

**LIQUIDITY MANAGEMENT IN COMMERCIAL BANKS  
THE CASE OF THE PEOPLE'S BANK OF ZANZIBAR LTD (PBZ  
LTD)**

**By**

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**A proposal submitted in partial/Fulfilment of the Requirements for the award of Degree of Master of science in Accounting and Finance (Msc.A&F) of Mzumbe University.**

**2013**

**CERTIFICATION**

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a Dissertation/Thesis entitled **Liquidity Management in commercial banks: The case of People’s Bank of Zanzibar Ltd (PBZ LTD)**, in partial fulfillment of the requirements for award of the degree of the Master of Science in Accounting and Finance of MzumbeUniversity.

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## **DEDICATION**

This work is dedicated to my beloved wife Mrs. Safia Salim Handhal for every inspiration she extended to me.

## **LIST OF ABBREVIATIONS AND ACRONYMS**

ALCO	Assets and Liabilities Management Committee
ANOVA	Analysis of Variance
BOT	Bank of Tanzania
PBZ	People's Bank of Zanzibar Ltd
SPSS	Statistical Package for Social science
TISS	Tanzania Interbank Settlement System
TZS	Tanzania Shillings

## **ABSTRACT**

This study examined liquidity management in commercial banks. The overall objective of the study was to empirically review the soundness of liquidity management for the People's Bank of Zanzibar Ltd. In this manner the research sought to fill the gap between incoming and outgoing cash flow in the commercial banks which has typically focused on both liability side and assets side of bank.

Considering the nature and complexity of study, senior officers involved to participate in research. A non-experimental mainly quantitative research design was used to review soundness of liquidity management of the bank. Although study was quantitative in nature but qualitative techniques were used to assist interpretation and clarification of the results.

The data obtained from the Primary and Secondary sources were statistically analyzed using SPSS version 16 program and were sorted and grouped in tables of percentages and frequency distribution. Hypotheses were statistically tested through One way Anova.

The study concluded that PBZ operates with excess liquidity and holds more liquid assets, to some extent, bank to hold liquid assets may reducing its liquidity risk. However, this benefit can eventually be outweighed by the opportunity cost of holding such comparatively low yielding liquid assets on the balance sheet. Liquid assets such as treasury bills and treasury bonds in which PBZ normally holds as alternative for issuing loans sometime may be unproductive, thereby such profit or benefits derived from such instruments be less than profit of illiquid assets. Finally the study recommended that bank should put more emphasis on investing excess funds in loan rather than other investments so as to boost their return.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the problem**

The term liquidity is often used in multiple contexts. An asset's liquidity can be used to describe how quickly, easily and costly it is to convert that asset into cash (Berger & Bouwman, 2008). The starting point for liquidity management for many banks is to consider the extent to which liabilities falling due are matched by maturing assets (Chaplin, Emblow and Michael, 2000).

Liquidity management in general and its organization in particular are of utmost importance since the financial crisis of 2007/09 that started as liquidity crisis and rose doubts on the soundness of the liquidity management of many banks (Basel Committee on Banking Supervision, 2008). Managing liquidity is a fundamental component in the safe and sound management of all banks.

Due to the fact that the value of the new deposit does not synchronize or correspond with the customers' withdrawal needs at any particular time, there are uncertainties in the asset management of the commercial banks. These uncertainties become complex as depositors make their withdrawals on demand or at short notice.

The banks regulator (Bank of Tanzania) has tackled some of the liquidity management issues confronting banks by setting a framework in The Banking and Financial Institutions (Liquidity Management) Regulations, (2008); the framework offers useful guidance on risk and management issues. A related challenge is to model more effectively contingent cash flows, including credit facilities. It will also be important for the authorities to monitor the behavioural effects of the new Basel Accord.

Sound liquidity management involves prudently managing bank assets and liabilities- both on- and off-balance sheet. In a bank, sound liquidity management is established to ensure that appropriate relationship of cash inflow to approaching cash outflows is observed. This needs to be supported by a process of liquidity planning which assesses potential future liquidity needs, taking into account changes in economic,



regulatory or other operating conditions. Such planning involves identifying known, expected and potential cash outflows and weighing alternative asset/liability management strategies to ensure that adequate cash inflows will be available to the bank to meet these needs.

In general the liquidity of commercial banks in Tanzania are more likely to go under shock if BOT will not review their liquidity requirements for telecommunication companies that have started to play banking role in the country. In the light of these changes in market structure and other relevant developments daily cash inflow in commercial banks have been affected by the use of M-pesa, Airtel money, Ezyepesa and Tigopesa. BOT should monitor the liquidity of the system in aggregate, and in particular to telecommunications companies.

In a Tanzanian context, commercial banks have grown dramatically, using a large part of their liquidity to secure money. Thus, efficient management of liquidity is of vital importance for both banks and regulatory bodies.

The People's Bank of Zanzibar Ltd is a commercial bank with 100% of its shares owned by government. It is headquartered in Zanzibar and has several branches in Zanzibar, Dar essalaam and other parts of mainland. The bank receives funds from customers through transaction deposits such as demand deposits, savings deposits and time deposits. The PBZ Ltd is organized and operated for the purpose of serving the banking needs of individuals, business organizations, institutions, associations, and government entities.

The bank aims at identifying and meeting those banking needs through a wide range of quality products and services through user friendly, efficient delivery systems designed to maximize safety and soundness, customer loyalty, development and productivity of human resources, and the return to the shareholders.

The core values of PBZ are trust, respect and confidence of customers. To promote those values, all information regarding personal business and financial affairs of our customers will strictly be kept confidential. All employees will ensure that

records and information are safeguarded and that unauthorized access or use is prohibited.

In order to achieve the overall objectives of PBZ, a number of processes need to be undertaken. One of those processes is the management of liquidity. To achieve a balanced liquidity position while at the same time ensuring optimal utilization of the bank's funds, an appropriate committee was established to oversee the overall result of Assets and Liabilities Management. This committee is known as the Asset and Liability Management Committee (ALCO).

Previously PBZ generally saw a need to invest customers' deposits in financial instruments such as treasury bills, and treasury bonds, holding such liquid assets aim to ensure a steady turnover in stock of liquid assets, so that a trade to counter liquidity difficulties would not arouse suspicion. However from 2002 PBZ established a new product of consumer loans, and it has vested much of its efforts in holding illiquid assets to increase bank profitability and growth prosperity. During this period, the liquidity of the bank has been fluctuating from time to time, depending on the general condition of economic and banking industry.

## **1.2 Statement of Research problem**

Following the aftermath of world financial crisis, liquidity has become instrumental factor and many scholars have written on liquidity management. A few studies have considered the gap between incoming and outgoing cash flows in the commercial banks.

Many studies incline on liquidity creation by focusing on excess liquidity which is the liability side of commercial banks without concentrating on cash outflow.

In a Tanzanian context, the most notable papers written on liquidity management were that of Aikaeli (2006) who wrote on determinants of excess liquidity in commercial banks in Tanzania and Qin &Pastory (2012) who wrote on comparative analysis of commercial banks liquidity position.

The studies of Aikaeli (2006) and Qin & Pastory (2012) have both based on liquidity of commercial banks in Tanzania but they failed to address the needs for banks to properly manage liquidity problems arising from day to day operations. Their researches also were generalizing the outcome of commercial banks on comparative basis; this led to utilize secondary data as the source of data collection. The explanation as to how bank can be responsible for managing liquidity was not analyzed and hence they were not able to solve liquidity management challenges arising from commercial banks such as panic runs and consequent illiquidity.

Therefore the researcher is going to cover the research gap observed from the above two researches by examining on the way in which the People's Bank of Zanzibar Ltd meet day to day cash outflow commitments.

### **1.3 Research questions.**

The research was guided by the following research questions.

#### **1.3.1 Main research question**

To what extent does PBZ ltd manages the liquidity problems that affect the banks' sustainability and growth?

#### **1.3.2 Specific research questions**

- i) How is liquidity management integrated at PBZ Ltd?
- ii) In what ways PBZ Ltd manage liquidity problem?
- iii) To what extent does bank meet all payment obligations to customers?

### **1.4 Objectives**

#### **1.4.1 Main research objective**

To empirically review the soundness of liquidity management for the People's Bank of Zanzibar Ltd

#### **1.4.2 Specific objectives.**

- 1) To determine the extent to which liquidity management is integrated in the PBZ, for the purpose of facilitating timely identification, measurement and reporting of the liquidity risk;

- 2) To assess the means by which PBZ uses to overcome the overall liquidity problem.
- 3) To demonstrate operational ability of the bank to meet all payment obligations as they become due.

### **1.5 Significance of the study**

This study is expected to have following significances:

1. The study is partial fulfillment of the conditions for the award of Masters Degree of the researcher.
2. The study will increase knowledge of the researcher in the area of liquidity management of a bank.
3. Findings from the study may provide feedback to the organization about sound and prudent liquidity management policies and contingency plans and determine how liquidity in the banking system is vital and stability.
4. The results of this study will provide empirical framework that would further contribute to additional enquiry for other researchers who need the inner concept of the same study.

### **1.6 Scope of the study**

This study was examined the soundness of liquidity management in the People's Bank of Zanzibar. The study was conducted at the Urban District of Zanzibar, Chakechake Pemba and Dar es Salaam. The regions selected were only regions which have large branches of the bank; hence the area was reliable for conducting this study.

