ability of the business to continue operations. The banker always requires some margin of protection.

Theoretically, in extending short-term credit the banker's funds are returned to him at short intervals and he may then decline to extend further credit. Actually, the banker has the obligation to work with his customers through good and bad times renewing short-term credit where necessary to assist a borrower who will be able to retire his loan ultimately.

When the bank manager gives up the right of getting back lent funds at short intervals, he/she ordinarily receives a higher rate of interest for his loan than for short-term credit

to the same borrower. In addition, prepares a written term-loan agreement incorporating many safeguards to assure that his loan will be retired.

The liquidity of an individual bank long-term loan depends on the public consumption of the goods and services produced by the bank's borrowers. (Adam Smith), it is through public consumption that borrowers generate earnings and cash flows that is used to service bank loans. Therefore, the public consumption of goods and services is the actual test of whether both short-term and long-term loans will be repaid. The individual bank is also now assured that it can discount both its long-term and its short-term loans at the Central Bank. In the event of a serious economic depression, the ultimate liquidity of the bank's loans may rest in shift ability to the central bank.

If we consider all banks together, the successful operation of the anticipated income theory of liquidity (Kahneman 1979 *et al*) depends upon the public consumption of the goods and services produced by the term-loan borrowers. This is no less true of the liquidation of the short-term loans held in the banking system. Liquidation in their entirety of either the long-term loans or the short-term loans in the banking system would be impossible and would precipitate economic disaster. However, both the long-term loans and the short-term loans of the banking system may legally now be shifted to the Central Bank.

The right to shift to the central bank does not imply a privilege of extending either short-term or long-term credit on a speculative or unsound basis. Quality is a requirement in the extension of credit whether the banker expects the loan be liquidated in accordance with the traditional theory, the shiftability theory, asset and liability management or the anticipated income theory of liquidity.

The USA experience tells us a lot about these theories. Problems have arisen in the banking system presumably operating under the traditional and shiftability theories of liquidity. During the depression of 1930's, banks were confronted with heavy withdrawals by their depositors, forcing them to resort to shiftability (Waldo, 1923). through the open market. Shiftability through the open market at that time meant engaging in competition for a stagnant money supply. At the same time there was widespread hoarding of money, and the banks, found themselves attempting to secure

liquidation not merely in a market with a static supply of money, but with a declining stock of money.

The traditional or commercial bank theory of liquidity failed to function satisfactorily in the emergency of the early 1930's as it presumed that additional money was not needed in a depression. This theory assumed a depression was self adjusting to an extent that money supply finds its correct level. But a depression is not necessarily self-corrective within a reasonable period; it may actually be cumulative. If a depression is cumulative, the banking system and the economy should be alert and able to arrest the economic decline in its earlier stages.

From the standpoint of the banking system, one device for halting the cumulative effects of depression is to provide for the conversion of assets into cash at a money-creating institution rather than in the open market. In the past, re discountable paper was the method of creating new money without taking the money out of the market.

2.9 Bank Liquidity Management Theory and Bank Profitability

The responsibility of maintaining the liquidity of the banking system is not merely a question of balancing short-term credits against long-term credits. The short-term as well as the long-term credits of the banking system are liquidated because of the successful functioning of the consumptive markets. This means that the whole economy, of which the banking system is only a part, must operate smoothly and efficiently if the banking system is to be liquid. The banking system cannot be held entirely responsible for the proper operation of the entire economy. Standing in the background is the central bank, or Central Bank Banks, ready to provide liquidity for sound bank assets in the event of the threat of widespread general liquidation of the economic order.

The four theories are competing and complimentary. However in finance literature they are discussed under subheads, implying that they are different. We there fore expect to see difference in performance among the banks if individual banks employ different strategies.

High-variance (riskier) bank liquidity management strategy such as the prospect theory may provide a decision maker a better chance of achieving the desired outcome than low-variance (safer) alternatives such us assumed in the commercial loan theory.

This presupposes variability of accounting measures and attempts to differentiate between alternative management approaches of target outcomes in the banking industry. Kahneman 1979 *et al* suggested prospect theory as an explanation for the phenomena noted by Friedman and Savage and by Swalm, that incorporate Fishburn's concept of risk, i.e. high return is a compensation for high risk.

CONCLUSION

We may conclude that there are now four major theories of liquidity for bank loans: **(1)** the traditional or commercial bank credit theory; **(2)** the shiftability theory (to the open market including other banks); **(3)** the theory of anticipated income and **(4)** Asset/Liability management theory.

We may also conclude that the well-managed bank may properly include in its earning assets reasonable amounts of loans and investments which it is expected will be liquidated in accordance with my one of the three theories or a combination of two or more of them. In the event of widespread and large withdrawals in the entire banking system, ultimate liquidity is to be found in the central bank.

CHAPTER 3

3.0 RESEARCH METHODOLOGY

Introduction

This chapter explains the whole research process. The methodology for the study is outlined in terms of the basis of the methods and approaches used. The chapter considers the research settings population of study, sample, data collection and data analysis techniques.

3.1 Research Design

A survey research to find out the liquidity of management strategies employed in Kenya through the study. Both quantitative and qualitative data regarding the target population was collected.

3.2 Population and Sampling

The population of study comprised all commercial banks licensed by the treasury and recognized by the Central bank of Kenya. The numbers of Commercial banks at the period ending December 2006 were forty two (42) vide **Appendix 3**

There was no need of using sampling technique for the research since the population is relatively small.

3.3 Study variable

This covered the four (4) theories namely Traditional Theory, Shiftability Theory, Anticipated Theory and Asset Liability theory; and five (5) profitability measures namely Return on Asset (ROA), Return on Capital Employed (ROCE), Quick Assets total Liabilities, Quick Assets to Total Deposits and Short Fund / Total Assets.

3.4 Data Collection

The study employed primary and secondary data. A semi structured questionnaire was employed to aggregate the required data from respondent banks vide **Appendix 1**. The questionnaire will be administered directly to the senior officers of the banks.

The information was used to compare the strategies and profitability of banks by calculating returns on assets and match them with management strategies. The data of calculated returns on assets was extracted from the previous annual reports having an average period of five years.

3.5 Research Setting

The study was conducted in city of Nairobi as most of the licensed commercial banks headquarters operate from the city.

3.6 Data Analysis

The content analysis of the forty two (42) commercial banks served to enhance reliability, representiveness and validity of information collected. The information was extracted through sending questionnaire to senior most and experience managers in strategic department of the commercial banks.

ANOVA Analysis was used to analyse the primary data by performing a one-way analysis of variance with dependent variable in one column and subscripts in another.

The data analysis will be followed by the interpretation of results with the aid of F- test.

All data gathered from the questionnaires were entered into the basic statistics formula to calculate mean and standard deviation in order to determine the frequency of each of the four mentioned strategies.

The statements were mixed up to avoid leading participants too much towards a thought chain. A grade 1 to 3 was used, with 3 representing strong agreement and 1 representing less agreement. There are also several questions requiring Yes/ No answers.