### **1.7 Limitations**

This research was limited to the organization and departments constituting the case study. This is due to complexity of the study of liquidity management especially to get liquidity variables, time limit framework and financial capability.

This study was executed using field data and secondary data collected from People's Bank of Zanzibar Ltd. This was found proper in order to have an in-depth understanding of the subject matter. However, it is acknowledged for primary data only senior officers were involved. In addition, currently the country has 50 banks, in this particular; care must be taken in generalizing the finding of this study to all commercial banks in Tanzania.

### **1.8 Delimitations.**

The researcher however, to minimize the above constrains, concentrated more of his work on liquidity management with its effects towards the organizational growth and stability within the period not more than 9 years to date. Also the similarity of functions and services provided by banks to their customers concludes the study to be effective even to other commercial banks.

### **1.9 Organisation of the Study**

This study is organized into five chapters. Chapter one outlines a background of the problem, statement of the research problem, research questions, objectives of the study, significance of study, scope of the study, limitations and delimitations. Chapter two describes theoretical review, literature review and conceptual framework of the study. Chapter three discusses research methodology. Presentation of study results is covered in chapter four. Chapter five presents discussion and conclusion of the results including summary, conclusion and policy implications.

## **CHAPTER TWO.**

### **LITERATURE REVIEW**

#### **2.1 Introduction.**

This chapter presents an overview of previous works related to liquidity management in commercial banks that provide the necessary background for the purpose of this research. A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Literature review is the reading of any type of previous work which relates to a selected topic. The researcher performed review of existing literatures to support the study undertaken in this dissertation.

#### **2.2 Theoretical review**

##### **2.2.1 Liquidity**

Liquidity is the ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses (Basel Committee on Banking Supervision, 2008), these obligations is usually met through cash inflow supplemented by assets that are readily convertible into cash.

Definition of liquidity goes beyond to measure relative amount of asset in cash or which can be quickly converted into cash without any loss in value available to meet short term liabilities. Liquidity helps bank to avoid liquidation with its attendant problems of not meeting depositors' withdrawals. Liquid assets means cash on hand , current account balance and currency deposits with the Banks as shown in the books of the Bank , balances with other banks with maturities of seven days or less or withdraw able on demand , cheques and items for clearing , foreign currency notes and coins including gold , treasury bills and other government securities maturing within one year and as long as they are unencumbered, commercial bills and promissory notes discounted at the Bank and such other assets as the Bank may determine(BOT, 2008).

The definition above implies that, as liquidity increases, the probability of technical insolvency is reduced. Bank has a potential of appropriate liquidities when it's in

condition to obtain the funds immediately and at a reasonable cost, when these are necessary.

In commercial banks liquidity refers to the reserve of cash, securities, a bank ability to convert an asset into cash, and unused bank lines of credit as well as unutilized overdraft, the faster the conversion the more the liquid is the asset. Liquidity must be sufficient to meet all maturing unsecured debt obligations due within a one year time horizon without incremental access to the unsecured market, probably the most critical issue to examine for the bank ability to meet obligation.

### **2.2.2 Liquidity Management**

Liquidity management refers to the planning and control necessary to ensure that the organization maintains enough liquid assets either as an obligation to the customers of the organization so as to meet some obligations incidental to survival of the business or as a measure to adhere to the monetary policies of the central bank. For a commercial bank to plan for or manage its liquidity position, it first manages its money position by complying with the legal requirement. Actually, management of money position is essential if a bank must avoid excesses or deficiencies of required primary reserves.

Where there is a decline in market price of securities or where additional funds needed to correct the bank reserve position are for a very short time, it will be definitely expensive to sell securities than to borrow from another bank.

Moreover, it may be more desirable to borrow for bank's liquidity needs than to call back outstanding loans or to cancel or place embargo on new loans, a situation that will reduce the existing and potential customers of a bank. Commercial banks are expected to maintain certain levels of reserves. These reserves are statutory requirements stipulated by the central banks specifying the cash reserves equal to certain fraction of the banks' deposits or loans and advances which bank must maintain.

Managing liquidity in a bank is basically the most component in safe and sound management. Hence the objectives of liquidity management includes:

- (a) Honouring all cash outflow commitments (both on- and off-balance sheet) on an ongoing, daily basis;
- (b) Avoiding raising funds at market premiums or through the forced sale of assets; and
- (c) Satisfying statutory liquidity and statutory reserve requirements

Although the particulars of liquidity management will differ among banks depending upon the nature and complexity of their operations and risk profile, a comprehensive liquidity management programme requires:

- (a) Establishing and implementing sound and prudent liquidity and funding policies; and
- (b) Developing and implementing effective techniques and procedures to monitor measure and control the institution's liquidity requirements and position.

In its work on the supervision of liquidity, the Basel Committee (2000) has focused on developing a greater understanding of the way in which banks manage their liquidity on a global consolidated basis. Recent technological and financial innovations have provided banks with new ways of funding their activities and managing their liquidity. In addition, a declining ability to rely on core deposits, increased reliance on wholesale funds, and recent turmoil in financial markets globally have changed the way banks view liquidity. All of these changes have also resulted in new challenges for banks.

### **2.2.3 Liquidity Management and Bank**

Banks and liquidity are very closest concepts. Normally banks require liquidity to protect themselves against illiquid assets. In other words in any bank illiquid assets are funded by liquid assets and if there is mismatch arising between the two, expose bank to liquidity risk.



The survival of banks therefore depends on how liquid they are since illiquidity being a sign of imminent distress and can easily erode the confidence of the public in the banking sector and results to down deposit.

Peculiarly in dealing with liquidity management based on how unexpected shortfall between cash outflow and cash inflow is addressed. Recent event was of January 2009 when BOT increased the reserve requirement on government deposits held in commercial banks and no longer permitted the use of cash-in-vault to meet required reserves, leading to liquidity shortages for some banks and a spike in money market rates. Liquidity returned to ample levels in April 2009, when the BOT eased its monetary policy stance to encourage the flow of credit.

Such and other incidences affect the commercial banks negatively that raise the need for managing liquidity. Indeed precautionary balances in the commercial banks may lead them not to suffer from liquidity problem and remove the chance of unexpected shortfall. In this scenario commercial banks to hold huge amount of liquidity would imply that it is trading off enormous risks related to the existing vulnerable investment avenues whereas shortage of liquidity would imply that customers may not get their money at call. Both of these two situations may results from mismanagement of liquidity.

Mishkin (2001) explains that banks keep excess reserves as an insurance against the costs associated with deposit outflows. He argues that the higher the costs associated with deposits outflow, the more the excess reserves banks want to hold.

#### **2.2.4 Bank liquidity and other institutions/companies.**

Other financial institutions and companies depend on the liquidity position of commercial banks. Banks provide financing interms of loans and overdraft to these institutions or companies to enlarge working capital of their business. For this reason, commercial banks stand to be significant components in the country's economy. Moreover the functioning of the capital markets and money market depends much on the liquidity position of the commercial banks. To ensure the

activities of commercial banks does not hampered there is a need to confirm on the liquidity position of commercial banks (BOT, 2009)

### **2.2.5 Liquidity risk**

Liquidity risk can be defined as the risk of being unable either to meet their obligations to depositors or to fund increases in assets as they fall due without incurring unacceptable costs or losses (Ismail, 2010:230). This risk occurs when the depositors collectively decide to withdraw more funds than the bank immediately has on hand (Hubbard, 2002:323), or when the borrowers fail to meet their financial obligation to the banks. In the other words, liquidity risk occurs in two cases.

Firstly, it arises symmetrically to the borrowers in their relationship with the banks, for example when the banks decide to terminate the loans but the borrowers cannot afford it. Secondly, it arises in the context of the banks' relationships with their depositors, for example, when the depositors decide to redeem their deposits but the banks cannot afford it (Greenbaum and Thakor, 1995:137).

The strategy for financing liquidity risk represents a key aspect of liquidity management, being materialized particularly in deposits and loans on the market. Debts and diversified funding sources usually indicate that a bank has a well developed liquidity management. Banks holding deposits portfolio in stable and high varied value are likely to face liquidity problems less than the banks without such deposits.

A cardinal principle of liquidity risk management lies in diversifying the deposits in terms of number of clients individuals/corporate, the geographical distribution, the types of accounts and instruments, the maturity spectrum. The diversity insures a proper stability and avoids the output of funds in a certain day or over a specific period. Assessing the structure, type and condition (stability and quality) of deposits is a starting point for assessing risk and liquidity.

Liquidity risks can arise from specific individual products or business lines, meaning that an overall framework is required for total liquidity management. Some of these risks can arise from contingent commitments – which may be contractual or non-

contractual (where the reputational costs of not meeting that commitment are sufficiently severe as to make them effectively contractual). Liquidity risks and credit counterparty risks are inherently interrelated, and liquidity risk can easily transform into solvency risk for an institution.

Some questions which financial institutions need to address in examining their liquidity management arrangements include the following:

- (a) How is liquidity risk of new (and existing) products to be measured?
- (b) What liquidity risk costs should be incorporated into the funding costs of products (and how do internal systems achieve this)?
- (c) How are all potential liquidity risks (such as contingent commitments and lines of credit provided) appropriately incorporated into centralized liquidity planning and management?