The banks with common strategies were grouped according to the strategy they fall in. The maximum groups we can end up with is four (4), ranging from traditional or commercial bank credit theory as group 1 followed by shiftability theory group 2, anticipated income theory group 3 and finally asset/liability management theory. The returns as indicators of profitability will then be compared according to groups in a table format and the data will be arranged as follows:

GROUP	ROA	ROCE	Q.A/T.L	S.F/T.A	Q.A/T.D
1- Commercial Bank credit theory	X	X	X	X	X
2- Shiftability Theory	X	X	X	X	X
3- Anticipated Income theory	X	X	X	X	X
4-Asset and Liability Management theory	X	X	X	X	X

R.O.A- Return on Assets

R.O.C.E-Return on Capital Employed

S.F/T.A- Short Fund / Total Assets

Q.A/T.L- Quick Assets /Total Liabilities

Q.A/T.D -Quick Assets / Total Deposits

CHAPTER 4

4.0 DATA ANALYSIS AND INTERPRETATION

Introduction

In this chapter we present the actual findings of this study. The objectives of this study were two fold: identify liquidity management approaches, and the extent to which the four competing approaches: commercial loan theory, shiftability theory, anticipated income theory and asset and liability management theories are adopted by commercial banks and to link the approaches to profitability and liquidity levels.

Data collected was presented using tables and other statistical means. Qualitative input from the questionnaire was presented separately and interpretation and discussion follows immediately before the presentation of the tables.

4.1 Profile of Respondents

The response rate was almost seventy nine (78.57) percent. All the respondents were at senior management level with professional qualifications in banking.

Table 1: Number of Years in Service (N.Y.S)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	45.5	45.5	45.5
	2	14	42.4	42.4	87.9
	3	4	12.1	12.1	100.0
	Total	33	100.0	100.0	

In terms of number of years in service, forty six (46) percent of the respondents had been with the bank for up to five years, forty two (42.) percent for between 5 to 6 years and 12 percent with over twenty (20) years experience with the bank. The results are in table 1 above.

4.2 Overview of Liquidity Management Techniques

Table two (2) below is a summary of various items considered by commercial in management of their liquidity positions. The ranking ranged from a scale of 1 (not important) to a scale of 3 (very important).

Most commercial banks considered reserve requirements (with a mean score of 2.75 and standard deviation of 0.4399) as critical in management of bank liquidity. This is because banks have to imply with the legal requirements and rules that relate to liquidity as stipulated by the Central Bank of Kenya. Access to central bank (2.515) and in-house built strategies 2.576 are other critical factors considered in managing liquidity.

Table 2: Overview of Liquidity Management Techniques.

Variable	N	N*	Mean	Median	Std Dev
4.D.I	33	0	2.455	3.000	0.711
4.R.R	32	1	2.750	3.000	0.439
4. A.C.B.	33	0	2.515	3.000	0.755
4.I.B.S	33	0	2.576	3.000	0.708

Key: D.I- Deposit Insurance; **R.R-** Reserve Requirements; **A.C.B.L-** Access to Central Bank Lending; and **I.B.S-** In-house built strategies.

That in-house built strategy is given a factor loading of 85 percent (2.56/3) suggest that commercial banks, after complying with the Central Bank of Kenya (CBK) requirement design their own strategies in line with their business objectives. This opens a window for a study such as this one.

The list rank factor, though considered important is the deposit insurance largely because it is insufficient and that it does not contribute to bank profitability.

4.3 Incidence of Lending or Loan Liquidity Problems.

The respondents were asked how often they experience liquidity problems. The liquidity problems were operationalised in terms of unexpected utilization of credit unforeseen

deposit withdrawal to liquidity problems associated with change in asset values. The results are summarized in table 3 below: -

Table 3: Lending or Loan Liquidity Problems

Variable	N	Mean	Median	Std Dev
U.U.C	33	1.667	2	0.595
U.D.W	33	1.727	2	0.574
U.L.R	33	1.848	2	0.755
U.I.P	33	1.939	2	0.747
F.D.P	33	2.091	2	0.678
L.P.A	33	1.515	1	0.667

Key: U.U.C- Unexpected Utilization of Credit; U.D.W-Unforeseen Deposit Withdrawal; **U.L.R-** Untimely Loan Redemption; U.I.P- Untimely Interest Payments; F.D.P- Failed or Delayed Payments; L.P.A - Liquidity Problems Associated With Change in Asset Values Developments.

The ranking scores range from 1 (rarely) to always (3) for all the variables. The median score for the entire variables is 2. This could be due to the reluctance of the respondents to admitting that their banks faced liquidity problems in the past. The same results are observable when respondents opinion is sought on liquidity problems. (See table 4 below)

Table 4: Cash and Asset Liquidity Problems

Variable	N	Mean	Mode	Standard Deviation
6.F.C.L	33	1.485	1	0.667
6.A.L.B	33	1.333	1	0.540

Key: F.C.L- Funding or cash liquidity problems; **A.L.B-** Asset liquidity problems

4.4 Commercial Loan Theory

Questions were asked on elements inherent in this theory. The respondents were asked to rank the elements in a scale of not important (1) to very important (3). A score of two was considered important. The scores are in appendix 1.

To detect the existence, an index with a potential full score of 15 points is desired i.e. if a bank (respondents) assigns 3 (very important) to each of the five elements that is variables B.U.L.C, BU.LB, B.U.L.T.G, and B.U.L.P.F. the maximum score will be 12. This is converted into percentage ($^{12}/_{12}$) of 100 percent. For example, the first respondent, Bank of Africa assigns the values 2, 2, 3, 3, totaling 13 of 83.33 or $^{10}/_{12}$ percent, while bank of India has 100% percent.

Table 5 below is a detailed summary on the elements of commercial loan theory. The common element is the use of loan to transfer goods to consumers, i.e. retailing and marketing of goods each with a mode score of 3 (very important).

Table 5: Commercial Loan Theory

Variable Name	Value Label	1	2	3	Total			
		%	%	%	%	Mode	Mean	Std Dev
Use Of Loan To Complete The Processing Of Goods	B.U.L.C	18.18	42.42	39.39	100	2	2.21	0.74
Use Of Loan To Bring The Goods To The Market	B.U.L.B	15.15	54.55	30.30	100	2	2.15	0.67
Use Of Loan To Transfer The Goods To The Possession Of Ultimate Consumer	B.U.L.T.G	30.30	30.30	39.39	100	3	2.09	0.84
Use Of Loan To Provide Means Of Final Payment For All Material And Services Involve In The Production And Marketing Of The Goods	B.U.L.P.F	21.21	36.36	42.42	100	3	2.21	0.78
What Percentage Of Your Loans Provides Finance For The Production And Movement Of Goods	B.W.P.Y	18.18	57.58	24.24	100	2	2.06	0.66

From **Appendix one (1),** banks that have scores below 50 percent – HFCK Bank, K-Rep Bank, Transnational Bank and Habib AG Zurich. The mean percentage is 72.99 percent, suggesting that a number of banks employ elements of commercial loan theory. However, most of the banks are cautious in using loans employed in supporting production and movement of goods. Their advances for such activities are below 50 percent of total loan portfolio.