#### **2.2.6 Assets and Liability Management Committee (ALCO)**

The banks which emphasize the liquidity normally implement a structure for managing liquidity from ALCO (Assets and Liabilities Management Committee) and includes the responsibility to establish a liquidity policy and decision – making to the highest level of management.

Assets and liability management involves an overall coordinated management of the entire portfolios of the bank. The process is increasingly becoming important due to the deregulation of the banking business and the resulting competition that underscores the need for an increase and engagement of liabilities in a manner that result in spread maximization, as well as in controlled exposure to related risks.

Particularly ALCO involves the following:

- (a) Manages and monitors the daily liquidity position and collaterals on the asset and liability sides;
- (b) Detects any liquidity imbalance;
- (c) Determines strategies to mitigate liquidity imbalance; and

- (d) Maintains good relationships with external parties to cooperatively manage and anticipate liquidity pressures.

### **2.2.7 Sources of Liquidity in Commercial banks**

Potential sources of liquidity include the following:

(a) Holding “cash” or near-cash assets. This is generally perceived to be expensive – because providers of funds to the institution do not adjust downwards their required rates of return sufficiently to reflect the lower risk associated with higher liquidity. As financial markets have developed, cash holdings have fallen as a form of liquidity management – although there has been clear evidence of a flight to cash (such as Central Bank deposits) during the uncertain times of the subprime crisis.

(b) Holding readily marketable securities (financial assets). The sub-prime crisis has exposed the shortcomings in such a strategy for coping with market wide liquidity crises. It involves taking on market risk (due to volatility in the market prices of those assets), with the risk of having to sell into a depressed market. In a time of crisis, when many organizations are pursuing the same strategy, the cost can be significant – and particularly so if markets freeze up as has happened during the crisis.

(c) Holding securities which can be pledged as collateral for short term borrowings. The repurchase (repo) market, in which securities are sold and simultaneously repurchased for delivery at a future date, has become an important tool for liquidity management of this sort.

(d) Having in place lines of credit or other arranged borrowing facilities. The ability to draw on a committed line of credit or overdraft facility from another institution will typically involve incurring some cost for establishment and maintenance of that facility in addition to the cost of borrowing. Another option is to have facilities in place which enable the organization to issue securities (such as commercial paper) into the capital market. In some cases this may also be achieved by having an option

attached to existing securities on issue which enables the issuer to extend their maturity.

(e) Having at call or short term loans outstanding to other entities which can be called to provide cash when needed. The risk here is that such loans involve counterparty risk – and calling such loans may increase the likelihood of default if there is widespread stress in the financial market. Often, such loans may be collateralized by marketable securities pledged by the borrower against the loan (such as via a loan made as a reverse repo). This reduces the risk of the borrower defaulting, but leads to potential exposure to market risk if default occurs and the value of the security has declined. Consequently, ensuring that margin requirements are continually met and the value of collateral maintained above the loan value becomes an important operational requirement.

(f) Having sufficient credit rating and standing with potential counterparties to be able to borrow at short notice in inter-bank markets. This is an important component of daily liquidity management in which banks with projected surpluses and deficits in their desired settlement account balances at the Central Bank trade with each other to correct those imbalances. Table 1 provides more detail on potential sources of “funding liquidity”

(g) For banks, the ability to access “Lender of Last Resort” loans or use discount window facilities at Central Banks provide further potential, albeit costly, sources of liquidity.

### **2.3 Empirical literature**

In empirical review few researchers have been concentrating on analysis of liquidity management in commercial banks due to difficult of its variables being publicly available.

Liquidity has been managed with greater vigilance and an emphasis on ensuring availability for strategic purposes. Also a key enabler in controlling counterparty risk

from the operational perspective has been to adopt bank-agnostic platforms that provide real-time reporting and open standards of transactional connectivity.

Over the past couple of years new global banking regulations have significantly reduced the banks' appetites for providing liquidity to their corporate clients. The lack of availability has also led to major reviews of corporate liquidity programmes. Already companies are increasing their use of the bond markets and other sources to raise the funding necessary to replace the liquidity denied by their banks. There is a part of the natural evolution of the market post-crisis. Yet, many companies still view bank funding as their main source of liquidity, though there is very clear evidence of a gradual post-crisis move towards greater use of the bond markets. This, combined with the fact the banks are moving to a model where individual pieces of business must be profitable stand-alone, including the cost of new levels of regulatory capital in the case of lending, means treasurers have no choice but to develop a better understanding of how banks price their credit. The lack of availability of liquidity has also led to companies insisting on greater cash visibility reporting, not just on a daily but an intra-day basis wherever possible, and to centralizing liquidity management regionally or even globally, taking a much broader view.

Each bank has to have an approved strategy for the operational management of the liquidity, a strategy that must be communicated within the organization, because in many banks, the liquidity management is no longer the entire responsibility of the treasury. New product or business strategies, for example, commercial loans convert into shares to be sold to investors or the collapse of the information system or information may have an impact on liquidity risk. Therefore all entities with impact upon the liquidity have to know the liquidity strategy and to operate according to the procedures and the organization policies. The liquidity banking strategy has to present specific policies, relevant to liquidity management such as assets and liabilities aspects of liquidity risk management, liquidity management in different currencies. The liquidity management is connected to the net financing (future needs of liquidities) both short-term and long term, a bank can raise its level of liquidity through asset management, debt management or (and most often) a mix of the two.

Management of assets in this case includes the potential to be sold and used as collateral that would increase the incoming cash-flow. Traditionally, many banks, mostly small sized, have covered their liquidity needs by manipulating the assets structure based on the stock of liquid assets, thus having a small influence on debt.

In order to maintain liquidity banks which are based solely on asset management are concentrating on the price adjustment, credit availability and the level of liquid assets that they keep. Their number is however, is rapidly decreasing, because of the evolution of the banking markets evolve. Often, seasonal factors cause increasing demand for loans from the resources available, thus leaving the banks with the alternative to meet liquidity sources through debt on the money markets. Therefore, the bank can cover its liquidity needs through debt management this may be achieved by increasing debt and/or short-term deposits, by increasing the debt maturity and ultimately increasing the capital. If for small banks, direct loans from the market are not possible or are under contract for the emergency removal of a liquidity crisis, for high prices, major banks, international banks, holding banks have as a main source of liquidity loans in favorable market conditions, since, liquid assets have a major opportunity cost for these banks and are regulated by the requirements of the treasury management (minimum book binding).

A major difference between liquidity of greater banks and the small sized ones is that, beside the deliberate determination of the asset balance part, the higher banks can control their level of debt better. Therefore they have a larger variety of options that would select the most inexpensive method of raising funds from the monetary market as a source for discretionary purchasing funds on a short term, based on the interest rate competition process that can help meet liquidity needs.

Although the acquisition of funds on the market at a competitive cost would allow profitable banks to satisfy increasing demand of customers for loans, a wrong or unsuitable implementation of debt management can have hard consequences, materialized in risks associated with the liquidity management based on market financing, the funds could not always be available when needed; if the market losses

confidence in a bank, its liquidity will be threatened; the concern of the banks to obtain funds at the lowest possible cost and insufficient attention toward maturity distribution may enhance much exposure of the bank to the risk of fluctuations in interest rates.

Another challenge for liquidity management is the contingent liabilities. Any bank should pay special attention to the influences of off-balance elements (contingent liabilities), such as bank guarantees, on the cash-flow. In particular, during unsure periods, these can generate significant outflows of funds, output which generally does not depend on conditions of the bank. During a macroeconomic crisis generated by the use of letters of credits, it is highly probable that this will lead to bankruptcy.

Associated with both forms of liquidity is the idea of liquidity risk, the harmful consequences of illiquidity. The Bank of England Financial Stability Report (Bank of England (2007)) finds that trading (or market) liquidity risk is present when a trader or firm cannot easily offset or eliminate a position without significantly affecting the market price. This presupposes that the firm needs to take these actions for some strategic or regulatory reason. If the firm can simply hold on to the position, the liquidity risk, which is a feature of the prevailing market, may not materialise.

The present report is concerned with the effect of trading (market) liquidity on asset prices. However, it is worth pointing out that market and funding liquidity are linked, particularly in crises where their interaction can be mutually reinforcing and lead to a liquidity spiral (Brunnermeier and Pedersen (2009); Bank of England (2007)). Firms that have difficulty obtaining funding may have to sell large asset holdings to satisfy cash-flow needs and this in turn can contribute to illiquidity in markets, forcing prices lower, distorting asset valuations on the balance sheet and in turn making funding even more difficult to obtain. Such liquidity spirals affect multiple market participants and contribute to systemic risk across multiple asset classes.

In Treasury markets Amihud and Mendelson (1986) provide evidence that average portfolio risk-adjusted returns increase with their bid-ask spread and that the slope of the return-spread relationship decreases with spread. Gouriéroux et al. (1999)



propose a microstructure model whose variables are spreads, trading volumes and volatilities to explain periodic fluctuations in market liquidity. Fleming (2003) examines various liquidity measures and argues that yield variation in the absence of public information is due to inventory effects. Brandt and Kavajecz (2004) analyse the Treasury market through the relationship between order-flow liquidity and yields. Their results suggest that 26% of the daily variation in yields can be explained by order-flow imbalances. Cohen and Shin (2003) apply a similar approach and find a significant impact of order-flow imbalance on the treasury security prices.