4.5 Shiftability Theory

This is a rarely used strategy. Majority of its elements have a mode score of 1 and a mean score of 1.5, suggesting that either bank managers are not aware about or its inappropriateness in our environment. In terms of percentage index, its mean score is around 50 percent.

The elements are summarized in table 6. Almost seventy nine (78.79) of the respondents do not shift or discount the bonds that they hold; fifty two (51.52) does not purchase corporate bonds. However, there is an element of refinancing (C.C.R) by the commercial banks.

Table 6: Elements of Shiftability Loan Theory

Frequency	Rarely	Sometimes	Always				
Value Label	1	2	3	Total	Mean	Mode	Std. Deviation
C.C.R.L	30.3	48.5	21.2	100	1.91	2.00	0.72
C.B.P.B	51.52	42.42	6.06	100	1.55	1.00	0.62
C.S.B	78.79	18.18	3.03	100	1.24	1.00	0.50

Key: C.C.R.L- How often does your customers refinance their loans;

C.B.P.B- How often does your bank purchase corporate bonds.

C.S.B- Does your bank shift the bonds you hold to other investors.

In summary, the deployment of this approach is between sometimes (2) and always (3) Shiftability theory would apply in case of long term lending. When respondents were asked the percentage of loan portfolio classified as long term, they stated that it is under 20 percent.

4.6 Anticipated Income Theory.

This theory is popular with the banks sampled, though not as popular as commercial loan theory. The mean for the index is 67.13 percent. The elements of this approach are contained in table 7.

Table 7: Elements of Anticipated Income Theory

	Rarely	Sometimes	Always	Not				
Value Label	1	2	3	Valid	Total	Mean	Mode	Std. Deviation
D.S.A.P	15.2	54.5	30.3		100.0	2.15	2.00	0.67
D.R.U.M.S	15.2	39.4	45.5		100.0	2.30	3.00	0.73
D.R.B	42.4	39.4	18.2		100.0	1.76	1.00	0.75
D.C.B	3.0	93.9		3.0303	100.0	1.91	2.00	0.38
D.B.P	69.7	30.3			100.0	0.61	0.00	0.93

Key: D.S.A.P- Substantial credit is advanced for a period of more than one year
D.R.U.M.S- Repayment is usually made serially over the life of the loan.
D.R.B- Repayment by the borrower is ordinarily made out of future earnings.
D.C.B- The loan will customarily be accompanied by written covenant of the borrower to conduct activities in a manner agreed upon by the borrower and your bank.
D.B.P- Does your bank put pressure on the borrower to retire the loan from earning.

The most common practice is that the loan will customarily be accompanied by a written covenant requiring the borrower to conduct activities in a manner agreed upon by the borrower and the bank (at least 93.9 percent of the respondents adopt such a practice. Because the loan is linked to the project that is supported by a written covenant, the bank rarely put pressure on the borrower to service the loan from project's earnings.

The key criteria of anticipated income theory is satisfied, namely, that substantial credit is advanced for a period of more that one year (84.8 percent) and that repayment by borrower are made serially over the life of the loan (84.8 percent).

4.7 Asset and Liability Management Theory.

This is another theory observed by a substantial number of commercial banks in Kenya. Its average score index is 67.68 percent. This suggests high level agreement on application of this theory.

Most of the banks agreed that their banks objective is to maximize net interest income in the short run 82 (51.52% + 30.30%) percent; and that they manage balance sheet to allow for alternative interest and liquidity scenarios. However, whereas in developed economies options and futures are core to risk management, Kenyan banks rarely employ such techniques. (See **Table 8** below)

However, most of the banks believe in the use of liability side of balance sheet in managing risk 88.5 percent.

Table 8: Elements of Asset and Liability Management Theory

		Disagree	Agree	Strongly Agree	Not				
Value Label	N	1	2	3	Valid	Total	Mean	Mode	Std. Deviation
	Valid								
E.B.O	33	18.18	51.52	30.30		100	2.12	2.00	0.70
E.M.B.S	33	15.15	45.45	39.39		100	2.24	2.00	0.71
E.D.F	33	54.55	36.36	9.09		100	1.55	1.00	0.67
E.O.S	33	15.15	60.61	24.24		100	2.09	2.00	0.63
E.U.L.S	33	12.12	60.61	27.27		100	2.15	2.00	0.62
E.L.M.R	33	15.15	66.67	18.18		100	2.03	2.00	0.59

Key : E.B.O-The banks objective is to maximize net interest income in the short run; **E.M.B.S-** Your bank manages its balance sheet as to allow for alternative interest and liquidity scenarios; **E.D.F-**Your banks use options and futures to manage risk; **E.O.S-** Your bank overall strategy is to hold minimum amounts of primary and secondary reserves; **E.U.L.S-** Your bank believes in the use of liability side of the

balance sheet to achieve optimum liquidity; **E.L.M.R-** Your bank use liabilities in managing risk exposure.

4.8 Loan Types

All firms sampled gave commercial and industrial loans to borrowers 36.36 percent to 63.64 percent say they on average or substantially lend such loans.

However, 9.09 percent of respondents say they do not offer consumer loans, twenty four (24.24) percent say they do not offer real estate loans and 36.36 percent do not offer agricultural loans. The most popular loan across the banks is consumer loans (see table 9) i.e. 60.61 percent.

Table 9: Loan Types

Value	No.	None	Average	Substantial	Total	Mean	Mode	Std. Deviation
Label		1	2	3				
E.C.I.L	33		36.36	63.64	100	2.64	3.00	0.49
E.C.L	33	9.09	60.61	30.30	100	2.21	2	0.60
E.R.E.L	33	24.24	45.45	30.30	100	2.06	2	0.75
E.A.L	33	36.36	42.42	21.21	100	1.85	2	0.76

Key: E.C.I.L- Commercial and Industrial Loans; **E.C.L -** Consumer Loans; **E.R.E.L-** Real Estate Loans; **E.A.L-** Agriculture Loans

Table 10 shows percentages invested in each loan. It is clear that less amount is invested in real estate and in agriculture i.e. 75.76 of the firms say their loan in agriculture is below 20 percent (see table 10) and 57.58 respondents show that their loan in real estate loan is below 20 percent.

Table 10: Amount Invested In Each Loan

Value	No.	0-20%	21%-50%	Over 50%	Total	Mean	Mode	Std. Deviation
Label		1	2	3				
E.P.C.I.L	33	6.06	48.48	45.45	100	2.39	2	0.61
E.P.C.L	33	54.55	18.18	27.27	100	1.73	1	0.88
E.P.R.E.L	33	57.58	36.36	6.06	100	1.48	1	0.62
E.P.A.L	33	75.76	18.18	6.06	100	1.30	1	0.59

Key: E.P.C.I.L- Commercial and Industrial Loans; **E.P.C.L** Consumer Loans; **E.P.R.E.L-** Real Estate Loans; and **E.P.A.L-** Agriculture Loans.

4.9 Summary of the Theories

The most popular theory with bankers is commercial loan theory. See **Table 11** below. The next is Asset liability management theory (3.0 percent of respondents. The evidence of use of shiftability theory is weak anticipated income theory is employed by 21 percent of respondents. However, there was one firm that employed a hybrid strategy – anticipated and commercial loan theory.

Table 11: Summary of the Theories

Theory	Frequency	Percent	Valid Percent	Mean	Mode	Std. Deviation
Commercial Loan Theory	15	45.45	45.45			
Shiftability Theory	0	0	0			
Anticipated Income Theory	7	21.21	21.21			
Asset and Liability Management Theory	10	30.30	30.30			
Hybrid - Anticipated and Commercial Loan Theory	1	3.03	3.03			
Total	33	100	100	2.45	1	1.42

4.9.1 The Impact of Liquidity Management Theories on Profitability

The second objective was to link the four theories to profitability so as to identify any relationship if any between them.

4.9.2 Measure of Profitability

The two measures of profitability used in this study are return on assets (ROA) and return on capital employed (ROCE). The correlation between this two variables was 0.83; p-value = 0.000. This tells us that the two measures are not significantly different, we can reach same conclusion by relying on only one of the measures.

Table 12: Descriptive Statistics: R.O.A (%), R.O.C.E (%)

Variable	N	Mean	Standard Deviation	Minimum	Maximum
R.O.A	33	2.618	1.438	0.19	5.61
R.O.C.E	33	19.18	12.66	1.25	50.11

Key: R.O.A- Return on Assets; **R.O.C.E**-Return on Capital Employed

Because we wish to test the equality of means of measures of profitability and to assess the differences in means associated with different liquidity management theories, we use the one-way ANOVA procedure (data in stacked form) with multiple comparisons.

4.9.3 ROA and Liquidity Management Theories

The results in table 13 show analysis of variance table, level of means, individual 95 percent confidence intervals and pooled standard deviation. The F-test ***p***-value of 0.642 indicates that there is not quite sufficient evidence (at α= 0.10 or less) to claim not all means are equal. In any case if you round the means for each competing theory, they appear to be the same.

Table 13: Comparing Return on assets (R.O.A) of Different Liquidity Management Theories.

Analysis of Variance for R.O.A %					
Source	DF	SS	MS	F	P
CIStra	3	3.66	1.22	0.57	0.642
Error	29	62.54	2.16		
Total	32	66.20			
			Individual 95% CIs For Mean		
			Based on Pooled Std Dev		
Level	N	Mean	Std Dev	----------+---------+---------+------	
1	15	2.393	1.701	(---*---)	
3	7	3.204	1.626	(-----*-----)	
4	10	2.488	0.827	(---*----)	
5	1	3.190	0.000	(----------*----------)	
			----------+---------+---------+------		
Pooled Std Dev =		1.469	2.0	4.0	6.0

Key: 1 = Commercial Loan Theory; 2 = Shiftability Theory; 3 = Anticipated Income Theory; 4 = Asset and Liability Management Theory; and 5 = Hybrid - Anticipated and Commercial Loan Theory.

The ***p***-value confirms that they are not different. It appears that profitability of commercial banks, measured as ROA does not depend on the liquidity strategy adopted.

4.9.4 ROCE and Liquidity Management Theory

The results in table 14 are same as those of ROA above. This is not surprising given a correlation of 0.83 between ROA and ROCE. The F-test p-value of 0.915 indicates that there is not quite sufficient evidence to claim not all means are equal. In any case, the mean range is between 18.05 percent to 19.96 percent.

Table 14: Comparing Return on capital employed (R.O.C.E) of Different Liquidity Management Theories

Analysis of Variance for R.O.C.E					
Source	DF	SS	MS	F	P
ClStra	3	89	30	0.17	0.915
Error	29	5038	174		
Total	32	5127			
			Individual 95% CIs For Mean		
			Based on Pooled Std Dev		
Level	N	Mean	Std Dev	----------+---------+---------+------	
1	15	18.05	14.45	(----*----)	
3	7	19.35	14.74	(------*------)	
4	10	19.96	9.49	(----*-----)	
5	1	27.14	0.00	(----------*----------)	
			----------+---------+---------+------		
Pooled Std Dev =		13.18	15	30	45

Key: 1 = Commercial Loan Theory; 2 = Shiftability Theory; 3 = Anticipated Income Theory; 4 = Asset and Liability Management Theory; and 5 = Hybrid - Anticipated and Commercial Loan Theory

4.10 Shareholders Capital and Liquidity Management Theory

Does capital contributed by shareholders of the bank depend on liquidity management theory adopted by the bank? The results are summarized on **Table 15**. A casual examination shows that banks that follow anticipated income theory finance substantial portion of their assets out of shareholders funds (21.18 percent), compared to 14.439 percent of Assets and Liability management theory).

Table15: Comparing Shareholders Funds To Total Assets (S.F/T.A) Ratios of Different Liquidity Management Theories

Analysis of Variance for S.F/T.A					
Source	DF	SS	MS	F	P
ClStra	3	219.7	73.2	1.01	0.401
Error	29	2093.6	72.2		
Total	32	2313.2			

			Individual 95% CIs For Mean Based on Pooled Std Dev	
Level	N	Mean	Std Dev	------+---------+---------+---------+
1	15	16.191	7.460	(---*----)
3	7	21.181	12.386	(-----*------)
4	10	14.439	6.617	(----*-----)
5	1	11.750	0.000	(----------*----------)
				------+---------+---------+---------+
Pooled Std Dev =		8.497		0 10 20 30

Key: 1 = Commercial Loan Theory; 2 = Shiftability Theory; 3 = Anticipated Income Theory; 4 = Asset and Liability Management Theory; and 5 = Hybrid - Anticipated and Commercial Loan Theory.

However, the F-test p-value of 0.401 (though much improved compared to earlier p-values) indicates that there is not quite sufficient evidence (at α= .10) to claim not all means of shareholders funds to total assets ratio are equal. They are statistically equal.

Table 16: Comparing Quick Assets to Total Liabilities (Q.A/T.L) Ratios of Different Liquidity Management Theories

Analysis of Variance for Q.A/T.L%					
Source	DF	SS	MS	F	P
ClStra	3	496	165	0.59	0.624
Error	28	7787	278		
Total	31	8283			
		Individual 95% CIs For Mean			
		Based on Pooled Std Dev			
Level	N	Mean	Std Dev	-------+---------+---------+---------	
1	15	42.86	16.56	(---*----)	
3	7	40.36	10.88	(-----*------)	
4	9	41.25	20.11	(-----*----)	
5	1	63.66	0.00	(----------*----------)	
				-------+---------+---------+---------	
Pooled Std Dev =		16.68		40 60 80	

Key: 1 = Commercial Loan Theory; 2 = Shiftability Theory; 3 = Anticipated Income Theory; 4 = Asset and Liability Management Theory; and 5 = Hybrid - Anticipated and Commercial Loan Theory.