O'Hara (2003) presents an asymmetric information asset pricing model and argues that current asset pricing theory ignores the existence of information asymmetry in the market. She shows that assets which require access to private information for valuation also require higher equilibrium returns. Conversely, assets which can be valued based on publicly available information are shown to require lower equilibrium returns.

Chordia et al. (2001) analyse U.S. equity markets using daily data on trading activities (effective spreads, market depth and volume and number of daily transactions) over an extended period. They argue that liquidity has a direct link to corporate costs of capital. Analysing Treasury bond and equity markets simultaneously, Chordia et al. (2005) provide evidence of a theoretical linkage between the liquidity in these two markets.

If there is a separate bank lending channel, one should see the banks, which can offset the effects of tighter liquidity, would have to squeeze their loan portfolio less than the ones which can not. They conjecture that the bank size is closely and positively related to banks' ability to raise nonreservable funds. Their results show that in response to monetary tightening small banks shrink their loan portfolio more compared to large banks, supporting the lending view.

Along with the bank size, several other variables resembling banks' ability to insulate themselves from lending channel have been used in the literature. Banks' capitalizations and liquidity positions are among the most widely used variables. The intuition for the former is that well-capitalized banks can replace the contraction in

deposits more easily as they would be perceived as less risky (Kishan and Opiela, 2000). For the latter, liquid banks are supposed to alleviate the need for adjusting loan portfolio by drawing down cash and securities (Gambacorta, 2005, Kashyap and Stein, 2000).

In another study supporting the bank lending view for Malasia, Zulkey et al. (2010) demonstrates that bank capitalization and bank liquidity are the sources of asymmetric response of banks to monetary policy stance. Takeda et al. (2005) tests the bank lending channel for Brazil by using both interest rates and reserve requirements to resemble monetary policy stance. They found that although banks' reaction do not direct across banks in response to interest rate changes, larger banks are more strongly enacted from reserve requirement ratio (which penalizes larger banks more) increases. For Turkish economy, Brooks (2007) finds that liquidity is a significant variable for banks in determining their lending behavior in response to tighter monetary conditions. This empirical work considers bank lending targeting framework and analyzes whether bank characteristics result in differential responses to contractionary monetary policy (taking the form of hike in policy rate and direct liquidity withdrawals) in mid 2006. According to her results, banks responses differ significantly and liquidity emerges as the most important variable to affect banks' responses in Turkey for that period.

While empirical studies seem to be dominantly in favor of bank lending channel, especially for emerging economies, some recent papers raise strong objections claiming that bank lending channel could not be operative targeting regime. This view claims that central banks do not need to adjust the reserves when they decide to change the policy rate. Policy rate is simply announced and liquidity is supplied inelastically from ongoing rate. Hence, the monetary policy operating through interest rates does not directly affect bank's liabilities. This line of objection is directed to the first premise of the lending view, namely the direct relation between the policy rate and reserves (and so deposits).

Lending view states implicitly or explicitly that bank liquidity is crucial. According to survey on Turkish banking system (Alper et al. 2011), both bank liquidity and

system wide liquidity are important on bank lending. Hence, if central banks can manipulate banks' liquidity positions bank liquidity is important in bank lending, then central banks can steer the economy by affecting credit growth.

Adjustments in liquidity management due to externally changed conditions are studied in Spindt and Tarhan (1980). Chen and Mazumdar (1999) analysed the role of loan sales and purchases as a new liquidity management instrument. In Schmid (2000) and Ferstl and Weissensteiner (2008) the authors discussed an approach for the optimal management of (independent) cash flow shocks using short-term funds and investments by means of a stochastic programming approach.

Studies indicates that banks balance their liquidity risk and their role as a liquidity creator by balancing their demand deposit accounts and their amount of undrawn credit lines; banks that did so fared better financially (Gatev, Schuermann, & Strahan, 2007), the same phenomenon was described by Vossen (2010) in the study of bank liquidity management by focusing on the liability side of the balance sheet analysing demand deposit accounts and the amount of undrawn credit lines a bank had.

In a study conducted by Caprio and Honohan (1991), the problems of excess banking system liquidity and the appropriateness of Governments' responses to situations of excess liquidity with respect to both industrialized countries and developing countries were examined. The authors identified excess liquidity as either the share of liquid assets in bank portfolios (due to a reduction in lending), or the holdings of money by the nonbank public. Further, the study recognized the causes of excess liquidity as either involuntary rationing or voluntary behavior.

It has been pointed out that bank liquidity is very important to meet both un expected and expected losses, it includes both cash and cash equivalent, placement with other banks and investment in securities, therefore liquidity is very crucial as it can absorb loses and increase profitability of the commercial banks. Basel committee (2009) indicated that the liquidity level of the commercial banks is the paramount importance for the sustainability of the banks and they further indicated that the entire inner role of the bank is to ensure the stability of the cash flow.

Banks can also raise the cash by increasing the liability side of the balance sheet. This is a common way in which banks deal with the tightening of monetary policy. They raise the funds mainly through uninsured large time deposits (Holod& Peek, 2006). Time deposits are deposits that not allowed to be withdrawn from the bank until a specific date (Madura, 2007).

If banks were holding excess reserves prior to the tightening of monetary policy it means they can no longer use these reserves to provide liquidity when such an opportunity presents itself. If not holding excess reserves, the banks themselves must raise additional capital. One way banks can do this is to sell liquid securities that they hold. Another option is to sell more illiquid assets, such as loans, which is not preferable to banks because they are forced to sell these assets at a reduced rate and face a potentially adverse effect on lending relations (Holod& Peek, 2006)

According to Acharya, Shin, & Yorulmazer, (2009) the balancing act for banks between liquidity risk and creation can also be a strategic decision instead of one solely to meet demands and prevent the bank from failing. Even those banks that experienced an increase in deposits did not originate new loans and instead placed these deposits with central banks (Senior Supervisors Group, 2009). This means that even solvent banks at the time of crisis will not be ready to be liquidity creator.

## **2.4 Conceptual framework.**

### **2.4.1 Description of the framework**

For the purpose of this study, to enable liquidity management, there were three stages on the framework, the first stage was cash inflow (independent variables), second was cash outflow (dependent variable) and the last one was liquidity risk (outcome). The basic question answered in the research was how the independent variables (time deposit, current deposit and saving deposit) affects dependent variables (lending, credit line and investment in money markets and capital market) and lead to required outcome (liquidity risk).

### **2.4.2 Underlying assumption**

The following assumptions were made in the conceptual framework

- (a) The bank will continue to provide financings to its customers.
- (b) The customers will always be confident and honest to the bank
- (c) Bank will conduct regular trainings to its staff.
- (d) Liquidity risk will occur where cash outflow is greater than cash inflow or where cash inflow is greater than cash outflow.

### **2.4.3 Description of the Variables**

Basing on the critical variables identified in the literature review, we can now identify three types of variables needed for the study of liquidity management which are independent variables, dependent variables and outcome.

#### **2.4.3.1 Independent Variables**

An independent variable is that variable which is presumed to affect or determine a dependent variable. It can be changed as required, and its values do not represent a problem requiring explanation in an analysis, but are taken simply as given.

For the purpose of this research independent variables were current deposit, saving deposit, fixed deposit, call deposit and cash cover.

#### **2.4.3.2 Dependent Variables**

Dependent variables are presumed to be affected by independent variables, for the purpose of this study dependent variables were loans, advance, overdraft, bridge finance and investment in securities

#### **2.4.3.3 Outcome**

The result of the study is called outcome. The bank may have excess liquidity or liquidity shortage which both creates liquidity risk.

### **2.4.4 Relationship between variables**

In the course of the research and data analysis, the researcher showed the extent to which independent variables influence the dependent variables to achieve the outcome. This means that the research investigated on how cash inflow affect cash outflow in banks and lead to the desired outcome (liquidity risk).

## **2.5 Hypothesis**

The objective of this study was to empirically review soundness of liquidity management in PBZ. The liquidity measured within the bank and within banking industry. The premise is that effective liquidity management procedures results bank to be liquid enough to meet all current obligations. In this manner the research hypothesis is hereby stated to give more emphasis to the purpose of the Study.

Therefore the study was guided by the following hypotheses:

H0: There was no significant difference in liquidity positions between PBZ and industry

H1: There was a significant difference in liquidity positions between PBZ and industry

Whereby:

H0 – Null hypothesis and;

H1 – Alternative hypothesis.

## **CHAPTER THREE.**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter explains the research methodology. It specifically focused on research design, location of the study area, and justification of the study area. Later on, it highlights the sampling procedures together with sampling unit, sample size, and sampling techniques. Finally, the chapter highlights the types, sources and data collection methods, tool of data analysis and analytical technique.

The study used both qualitative and quantitative techniques. The people's Bank of Zanzibar Limited was selected as judgmental in the sense that the researcher believes it would deliver the best information to meet the research objectives. The study was cover all branches located at Dar es Salaam and Zanzibar and head office departments. The research involved data collection instruments to come up with final findings. The study used questionnaires, interviews and documentary review as an appropriate means of investigating the topic. Head of Department and Senior officers were sample size in conducting interviews and respond to questionnaires' whereas secondary data was analyzed for the period of 9 years from 2004 to 2012.

#### **3.2 Research design.**

The researcher employed descriptive statistics to obtain an insight into the soundness of liquidity management in the People's Bank of Zanzibar Ltd. According to Saunders (2009:140) a descriptive study is undertaken when you have a clear picture of the phenomenon on which you wish to collect data prior to the collection of data. The aim of this was to gain more familiarity with liquidity management in banks and to gain deeper understanding about the topic.

#### **3.3 Sampling design**

As it is known to study the entire population is ideally impossible and unfeasible and therefore researcher settled for sampling. According to Saunders (2009), sampling techniques provide a range of methods that enable you to reduce the amount of data

you need to collect by considering only data from sub group rather than all possible cases or elements. For the purpose of this study the following techniques were used:

### **3.3.1 Quota sampling**

This is a type of stratified sample in which selection of cases within strata is entirely non random (Barnett 1991). For the purpose of this study, the research considered staff of the bank to be solely providers of the primary data for the investigated topic. Researcher believes that it is necessary to use this technique because it is simple, less expensive and easy to be governed.

### **3.3.2 Purposive sampling**

The researcher applied typical case sampling to capture specific data from the population. According to sounders (2009) typical case sampling is usually used as a part of project to provide an illustrative profile using a representative case. In this case specific staff were selected to provide liquidity variables at the People's Bank of Zanzibar Ltd, such staff were: six (6) Directors, ten(10) branch managers, one (1) Treasury manager, one (1) Finance manager,one (1) head of banking operations, one (1) head of risks, One (1) Manager audit, ten (10) branch accountants, and six (6) experienced senior staff from departments related to liquidity management. Researcher believes that such staff provided sufficient information to generate conclusion of the study.

## **3.4 Data collection**

This study employed both primary and secondary data. The primary data were collected from PBZ staff through questionnaires and interview. Also, the primary data was directly collected from the field work and include both quantitative and qualitative data (Kothari, 2004). The secondary data were collected from reviewing various PBZ documents relevant to this study such as reports, policies and manuals.

### **3.4.1 The questionnaire**

Cohen (1989) defines a questionnaire as a self-report instrument used for gathering information about variables of interest to an investigation.



For this study structured questionnaire was designed in order to call for responses. The questionnaire was designed to gather information about liquidity trends in the bank so as to assess liquidity management of the bank.

### **3.4.2 The interview**

An interview is a purposeful discussion between two or more people ( Kahn and Cannel 1957) The technique of personal interviewing was undertaken in order to reach the objectives since it was the most versatile and productive method of communication, enabled spontaneity.

For the purpose of this study semi-structured face to face interview was conducted specifically to directors of a bank who in all intent have limited time to fill questionnaire forms. Directors were asked some selected questions from questionnaire.

### **3.5 Documentation**

Apart from primary data, the researcher also used documentary review of banks. Documents such as annual reports, policies and manuals were used as secondary data in this study. These documents contributed the formation of information, needed by both the researcher and reader. Therefore in constructing the research, researcher employed documents of not more than 9 years' period to date.

### **3.6 Data Analysis**

#### **3.6.1 Data Processing**

Data collected were processed and analyzed using descriptive statistics such as frequencies, percentages and means in order to summarize and organize data in meaningful way. The data were interpreted so as to give clear meaning to the reader .The researcher used sample drawn from the population to draw conclusion about the whole population.

#### **3.6.2 Tools of data analysis**

The researcher used statistical package for social science computer packages version 16.0 to analyze quantitative data in this study.

### **3.6.3 Analytical technique**

According to Kombo and Tromp, (2006), a data analysis is simply understood as the process of looking at and summarizing data with intent to extract useful information and develop conclusions. The data analysis technique involves scrutinizing the acquired information and making inferences. Therefore, in order to facilitate the analysis and make the report more clear and understandable in this study, both descriptive and qualitative statistical were used for better interpretation, this included table, graphs and percentage.

#### **3.6.3.1 Specific Analytical Techniques**

The researcher used both Qualitative and Quantitative technique during the study.

##### **3.6.3.1.1 Qualitative Technique**

This is the technique that uses non-numerical data or data that have not been quantified. The researcher used this for non standardized data based on meanings that need to be expressed through words specifically such as the effectiveness of liquidity management, treasury objective, the way liquidity risk affecting PBZ product lines and factors affecting liquidity management in the bank.

##### **3.6.3.1.2 Quantitative Technique**

This technique uses numerical data or data that are quantified. The researcher applied this to analyze and describe available data which could need numerical analysis such as time taken to report and resolve liquidity risk and period for liquidity risk management revision. Numeric percentages and graphs were used to analyze the data.

### **3.7 Validity and Reliability.**

According to Kothari (2004), validity can be determined by using a panel of persons who shall judge how well the measuring instrument meets the standards. The researcher conducted interview with some of PBZ Directors before the actual data collection exercise was done in a bid to ensure consistency and comprehensiveness. This was specifically to ensure that the questions were sound and in line with the study in question.

In order to achieve scientific validity, the scientific research process was adopted from designing the research problem and undertaking the research process. The data collected was coded and Statistical Package for Social Sciences (SPSS) used to generate the necessary tabulations to aid in generating required information about the study. Also senior officers from different departments of bank were instrumental in verifying the validity of the instruments. The advice sought was used to modify the questions accordingly. The methods of data collection were viable because they helped to capture the reliable information.

Furthermore, the stability and equivalence aspects of reliability of this research were achieved or increased by carefully replicating the research methods that have been in other similar studies and test them before implementing the research process.

### **3.8 Contribution of the study**

It is intended that the findings of this research study will be used by banks, customers, shareholders and other stakeholders to assess and evaluate the current liquidity position of the People's Bank of Zanzibar Ltd and to gain knowledge on sound liquidity management during their daily transactions process to the bank.

## **CHAPTER FOUR**

### **PRESENTATION OF RESULTS**

#### **4.1 Overview**

This chapter deals with presentation of data collected during the study. It divided into two parts. Part I deals with presentation of findings from primary data which is questionnaire and Part II deals with presentation of findings from secondary data which includes various reports of PBZ bank.

#### **4.2 Part 1: Presentation of results from questionnaires.**

Questionnaires were used to collect primary data. 37 questionnaires were completed by PBZ staff members who specifically biased to senior officers only. The data from questionnaires were statistically analyzed using SPSS version 16 program. Since the questionnaire was divided according to the objective of the study, presentation of results has been designed to follow the same series. The results, which are descriptive in nature, are indicated by means of frequency tables as presented below:

##### **4.2.1 General Profile of respondent**

This section of questionnaire constitutes respondent's gender, age, marital status and experience of respondent in banking industry. It is not considered as a central part of the study however it helped to contextualize the findings and formulate appropriate recommendations to enable bank to manage liquidity more effective to avoid any possible liquidity problems.

##### **4.2.1.1 Gender of respondents**

The study revealed that 27 (73%) of respondents were male and 10 (27%) were female. Gender imbalance in banks' senior positions is histrionic issue. Data shows that even banks that claims to have gender parity such as Bank M which has 49% female and 51% male up to the end of year 2012, gender inequality in senior positions is still exist. Bank M has only 15 female out of 34 heads of department.

The table 1 below shows frequency and percent of gender of respondents.

**Table 1: Gender of respondents**

Gender	Frequency	Percent
Male	27	73.0
Female	10	27.0
Total	37	100.0

Source: Researcher 2013

#### **4.2.1.2 Age of respondents**

The study showed that 13 (35.1%) of the respondents were aged between 42 and 47. 10 (27%) of respondents were aged between 48 and 53. Awkwardly other studies of this nature used secondary data and hence age comparison in senior positions become difficult, however among reason for age gap in senior position includes PBZ was not hired for long time before redundancy of 2006. The rest ages of respondents are as shown in the table 2 below:

**Table 2: Age of respondents**

Year category	Frequency	Percent
24-29	1	2.7
30-35	4	10.8
36-41	7	18.9
42-47	13	35.1
48-53	10	27.0
54-	2	5.4
Total	37	100.0

Source: Researcher 2013

#### **4.2.1.3 Marital Status**

Based on Table 3, 34 (91.9%) of the study respondents were married, 2 (5.4%) were single and 1 (2.7%) were divorced/separated. It was noted that high percentage of staff who married caused by cultural influence in islands to marry in early ages compared to mainland.

**Table 3: Marital status of respondents**

Status	Frequency	Percent
Married	34	91.9
Single	2	5.4
Widows	0	0
Divorced/separated	1	2.7
Others	0	0
Total	37	100.0

Source: Researcher 2013

#### **4.2.1.4 Working experiences of respondents.**

Results showed that 23 (62.2%) of the respondents have worked in the banking industry for more than 15 years. 6 (16.2%) have worked for about 10 to 15 years. Large percentage of respondents spiked long years in service caused by PBZ recruitment policy that insist to hire a person in senior position who working at least 5 years in banking industry. The rest of the working experiences of respondents are as shown in the table 4 below:

**Table 4: Working experience of the respondents**

Year category	Frequency	Percent
less than 3 years	1	2.7
3-5 years	3	8.1
5-10 years	4	10.8
10-15 years	6	16.2
Above 15 years	23	62.2
Total	37	100.0

Source: Researcher 2013

#### **4.2.2 Liquidity Management.**

This section was concerned with liquidity management of the PBZ bank. It analyzed various issues relating to liquidity management including liquidity management policy, liquidity risk management and liquidity monitoring. The quantitative analysis employed and frequency tables indicate the actual perspectives of respondents. The summary of this section is described below:

#### 4.2.2.1 Liquidity Management Policy

The study respondents were asked whether bank has any policy regarding to liquidity management. It was noted that majority of respondents were aware about liquidity management policy, with exception to few who answered no (8.1%) and I don't know(2.7%).. Detail of the results is shown in the table 5 below:

**Table 5: Liquidity Management policy**

Question	Response	Frequency	Percent
Do you have any policy regarding liquidity management?	Yes	33	89.2
	No	3	8.1
	I don't know	1	2.7
	Total	37	100.0

Source: Researcher 2013

#### 4.2.2.2 Policies or guidelines for managing surplus cash.

In this question respondents were asked to state policies or guidelines for managing surplus cash and other investable cash. 32(86.4%) responded to this question, 5(13.6%) skipped to answer. The responses were differed depending on the understanding of the respondents. However 87.5% of respondents who answered the question mentioned ALCO policy as a sole policy available at bank, 6.3% of respondents apart from mentioning ALCO policy they added up liquidity contingent plan as guideline for investable cash.