4.11 Liquidity Levels and Different Liquidity Management Theories.

These indicators of liquidity level and implied liquidity risks are quick assets to total liabilities (QA/TL) ratio (table 16) and quick assets to total deposits (Q.A/T.D) ration. See table 17.

The average of QA/TL ratio range from 40.36 percent to 42.86 and appear not to be significantly different expect for the hybrid (5) firm. The F-Test p-value of 0.724 confirms no difference in this ratio across different theories. The QA/TD ratio range from 42.63 percent for asset liability management theory to 44.93 percent for commercial loan theory. Again F-test p-value of 0.630 confirms no difference in the average of this ratio across firms.

Table 17: Comparing Quick Assets to Total Debts (Q.A/T.D) Ratios of Different Liquidity Management Theories

Analysis of Variance for Q.A/T.D					
Source	DF	SS	MS	F	P
CIStra	3	535	178	0.58	0.630
Error	29	8835	305		
Total	32	9370			
			Individual 95% CIs For Mean		
			Based on Pooled Std Dev		
Level	N	Mean	Std Dev	-----+---------+---------+---------+-	
1	15	44.93	17.03	(---*----)	
3	7	44.18	13.33	(------*------)	
4	10	42.63	20.30	(----*-----)	
5	1	66.82	0.00	(----------*----------)	
				-----+---------+---------+---------+-	
Pooled Std Dev =		17.45		40 60 80 100	

Key: 1 = Commercial Loan Theory; 2 = Shiftability Theory; 3 = Anticipated Income Theory; 4 = Asset and Liability Management Theory; and 5 = Hybrid - Anticipated and Commercial Loan Theory

CHAPTER 5

5.0 Summary, Conclusion and Recommendations

Introduction

This was the final chapter in the research project whose main purpose was to summarize the results of the research project that had been undertaken. In the first section a summary of the results from chapter four were given. Thereafter conclusions are then made from the summary of the results and finally recommendations are made on the research findings.

This chapter is therefore a product of long journey into a research project hence the readers are able to establish conclusions drawn by researcher. Areas of further research were also identified by the researcher.

5.1 Summary and Conclusion

The evidence in this study (chapter) confirms that commercial banks use different theory in managing liquidity. The most common theory is commercial loan theory. This confirms how traditional our commercial banks are. The next common theory is the asset and liability liquidity management theory.

Recently, we see banks trying to employ anticipated income approach. For example many large commercial banks are approaching employees of established firms to market their loans against future salaries.

Not surprisingly the most common type is commercial and industrial loans. However, consumer loans are becoming more popular.

The profitability levels do not vary according to strategy. This is expected given that the sampled banks employ nearly all the strategies. Equally, the liquidity levels seem not to depend on particular theories, again because a number of approaches is employed by a particular bank.

We may also conclude that the well-managed bank may properly include in its earning assets reasonable amounts of loans and investments which it is expected will be liquidated in accordance with one of the four theories or a combination of two or more of them. In the event of widespread and large withdrawals in the entire banking system, ultimate liquidity is to be found in the central bank.

5.2 Limitations of this Study

Conceptually the biggest limitation is lack of a clear-cut point between the competing theories. Time limitation and reluctance to fill the questionnaire by some respondents was another factor that negatively impacted this study.

5.3 Recommendation for Further Research.

This was a basic survey. It would be useful researching on each theory on its own in depth. Future study could be selective as to include only listed firms to enable a glimpse as to how the market evaluated different liquidity management strategies.

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APPENDIX 1

QUESTIONNAIRE

Please answer the following questions by marking the relevant box with a tick {√}

SECTION A: BANK/RESPONDENT PROFILE

1. Name of the Bank
   .....

2. Position held in the
   bank.....

3. Number of Years of Service in the bank 0-5 [ ] 6-20 [ ] 20 and above [ ]

4. How important are the following techniques to management of liquidity in your bank:

		Not Important	Important	Very Important
i.	Deposit Insurance	[ ]	[ ]	[ ]
ii.	Reserve Requirements	[ ]	[ ]	[ ]
iii.	Access to Central Bank Lending	[ ]	[ ]	[ ]
iv.	In-house built strategies	[ ]	[ ]	[ ]

		Rarely	Sometimes	Always
5. How often does your bank experience:				
i.	Unexpected utilization of credit?	[ ]	[ ]	[ ]
ii.	Unforeseen deposit withdrawal?	[ ]	[ ]	[ ]

iii. Untimely loan redemption? [ ] [ ] [ ]

iv. Untimely interest payments? [ ] [ ] [ ]

v. Failed or delayed payments? [ ] [ ] [ ]

vi. Liquidity problems associated with change in asset values developments? [ ] [ ] [ ]

6. How often does your bank experience:

vii. Funding or cash liquidity problems? [ ] [ ] [ ]

viii. Asset liquidity problems? [ ] [ ] [ ]

SECTION B: ELEMENTS OF COMMERCIAL LOAN THEORY

i. How important are the following considerations in your banks lending decision?

	Not important	Important	Very Important
ii. Use of loan to complete the processing of goods	[ ]	[ ]	[ ]
iii. Use of loan to bring the goods to the market?	[ ]	[ ]	[ ]
iv. Use of loan to to transfer the goods to the possession of ultimate consumer?	[ ]	[ ]	[ ]
v. Use of loan to provide means of final payment for all material and services involve in the production and marketing of the goods?	[ ]	[ ]	[ ]

vi. What percentage of your loans provides finance for the production and movement of goods?

0-20%	21%-50%	51% and above
[ ]	[ ]	[ ]

SECTION C: ELEMENTS OF SHIFTABILITY THEORY:

	Rarely	Sometimes	Always
i. How often does your customers refinance their loans?	[ ]	[ ]	[ ]
ii. How often does your bank purchase corporate bonds?	[ ]	[ ]	[ ]
iii. Does your bank shift the bonds you hold to other investors?	[ ]	[ ]	[ ]

iv. What percentage of your loan portfolio (advances) would you classify as long term?

0-20%	21%-50%	51% and above
[ ]	[ ]	[ ]

SECTION D: ELEMENTS OF ANTICIPATED INCOME THEORY:

i. To what extent does the following observation apply to your bank?