#### 4.2.2.3 Effectiveness of liquidity management.

In this question the respondents were required to state the effectiveness of liquidity management. 72.9% of the respondents replied to the question, 27.1% did not reply. The question was based more on judgment; each respondent had its own answer. However 96% replied that, the liquidity management was effective, good and strong. 4% of the respondents were not sure whether the liquidity management was effective or not.

#### 4.2.2.4 Responsible officer for liquidity management

This question aimed to know whether the PBZ bank has responsible officer for liquidity management or not. Table 6 below indicates that 97.3% of the respondents said that the bank has responsible officer for managing liquidity, 2.7% replied that the bank has no responsible officer for liquidity management and 0% were not sure.

**Table 6: Officer responsible for managing liquidity**

Question	Response	Frequency	Percent
Do you have a particular officer responsible for liquidity management in bank?	Yes	36	97.3
	No	1	2.7
	I don't know	0	0
	Total	37	100.0

Source: Researcher 2013

#### 4.2.2.5 Strategy for liquidity risk management.

The question aimed to see whether the bank has a strategy for liquidity management or not. Of the respondents 36(97.3%) agreed that bank has strategy for managing liquidity risk and 1 (2.7%) said the bank has no strategy. Table 7 shows details of responses.

**Table 7: Strategy for liquidity risk management**

	Response	Frequency	Percent
Strategy for liquidity risk management.	Yes	36	97.3
	No	1	2.7
	Total	37	100.0

Source: Researcher 2013

#### 4.2.2.6 Revision for liquidity risk management

4 (10.8%) of the respondents replied that liquidity risk management is revised after every 6 months while 29 (78.4) said it is revised annually. The rest of the responses are shown in the table 8 below:



**Table 8: Revision for liquidity risk management.**

	Responses	Frequency	Percent
Revision for liquidity risk management.	6 months	4	10.8
	1 Year	29	78.4
	2 Year	0	0
	Other	4	10.8
	Total	37	100.0

Source: Researcher 2013

#### **4.2.2.7 Coverage of Liquidity risk management**

This was a multiple response question; the respondent was an option to tick more than one answer. The question was tested on coverage of liquidity risk management. 89.2% people equivalent to 80.5% of respondents gave liquidity risk management is covered in the normal course of business, whereas those who gave the answer of crisis situation was 18.9%. The table 9 below shows the details for this question.

**Table 9: Coverage of Liquidity risk management**

	Responses	Responses		Percent of Cases
		N	Percent	
Normal course of business	1	33	80.5%	89.2%
Crisis situation	2	7	17.1%	18.9%
Others	3	1	2.4%	2.7%
Total		41	100.0%	110.8%

Source: Researcher 2013

#### **4.2.2.8 Treasury Objective.**

The respondents were required to state the key PBZ treasury objective that relating to liquidity management. The question received less attention to most of respondents. Only 48% of the respondents answered to this question and remaining 52% did not reply. Most of respondents stated that, a key treasury objective is to manage bank assets and liabilities, others pointed that it is to manage assets and liabilities and maintain sufficient liquidity and invest any surplus fund.

#### 4.2.2.9 Liquidity monitoring and management

This question was referring to the previous question that related to treasury objective, and it was asked whether a treasury objective includes regular monitoring and management. Table 10 below show that 35(94.6%) of the respondents indicated that treasury objective includes regular liquidity monitoring and management. Other responses were as shown in the table 10 below:

**Table 10: Liquidity monitoring and management.**

	Resposnses	Frequency	Percent
Liquidity monitoring and management.	Yes	35	94.6
	No	1	2.7
	I don't know	1	2.7
	Total	37	100.0

Source: Researcher 2013

#### 4.2.2.10 Liquidity risk in PBZ product lines.

This question was intended the respondents to provide explanations on how liquidity risk affects various PBZ product lines. 49% of respondents answered to the question and 51% skipped to answer this question. Those who answer a question gave synonymous answer, most of them explained that liquidity risk leads a bank to fail in its operations and sometime fail to meet customer's obligations which ended to disturb customers.

#### 4.2.2.11 Reporting Liquidity risk.

This question was asked whether PBZ staff normally reporting liquidity risk to head of risk or not. All respondents agreed with the question. Table 11 below shows that 100% respondents stated that staff reporting liquidity risk to head of risk.

**Table 11: Reporting liquidity risk**

Question	Response	Frequency	Percent
Do staff normally reporting liquidity risk to head of risk?	Yes	37	100.0
	No	0	0

Source: Researcher 2013

#### **4.2.2.12 Reporting periodicity**

The question was focused on the time taken to report liquidity risk to head of risk, the responses were varies, however 21(56.8%) of the respondents answered liquidity risks are reported daily. Other responses were as shown in the table 12 below:

**Table 12: Reporting periodicity**

	Response	Frequency	Percent
Reporting periodicity	Daily	21	56.8
	Weekly	5	13.5
	Monthly	8	21.6
	Other	3	8.1
	Total	37	100.0

Source: Researcher 2013

#### **4.2.2.13 Time to resolve the reported liquidity risk.**

Table 13 below shows the time that head of risk took to resolve the reported liquidity risk. 24 (64.9%) responded that liquidity risks are resolved only one day after it reported. 6(16.2%) replied that it took 2 days to resolve reported risk. The rest of the responses were as indicated in the table 13 below

**Table 13: Time to resolve the reported liquidity risk.**

		Frequency	Percent
Time to resolve liquidity risk.	1 day after risk reported	24	64.9
	2 days after risk reported	6	16.2
	About a week	3	8.1
	More than a week	4	10.8
	Total	37	100.0

Source: Researcher 2013

### **4.2.3 Mitigation**

This section was based on assessing the means to which PBZ uses to overcome the liquidity problems. It assessed the potential liquidity problems that bank predict; ways that bank uses to manage liquidity problems and plans for the pooled liquidity. The types of questions in this part were based on multiple response questions aimed to give wider option to respondents to select the answer of his/her choice.

#### **4.2.3.1 liquidity problems that bank predict**

**Table 14 depicts various potential liquidity problems that PBZ bank predicts , 54.1%** of respondents agreed that rational depositors are very sensitive in loans, 45% pointed out that non performing loans is potential problem to PBZ bank. 43.2% replied that large amount of undrawn overdraft or credit line lead to liquidity problem. Other responses were as shown in the table 14 below:

**Table 14: liquidity problem that bank predict**

Liquidity problem	Responses		Percent of Cases
	N	Percent	
1 Rational depositors are sensitive in loans	20	24.7%	54.1%
2 Non performing loans which can lower profit	17	21.0%	45.9%
3 Large amount of undrawn overdraft or credit line	16	19.8%	43.2%
4 Increasing trend of interest rates	7	8.6%	18.9%
5 Big portion of short term time deposit	9	11.1%	24.3%
6 One lot withdrawal from large customer	9	11.1%	24.3%
7 No liquidity at all	3	3.7%	8.1%
Total	81	100.0%	218.9%

Source: Researcher 2013

#### 4.2.3.2 Managing liquidity risk

This question had three options whereby respondent was required to tick more than a box where appropriate. It focused on the way in which PBZ uses to manage liquidity problem. Of the respondents 89.2% replied that bank regularly calculates and analyzes pattern of liquidity withdrawal for anticipation. 37.8% said that bank knows how many rational depositors in the bank and 24.3% pointed that PBZ pursues depositors to lengthen tenure of time deposit from short term into long term. The table 15 below shows details of the responses:

**Table 15: Managing liquidity risk**

Ways to manage liquidity risk	Responses		Percent of Cases
	N	Percent	
1 Regular calculates withdrawals for anticipation	33	58.9%	89.2%
2 Know rational depositors in the bank	14	25.0%	37.8%
3 Pursues depositors to lengthen deposit term	9	16.1%	24.3%
Total	56	100.0%	151.4%

Source: Researcher 2013

#### 4.2.3.3 Plans for pooled liquidity

The question dealt with actions that PBZ bank takes for its pooled liquidity. 97.3% of the respondents responded that the pooled risk is held for investment while 2.7% of the respondents answered that the pooled liquidity is held for redeployment. Table 16 below shows in details:

**Table 16: Plans for pooled liquidity**

	Frequency	Percent
Investment	36	97.3
Redeployment	1	2.7
Total	37	100.0

Source: Researcher 2013

#### 4.2.4 Operational ability

This section of questionnaire aimed to demonstrate operational ability of the bank to meet all payment obligations as they become due. It involved on how PBZ practices to meet customers' obligations.