	Rarely	Sometimes	Always
ii. Substantial credit is advanced for a period of more than one year ?	[ ]	[ ]	[ ]

iii. Repayment are usually made serially over the life of the loan? [ ] [ ] [ ]

iv. Repayment by the borrower are ordinarily made out of future earnings? [ ] [ ] [ ]

v. The loan will customarily be accompanied by written covenant of the borrower to conduct activities in a manner agreed upon by the borrower and your bank?

i. Yes [ ] No [ ]

vi. Does your bank put pressure on the borrower to retire the loan from earning?

i. Yes [ ] No [ ]

SECTION E: ELEMENTS OF ASSET AND LIABILTY MANAGEMENT THEORY

Please indicate the extent to which of the following apply to your bank:

	Disagree	Agree	Strongly Agree
i. The banks objective is to maximize net interest income in the short run?	[ ]	[ ]	[ ]
ii. Your bank manages its balance sheet as to allow for alternative interest and liquidity scenarios?	[ ]	[ ]	[ ]
iii. Your banks use options and futures to manage risk?	[ ]	[ ]	[ ]

iv. Your bank overall strategy is to hold minimum amounts of primary and secondary reserves? [ ] [ ] [ ]

v. Your bank believes in the use of liability side of the balance sheet to achieve optimum liquidity ? [ ] [ ] [ ]

vi. Your bank use liabilities in managing risk exposure? [ ] [ ] [ ]

Which of these loans does your bank offer?

		None	Average	Substantial
vii.	Commercial and Industrial Loans?	[ ]	[ ]	[ ]
viii.	Consumer Loans?	[ ]	[ ]	[ ]
ix.	Real Estate Loans?	[ ]	[ ]	[ ]
x.	Agriculture Loans?	[ ]	[ ]	[ ]

xi. Indicate the percentage of each Loan as a percentage of total loans

		0-20%	21%-50%	51% and above
i.	Commercial and Industrial Loans?	[ ]	[ ]	[ ]
ii.	Consumer Loans?	[ ]	[ ]	[ ]
iii.	Real Estate Loans?	[ ]	[ ]	[ ]
iv.	Agriculture Loans?	[ ]	[ ]	[ ]

Thanking you very much for sparing time to fill this questionnaire

Appendix 2

Introductory letter

NAME OF ORGANIZATION

ADDRESS

Dear Sir/Madam,

RE: Letter of Introduction-Muhammad Ali Loo

I am a student at the University of Nairobi, pursuing Master of Business Administration degree. It is the requirement of the University of Nairobi for a student to conduct a research study in partial fulfillment of the MBA program. My Research topic is: A Survey of Liquidity Management approaches and their effect on profitability of Commercial Banks in Kenya. The research will be conducted on the licensed banks with Central Bank of Kenya and Treasury.

Your bank has been selected in order to gather information to be used for the research study. You are required to fill the questionnaire attached herein. Kindly provide answers to the best of your capability.

The information collected will strictly be used for academic purposes and will be treated in strict confidence. You neither your name nor that of the bank will be disclosed in the research. A copy of the research project will be made available to you on request.

Thanking you in advance for your cooperation.

Yours faithfully,

MBA STUDENT

Appendix 3

LIST OF BANKS REGISTERED IN KENYA

No	BANK	REMARKS
1	African Banking Corporation Ltd	Not Responded
2	Bank of Africa	Responded
3	Bank of Baroda (K) Ltd	Responded
4	Bank of India	Responded
5	Barclays Bank of Kenya Ltd	Responded
6	CFC Bank Limited	Not Responded
7	Chase Bank Limited	Responded
8	Citibank, N.A	Not Responded
9	City Finance Bank Ltd	Not Responded
10	Commercial Bank of Africa Ltd	Responded
11	Consolidated Bank of Kenya Ltd	Responded
12	Co-Operative Bank of Kenya Ltd	Responded
13	Credit Bank Ltd	Responded
14	Development Bank of Kenya Ltd	Responded
15	Diamond Trust Bank Kenya Ltd	Responded
16	Dubai Bank Ltd	Responded
17	EABS	Responded
18	Equatorial Commercial Bank Ltd	Not Responded
19	Equlty Bank	Responded
20	Fidelity Commercial Bank Ltd	Responded
21	Fina Bank Ltd	Responded
22	Giro Commercial Bank Ltd	Responded
23	Guardian Bank Limited	Not Responded
24	Habib AG Zurich	Responded
25	Habib Bank Ltd	Responded
26	HFCK	Responded
27	I &M Bank	Responded
28	Imperial Bank Limited	Not Responded
29	K.C.B	Responded
30	K-Rep Bank	Responded
31	Middle East Bank	Responded
32	National Industrial Credit Bank Ltd	Not Responded
33	NBK	Responded
34	Oriental Commercial Bank	Not Responded
35	Paramount Universal Bank	Responded
36	Prime Bank	Responded
37	Prime Capital & Credit	Responded
38	Southern Credit Bank	Responded
39	Stanbic Bank	Responded
40	Standard Chartered Bank	Responded
41	Transnational Bank	Responded
42	Victoria Commercial Bank	Responded

APPENDIX FOUR
DATA ANALYSIS

CASE	C.C.R.L	C.B.P.B	C.S.B	C.P.L	St%	D.S.A.P
Bank of Africa	2	3	2	3	77.8	3
Bank of Baroda (K) Ltd	1	1	1	2	33.3	2
Bank of India	1	3	1	3	55.6	3
Barclays Bank of Kenya Ltd	2	1	3	2	66.7	3
Chase Bank Limited	3	1	1	2	55.6	2
Commercial Bank of Africa Ltd	3	2	1	2	66.7	2
Consolidated Bank of Kenya Ltd	1	1	1	2	33.3	2
Co-Operative Bank of Kenya Ltd	3	1	1	2	55.6	1
Credit Bank Ltd	2	1	1	1	44.4	2
Development Bank of Kenya Ltd	2	2	2	3	66.7	3
Diamond Trust Bank Kenya Ltd	1	2	1	2	44.4	2
Dubai Bank Ltd	2	1	1	2	44.4	2
EABS	1	1	1	2	33.3	1
Equlty Bank	3	2	2	2	77.8	3
Fidelity Commercial Bank Ltd	1	1	1	1	33.3	1
Fina Bank Ltd	1	1	1	1	33.3	2
Giro Commercial Bank Ltd	2	2	1	2	55.6	3
Habib AG Zurich	2	1	1	1	44.4	2
Habib Bank Ltd	1	1	1	3	33.3	2
HFCK	1	1	1	1	33.3	1
I &M Bank	2	2	1	2	55.6	3
K.C.B	1	1	1	2	33.3	3
K-Rep Bank	2	1	1	2	44.4	2
Middle East Bank	2	1	1	1	44.4	2
NBK	2	2	2	2	66.7	2
Paramount Universal Bank	2	1	1	1	44.4	2
Prime Bank	2	2	1	1	55.6	2
Prime Capital & Credit	3	2	2	2	77.8	2
Southern Credit Bank	3	2	1	3	66.7	3
Stanbic Bank	2	2	2	1	66.7	3
Standard Chartered Bank	2	2	1	2	55.6	1
Transnational Bank	3	2	1	1	66.7	2
Victoria Commercial Bank	2	2	1	3	55.6	2

APPENDIX FOUR
DATA ANALYSIS

CASE	D.R.U.M.S	D.R.B	D.C.B	D.B.P	Ait%	E.B.O
Bank of Africa	3	2	2	0	76.92	2
Bank of Baroda (K) Ltd	1	1	2	0	46.15	2
Bank of India	3	3	2	2	100.00	1
Barclays Bank of Kenya Ltd	2	3	2	2	92.31	1
Chase Bank Limited	2	2	2	2	76.92	2
Commercial Bank of Africa Ltd	3	2	2	0	69.23	3
Consolidated Bank of Kenya Ltd	2	1	2	0	53.85	1
Co-Operative Bank of Kenya Ltd	3	2	2	0	61.54	1
Credit Bank Ltd	2	1	2	2	69.23	2
Development Bank of Kenya Ltd	3	3	2	2	100.00	2
Diamond Trust Bank Kenya Ltd	2	2	2	0	61.54	2
Dubai Bank Ltd	2	1	2	0	53.85	3
EABS	3	1	2	0	53.85	2
Equlty Bank	2	2	2	2	84.62	2
Fidelity Commercial Bank Ltd	2	3	2	0	61.54	2
Fina Bank Ltd	1	2	0	0	38.46	1
Giro Commercial Bank Ltd	3	2	2	0	76.92	3
Habib AG Zurich	2	1	2	0	53.85	3
Habib Bank Ltd	3	1	2	0	61.54	3
HFCK	1	1	2	2	53.85	3
I &M Bank	3	3	2	0	84.62	2
K.C.B	2	1	2	0	61.54	2
K-Rep Bank	1	2	2	0	53.85	3
Middle East Bank	2	1	2	0	53.85	3
NBK	2	1	2	2	69.23	3
Paramount Universal Bank	3	1	2	0	61.54	2
Prime Bank	3	2	2	0	69.23	1
Prime Capital & Credit	2	2	2	0	61.54	2
Southern Credit Bank	3	2	2	0	76.92	2
Stanbic Bank	3	3	2	0	84.62	2
Standard Chartered Bank	1	1	2	2	53.85	3
Transnational Bank	3	2	2	2	84.62	2
Victoria Commercial Bank	3	1	1	0	53.85	2

APPENDIX FOUR
DATA ANALYSIS

CASE	E.M.B.S	E.D.F	E.O.S	E.U.L.S	E.L.M.R	ALiaT%
Bank of Africa	3	3	2	2	1	61
Bank of Baroda (K) Ltd	1	1	2	1	2	39
Bank of India	2	2	2	2	2	56
Barclays Bank of Kenya Ltd	2	1	2	2	2	50
Chase Bank Limited	2	2	2	2	2	56
Commercial Bank of Africa Ltd	3	2	2	3	3	72
Consolidated Bank of Kenya Ltd	1	1	3	3	2	56
Co-Operative Bank of Kenya Ltd	3	1	2	3	3	67
Credit Bank Ltd	2	1	2	1	2	44
Development Bank of Kenya Ltd	3	2	2	2	2	61
Diamond Trust Bank Kenya Ltd	2	2	2	2	2	56
Dubai Bank Ltd	2	1	2	2	1	44
EABS	1	1	3	2	2	50
Equlty Bank	2	1	2	2	1	44
Fidelity Commercial Bank Ltd	2	2	3	2	3	67
Fina Bank Ltd	1	1	1	2	1	33
Giro Commercial Bank Ltd	2	1	2	2	2	50
Habib AG Zurich	2	2	3	2	2	61
Habib Bank Ltd	3	3	2	1	2	61
HFCK	3	1	3	2	2	61
I &M Bank	2	2	1	3	3	61
K.C.B	2	1	3	3	3	67
K-Rep Bank	3	1	1	2	1	44
Middle East Bank	3	1	3	3	3	72
NBK	3	2	2	2	2	61
Paramount Universal Bank	1	1	2	2	2	44
Prime Bank	2	2	2	3	2	61
Prime Capital & Credit	2	2	1	1	2	44
Southern Credit Bank	2	1	2	2	2	50
Stanbic Bank	3	1	2	3	2	61
Standard Chartered Bank	3	3	2	2	2	67
Transnational Bank	3	1	1	2	2	50
Victoria Commercial Bank	3	2	3	3	2	72

APPENDIX FOUR
DATA ANALYSIS

CASE	E.C.I.L	E.C.L	E.R.E.L	E.A.L	E.P.C.I.L	E.P.C.L
Bank of Africa	3	3	2	2	2	3
Bank of Baroda (K) Ltd	3	3	1	1	2	2
Bank of India	3	2	3	3	3	1
Barclays Bank of Kenya Ltd	3	3	3	2	3	3
Chase Bank Limited	3	2	2	2	3	1
Commercial Bank of Africa Ltd	3	2	2	1	3	3
Consolidated Bank of Kenya Ltd	3	2	1	2	3	1
Co-Operative Bank of Kenya Ltd	3	3	3	3	2	1
Credit Bank Ltd	3	2	2	2	3	1
Development Bank of Kenya Ltd	3	2	2	3	3	2
Diamond Trust Bank Kenya Ltd	2	1	2	1	3	1
Dubai Bank Ltd	2	2	2	1	1	1
EABS	3	3	1	1	2	3
Equlty Bank	2	3	2	3	2	3
Fidelity Commercial Bank Ltd	3	2	1	2	3	1
Fina Bank Ltd	2	2	2	2	2	1
Giro Commercial Bank Ltd	2	3	2	1	2	3
Habib AG Zurich	3	2	1	1	3	1
Habib Bank Ltd	2	2	2	1	2	1
HFCK	3	1	3	1	3	1
I &M Bank	3	2	3	2	3	1
K.C.B	3	2	3	2	2	1
K-Rep Bank	3	2	1	3	3	1
Middle East Bank	2	3	1	2	2	3
NBK	3	1	3	3	2	1
Paramount Universal Bank	3	3	1	2	3	2
Prime Bank	2	2	3	1	2	1
Prime Capital & Credit	2	2	2	1	1	2
Southern Credit Bank	3	2	2	2	3	2
Stanbic Bank	3	2	2	3	2	1
Standard Chartered Bank	2	2	3	2	2	2
Transnational Bank	2	2	3	2	2	3
Victoria Commercial Bank	2	3	2	1	2	3