##### 4.2.4.1 Manage demand for liquidity

The question aimed to identify ways that PBZ uses to fulfill daily liquidity withdrawals from their customers. In doing so 86.5% of the respondents identified that PBZ relies on cash at the branch to meet the customers' obligations, 59.5% said it depend cash from other PBZ branch. The rest of responses were as identified in the table 17 below:

**Table 17: Manage demand for liquidity**

	Responses		Percent of Cases
	N	Percent	
1 Relies cash at branch	32	45.1%	86.5%
2 Send withdrawal notice to BOT	10	14.1%	27.0%
3 Depend cash from other branch	22	31.0%	59.5%
4 Communicate with big depositor to bring money	7	9.9%	18.9%
Total	71	100.0%	191.9%

Source: Researcher 2013

#### 4.2.4.2 Depositors withdrawals exceeds available cash

The question was assessed the means to which PBZ bank uses when withdrawals from customers exceed available cash at bank. Among the options provided in the question 64.9% of the respondents ticked bank borrow fund from correspondent bank, 45.9% showed that bank borrow fund from BOT, 27% responded that PBZ sell securities owned in secondary market. Other responses were as shown in the table 18 below:

**Table 18: Depositors withdrawal exceeds available cash**

	Responses		Percent of Cases
	N	Percent	
1 Borrow funds from BOT	17	26.2%	45.9%
2 Borrow funds from correspondent bank	24	36.9%	64.9%
3 Sell securities owned in secondary market	10	15.4%	27.0%
4 Withdrawal private placement in other banks	5	7.7%	13.5%
5 Use intra day emergency liquidity facility	7	10.8%	18.9%
8 Other	2	3.1%	5.4%
Total	65	100.0%	175.7%

Source: Researcher 2013

#### **4.2.4.3 Opinion on the factors affecting liquidity management.**

This was judgment question. The respondents were required to give opinion on the factors that affects liquidity management in the bank. 71% responded to the question while 29% did not respond. Among the factors that respondents mentioned includes public spending, crisis in the market, unforeseen transaction, interest rates, exchange rates, inflation and delay in decision making.

### **4.3 Part II: Presentation of findings from secondary data**

In addition to the data presented above, the study also used data collected from secondary source whereby reports from the PBZ bank for the past 9 years and that of BOT were analyzed to determine the liquidity position of the bank. Three proxies for liquidity are presented. The first is a ratio of liquid assets to the total assets. The second is ratio of gross loan to total deposit and final proxy is a maturity profile.

#### **4.3.1 Gross loans to total deposit ratio**

Table 19 shows that PBZ liquidity measured by Gross loans to total deposit for the period from 2004 to 2012. The percentage of gross loans and advances to total deposits was fluctuating from 2004 to 2012 however it started to rise higher from 2007.

**Table 19:Gross loans to total deposit**

Year	Gross Loans and Advances to Total Deposits (%) - PBZ	Gross Loans and Advances to Total Deposits (%) - Industry
2004	42.64	44
2005	25.68	52
2006	21.32	54
2007	25.42	56
2008	29.13	66
2009	32.45	59
2010	28.22	47
2011	44.20	52
2012	45.80	54

Source: Field data 2013

#### **4.3.2 Statistics for gross loans to total deposits**

The table 20 below shows results for liquidity and indicated that mean of gross loans to total deposit for PBZ was 32.7622 and 53.78 for industry, PBZ reported higher mean than industry. Standard deviations were 9.13297 and 6.418 for PBZ and industry respectively.



**Table 20: Statistics for gross loans to total deposits**

		Gross Loans and Advances to Total Deposits (%) - PBZ	Gross Loans and Advances to Total Deposits (%) - Industry
N	Valid	9	9
	Missing	0	0
Mean		32.7622	53.78
Std. Deviation		9.13297	6.418
variance		83.411	41.194
Skewness		.482	.439

Source: Field data 2013

#### 4.3.3 Gross Loans and Advances to Total Deposits – ANOVA

Gross loans and advances to total deposit tested by using one way ANOVA to measure level of significance. The table 21 below shows results of this test

**Table 21: Gross Loans and Advances to Total Deposits – ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	196.159	6	32.693	.139	.975
Within Groups	471.130	2	235.565		
Total	667.290	8			

Source: Field data 2013

In the table 21, F is .139, which is .05 level of significance, P is .975 significance value. We compare level of significance and significance value.  $P > .05$  (.975 > .05), with such results null hypothesis was retained and alternative hypothesis was rejected.

#### 4.3.4 Liquid assets ratio

Liquid assets ratio also was fluctuating downward from year 2007, however it was stable through time, the ratio shrunken somehow in 2012 as it reported only 31.81%. Table 22 below shows liquid assets ratio of PBZ in comparison with banking industry:

**Table 22: Liquid assets ratio**

Year	Liquid assets ratio(%) - PBZ	Liquid assets ratio(%) - Industry
2004	73.12	57

2005	76.45	55
2006	78.99	54
2007	76.00	54
2008	59.00	44
2009	61.91	48
2010	54.61	49
2011	46.29	45
2012	31.81	49

Source: Field data 2013

#### 4.3.5 Statistics for liquid assets ratio

The table 23 below shows results for liquidity and indicated that mean of liquid assets ratio was 62.0200 for PBZ and 50.56 for industry, PBZ reported higher mean than industry. Standard deviations were 15.96470 and 4.613 for PBZ and industry respectively

**Table 23: Statistics for liquid assets ratio**

		Liquid assets ratio(%) - PBZ	Liquid assets ratio(%) - Industry
N	Valid	9	9
	Missing	0	0
Mean		62.0200	50.56
Std. Deviation		15.96470	4.613
Variance		254.872	21.278
Skewness		-.786	-.066

Source: Field data 2013

#### 4.3.6 Liquidity assets ratio – ANOVA test

Liquidity assets ratio tested by using one way ANOVA to measure level of significance. The table 24 below shows results of this test.

**Table 24: Liquid assets ratio(%) - ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1774.584	6	295.764	2.237	.341
Within Groups	264.390	2	132.195		
Total	2038.974	8			

Source: Field data 2013

In the table 24, F is 2.237,  $\alpha$  is .05 level of significance, P is .341 significance value. We compare level of significance and significance value.  $P > \alpha$  (.341 > .05), with such results null hypothesis was retained and alternative hypothesis was rejected.

#### 4.3.7 Maturity profile

To construct maturity profile, the research obtained proportions of different classes of liability and asset which were under different periods, and these proportions have been applied to balance sheet data to calculate a proxy for the gap between liabilities falling due during the relative period and assets maturing during that time.

Maturity profile analyzed assets and liabilities into relevant maturing groups based on the remaining period. Bank recorded higher liquidity excess of TZS 33,314 in the year 2011. With exception to the year 2004 whereby bank recorded net liquidity gap of TZS 2,376 million; all other years, bank has been operating with liquidity excess. Table 25 Below shows contractual maturity date for net liquidity.

**Table 25: PBZ maturity profile.**

Year	Net Liquidity Excess/ (Gap) 'Amount in Million Tanzanian shilling'					
	Up to 1 month	1 to 3 months	3 to 12 months	1 to 5 years	Over 5 years	Totals
2004	19,574	3,151	(7,152)	3,701	(21,650)	(2,376)
2005	35,813	273	(10,023)	11,748	(37,757)	54
2006	50,342	(147)	(8,690)	6,478	(46,440)	1,543
2007	55,308	3,348	(14,019)	(123)	(38,301)	6,213
2008	72,665	6,693	(14,588)	239	(48,196)	16,812
2009	(44,673)	19,510	1,216	33,695	5,044	14,792
2010	67,651	1,376	(26,828)	50,818	(62,360)	3,065
2011	131,218	(9,357)	(32,491)	1,609	(57,665)	33,314
2012	153,334	(5,483)	(25,001)	9,399	(108,055)	24,195

Source: Field data 2013

It can be noted that, table 25 above show maturity mismatch in all years has been reducing, the liquidity position deteriorated in the year 2004, however later years maturity mismatch improved significantly.

In general bank has moved from negative gap to positive gap. Maturity gap try to measure the congruence of maturity tenures of an assets and liabilities. If we stick to short term assets and liabilities up to three months only, it can also be noted that the bank showed negative gap for short term assets in 2006, 2011 and 2012.

## **CHAPTER FIVE**

### **DISCUSSION AND CONCLUSIONS**

#### **5.1 Introduction**

This chapter provides brief overview of the study, including statement of problem and research process. The overall objective of the study was to empirically review the soundness of liquidity management for the People's Bank of Zanzibar Ltd. In this manner the research sought to fill the gap between incoming and outgoing cash flow in the commercial banks which has typically focused on both liability side and assets side of bank.

#### **5.2 Summary of research process**

Liquidity risk has been affecting the banks especially at this time where most of banking services are provided without a person to reach at banking halls. Taking into consideration the aforesaid problem, liquidity management has become a topic of concern to many commercial banks. In spite of important role that commercial banks need to play on liquidity management, bulks of researches have focused on excess liquidity without concentrating on cash outflow.