APPENDIX FOUR
DATA ANALYSIS

CASE	E.P.R.E.L	E.P.A.L	STRA	CIStra	R.O.A %	R.O.C.E %
Bank of Africa	2	1	C	1	0.95	6.27
Bank of Baroda (K) Ltd	1	1	C	1	3.16	29.5
Bank of India	2	1	A/C	5	3.19	27.14
Barclays Bank of Kenya Ltd	2	1	A	3	5.61	44.57
Chase Bank Limited	1	1	A	3	2.7	17.48
Commercial Bank of Africa Ltd	3	1	A & L	4	3.59	36.12
Consolidated Bank of Kenya Ltd	1	1	C	1	0.47	2.25
Co-Operative Bank of Kenya Ltd	1	2	A & L	4	2.18	25.98
Credit Bank Ltd	1	1	A	3	3.44	17.6
Development Bank of Kenya Ltd	2	3	A	3	3.98	12.12
Diamond Trust Bank Kenya Ltd	2	1	A & L	4	3.25	24.61
Dubai Bank Ltd	1	1	A & L	4	1.62	5.08
EABS	1	1	C	1	0.53	3.01
Equlty Bank	2	2	C	1	5.51	50.11
Fidelity Commercial Bank Ltd	1	1	A & L	4	1.13	9.12
Fina Bank Ltd	1	1	C	1	1.55	12.79
Giro Commercial Bank Ltd	2	1	C	1	1.16	11.92
Habib AG Zurich	1	1	A & L	4	3.08	25.25
Habib Bank Ltd	1	2	C	1	0.19	1.25
HFCK	3	1	A & L	4	1.55	10.29
I &M Bank	2	1	A	3	4.19	33.5
K.C.B	1	2	C	1	3.42	27.25
K-Rep Bank	2	1	A & L	4	2.91	16.92
Middle East Bank	1	1	C	1	2.94	11.87
NBK	1	1	A & L	4	2.59	24.28
Paramount Universal Bank	1	1	C	1	1.4	17.24
Prime Bank	1	1	C	1	1.83	14.15
Prime Capital & Credit	1	1	C	1	4.52	11.86
Southern Credit Bank	2	2	A	3	0.71	6.07
Stanbic Bank	1	3	C	1	3.57	33.63
Standard Chartered Bank	2	2	C	1	4.7	37.62
Transnational Bank	1	1	A	3	1.8	4.12
Victoria Commercial Bank	2	1	A & L	4	2.98	21.93

APPENDIX FOUR
DATA ANALYSIS

CASE	S.F/T.A %	Q.A/T.L%	Q.A/T.D %
Bank of Africa	15.08	32.31	33.31
Bank of Baroda (K) Ltd	10.73	65.82	67.66
Bank of India	11.75	63.66	66.82
Barclays Bank of Kenya Ltd	12.59	32.73	35.14
Chase Bank Limited	15.43	46.55	48.17
Commercial Bank of Africa Ltd	9.93	58.85	62.74
Consolidated Bank of Kenya Ltd	21.01	29.25	31.34
Co-Operative Bank of Kenya Ltd	8.38	36.29	38.02
Credit Bank Ltd	19.53	46	48.42
Development Bank of Kenya Ltd	32.83	41.44	51.3
Diamond Trust Bank Kenya Ltd	13.19	33.33	37.1
Dubai Bank Ltd	31.85	39.51	41.95
EABS	17.64	29.83	30.64
Equlty Bank	10.99	35.73	38.99
Fidelity Commercial Bank Ltd	12.39	26,86	27.57
Fina Bank Ltd	12.1	22.49	23.37
Giro Commercial Bank Ltd	9.71	38.04	38.82
Habib AG Zurich	12.2	82.08	87.61
Habib Bank Ltd	15.06	82.33	85.09
HFCK	15.03	25.46	25.94
I &M Bank	12.51	28.19	29.44
K.C.B	12.56	37.07	38.55
K-Rep Bank	17.2	24.18	31.59
Middle East Bank	24.76	38.1	41.54
NBK	10.65	18.92	20.54
Paramount Universal Bank	19.37	63.4	65.37
Prime Bank	12.61	35.87	39.01
Prime Capital & Credit	38.13	31.1	31.96
Southern Credit Bank	11.64	29.5	30.39
Stanbic Bank	10.61	48.73	50.47
Standard Chartered Bank	12.5	52.9	57.8
Transnational Bank	43.74	58.11	66.37
Victoria Commercial Bank	13.57	52.59	53.28

Appendix 4

Data analysis

KEY NOTE

SECTION A- BANK RESPONDENT

2.P.H-Position Held

3.N.Y.S-Number of Years in service

4.D.I- Deposit Insurance

4.R.R- Reserve Requirements

4.A.C.B.L- Access to Central Bank Lending

4.I.B.S- In-house built strategies

5.U.U.C- Unexpected utilization of credit

5.U.D.W-Unforeseen deposit withdrawal

5.U.L.R- Untimely loan redemption

5.U.I.P- Untimely interest payments

5.F.D.P- Failed or delayed payments

5.L.P.A - Liquidity problems associated with change in asset values developments.

6.F.C.L- Funding or cash liquidity problems.

6.A.L.B- Asset liquidity problems.

SECTION B- COMMERCIAL LOAN THEORY

B.U.L.C- Use of loan to complete the processing of goods

B.U.L.B- Use of loan to bring the goods to the market.

B.U.L.T.G- Use of loan to transfer the goods to the possession of ultimate consumer.

B.U.L.P.F- Use of loan to provide means of final payment for all material and services involve in the production and marketing of the goods.

B.W.P.Y- Percentage of your loans provides finance for the production and movement of goods.

SECTION C-SHIFTABILITY THEORY

C.C.R.L- How often does your customers refinance their loans.

C.B.P.B- How often does your bank purchase corporate bonds

C.S.B- Does your bank shift the bonds you hold to other investors.

C.P.L-What percentage of your loan portfolio (advances) would you classify as long term.

SECTION D-ANTICIPATED INCOME THEORY

D.S.A.P- Substantial credit is advanced for a period of more than one year

D.R.U.M.S- Repayment are usually made serially over the life of the loan

D.R.B- Repayment by the borrower are ordinarily made out of future earnings

D.C.B- The loan will customarily be accompanied by written covenant of the borrower to conduct activities in a manner agreed upon by the borrower and your bank

D.B.P- Does your bank put pressure on the borrower to retire the loan from earning.

SECTION E -ASSETS AND LIABILITY MANAGEMENT THEORY

E.B.O -The banks objective is to maximize net interest income in the short run

E.M.B.S- Your bank manages its balance sheet as to allow for alternative interest and liquidity scenarios.

E.D.F-Your banks use options and futures to manage risk

E.O.S- Your bank overall strategy is to hold minimum amounts of primary and secondary reserves.

E.U.L.S- Your bank believes in the use of liability side of the balance sheet to achieve optimum liquidity.

E.L.M.R- Your bank use liabilities in managing risk exposure.

Which of these loans does your bank offer?

E.C.I.L- Commercial and Industrial Loans.

E.C.L - Consumer Loans.

E.R.E.L- Real Estate Loans

E.A.L- Agriculture Loans

E.P.C.I.L- Commercial and Industrial Loans.

E.P.C.L Consumer Loans.

E.P.R.E.L- Real Estate Loans.

E.P.A.L- Agriculture Loans.