Acknowledging the integration of approaches in studies of this nature in developing proper assumptions, the study was guided by the work of Aikael (2006) and Qin & Pastory (2012).

Previous studies had typically examined liquidity on perspective of liquidity creation only however liquidity risk also emanate from outflow of cash. This study therefore departed previous researches by examining liquidity problems and establishes mechanism to overcome them.

This study was conducted at the People's Bank of Zanzibar Ltd (PBZ). Due to nature and complexity of study, only senior officers involved to participate in research. A non-experimental mainly quantitative research design was used to review soundness of liquidity management of the bank. Although study was quantitative in nature but

qualitative techniques were used to assist interpretation and clarification of the results.

The data were collected in two phases. Phase 1 involved questionnaire survey and Phase II involved documentary review.

### **5.3 Summary of the results**

Liquidity management as the focal point of this study had investigated against critical variables such as liquidity policy and guidelines, liquidity risk, treasury objective, plan for pooled liquidity and demand for liquidity. The interpretation of the research findings against the above-mentioned variables on one hand was based on the employees' perception on liquidity of bank, and on other hand was based on factual data derived from documentary review.

### **5.4 Questionnaire survey**

In this study, 55 questionnaires were distributed and 37 respondents replied. The target was to have 40 respondents. The response rate was good.

Section one contained four questions (1-4) that asked general profile of respondent, 73% of respondents were male and 27% were female. Although the gender difference is dramatic, it reflects the overall gender imbalance which is typical at PBZ like in many other public institutions in Tanzania. The target of this study was to get senior staff officers who had long experience in banking industry, the data revealed that 62.2% of respondents have been working in banking industry for more than 15 years and majority of them (about 67.5%) were aged above 41. It gave confidence that the data collected were reliable enough to justify the assumptions made earlier of the study.

Section two contained thirteen questions (5-17) that asked staff to state the position of liquidity management at bank.

Almost 89.2% of the respondents indicated that the bank has liquidity management policy and a majority of 87.5% of the respondents who answered question on

policies and guidelines for managing cash and other investable cash mentioned that ALCO policy is used to manage assets and liability of the bank.

Accordingly majority of respondents which is 96% of 32 staff who responded the question of effectiveness of liquidity management indicated that liquidity management of a bank was very effective. With exception to one respondent who answered that the bank has no officer responsible for managing liquidity, all other 36 respondents agreed that bank has an officer responsible for managing liquidity. 97.3% indicated that bank has strategy for managing liquidity. A sizable majority of 78.4% indicated that liquidity management risk is revised annually.

The study showed that liquidity risk management cover both normal courses of business and crisis situation, however the percentage of respondents who expressed their opinion indicated that 89.2% replied liquidity risk management is covered under normal courses of business and only 18.9% indicated crisis situation. The study showed that treasury objective of PBZ is to manage assets and liabilities and maintain sufficient liquidity and invest any surplus fund and 94.6% indicated that treasury objective includes regular monitoring and management.

Approximately half of the respondents (49%) indicated that liquidity risk leads a bank to fail in its operations and sometime fail to meet customer's obligations which ended to disturb customers. 100% of respondents stated that bank normally reports liquidity risk to head of risk. 56.8% stated that risk is reported daily and 13.5% answered it is reported weekly. About 64.9% of respondents indicated that it takes only one day to resolve reported risk.

Section three contained three questions (18-20) and it was concentrated on the way bank can overcome liquidity problem.

Almost 54.1% of responding staff believed that liquidity problem might occur because rational depositors are very sensitive in loans, 45.9% gave opinion that non performing loans might a possible reason for liquidity problem. Other staff members reported varieties of response combinations on the matter of potential liquidity

problem that bank predicts. In this manner 43.2% reported large amount of undrawn overdraft or credit line as a part of liquidity problem, 18.9% indicated that problem caused by increasing trend of interest rate because of tight monetary policy, 24.3% reported big portion of short term time deposit and one lot withdrawal from large customer might the cause of liquidity problem.

The majority of staff (89.2%) reported that bank regularly calculates and analyses pattern of liquidity withdrawal for anticipation, Other 37.8% added that bank always know their rational depositors; lastly 24.3% indicated that bank pursues depositors to lengthen tenure of time deposit from short term into long term. When staff asked on the bank plan for pooled liquidity, 97.3% expressed their opinion that bank invest the pooled liquidity.

Finally section four contained three questions ( 21 – 24), Almost 86.5% indicated that PBZ branches relies on cash at branch to fulfill daily liquidity withdrawal, 59.5% indicated that branches depend cash from other branch to meet demand for liquidity from depositors, A minority of 18.9% provided their opinion that most of time branch communicates with big depositors to bring money. When asked what bank do if depositors' withdrawal exceeds available cash at bank, almost sixty five percent (64.9%) expressed their opinion that bank borrow fund from correspondents bank, 45.9% borrow fund from BOT to cover excess withdrawals. Sizable minority of 27% indicated that bank sell securities owned in secondary market.

## **5.5 Documentary review**

The secondary data were measured in terms of ratio, it was seemingly that for the last 9 years PBZ has been maintained gross loans and advance to total deposits between 21% and 45.8%, the minimum percentage of 21.32% found in the year 2006, while maximum seemed in the year 2012. The trend shows that the percentage may be even higher in future following increasing trends in recent years.

Again bank has been maintained liquid assets to total assets at average between 31% and 78%, the highest liquid assets ratio was in the year 2006 where 78.99% was

maintained, and lowest was in the year 2012 where bank maintained 31.8% of liquid asset to total assets only.

Maturity profile of a bank shows that, bank recorded higher liquidity excess of TZS 33,314 million in the year 2011. With exception to the year 2004 whereby bank recorded net liquidity gap of TZS 2,376 million; all other years, bank has been operating with liquidity excess.

## **5.6 Meaning of study**

### **5.6.1 Meaning of primary data**

The study indicated that the respondents were highly experienced in banking industry and were adults. 62.2% of respondents have been working in banking industry for more than 15 years and 67.5% were aged above 41. Peoples with long experience in banking industry and of high ages are regarded as seniors in their careers and could be more inclined to be obedient in providing accurate data of liquidity management in bank.

Almost 89.2% of the respondents indicated that the bank has liquidity management policy, perhaps few of respondents who did not know or who were not sure about the policy possibly they works in different departments that either was not related to liquidity management or were new staff in PBZ bank, however PBZ should consider this as a serious issue as staff of this level are not expected to be unfamiliar with liquidity policy. The PBZ has a policy which is known as Asset and Liability Management Committee (ALCO) which was introduced in 2001. This policy serves as a guide for PBZ management to make strategic planning and implementation, and control processes that affect the volume, mix, maturity, interest rate sensitivity, quality, and liquidity of PBZ's assets and liabilities. Majority (96%) of respondents who answered a question of effectiveness of liquidity management indicated that it was effective. Nevertheless the dates are differ among respondents of this question, it prove that bank is liquid enough for sustenance of daily activities. 97.2% of respondents agreed that bank has responsible officer for managing liquidity who is the treasury manager. This officer is responsible for monitoring and controlling the liquidity movements. S/he always



prepares liquidity position in currency wise which then presented to the Director of finance and Administration.

Furthermore, 97.3% of respondents stated that bank has strategy for managing liquidity which is revised annually. This strategy endeavor to achieve a balanced liquidity position at the same time maintaining optimal utilization of the PBZ's funds. Though 89.2% of staff stated that the strategy cover normal courses of business and only 18.9% indicated that liquidity strategy is covered under crisis situation; but the strategy covers both normal courses of business and crisis situation however it emphasized treasury manager to fund predictable deficit under normal conditions without the abnormal costs associated with emergency funding of unexpectedly large deficit.

The strategy clearly indicates that in event of liquidity crisis, PBZ shall strive to augment its cash inflows by stopping any further commitment and encourage deposits. This strategy however is sound good because it will make the bank to survive even under crisis condition.

This study showed that treasury objective of PBZ is to manage assets and liabilities and maintain sufficient liquidity and invest any surplus fund; however in supporting with this one of the Director when asked about treasury objective of bank said that:

“The main treasury objective of PBZ bank is setting up parameters with a view to proper funding of a bank activities and also investing excess funds at higher return in line with acceptable risk”

Despite the fact that 94.6% of respondents indicated that treasury objective includes regular monitoring and management, no where in liquidity management policy confirm this. In this manner it is indispensable to comply with treasury procedural manual of a bank that gives management of PBZ, a power to appoint a senior officer to oversee, monitor and control the performance of the bank's treasury dealing room.

49% of the respondents expressed their opinion on liquidity risk and it is concluded that liquidity risk leads a bank to fail in its operations and sometime fail to meet customers' obligations which ended to disturb customers. In supporting this, one of the respondents had this to comment:

“Once the customers know that the bank is experiencing liquidity problem, they may rush to the bank to withdraw their money. This may lead to reputation risk to the extent that new customers or depositors will not put their money at bank. So deposit will be reduced drastically. On other hand, the bank will cease to issue credit thus loan portfolio will not increase instead it will decrease. Accordingly performance of the bank will negatively affected”

The above fact authenticates that liquidity risk affect PBZ product line adversely. The bank however could be safe if it will maintain adequate liquid resources to support maturing obligations and commitments as they fall due and to meet regulatory requirements as guided in the liquidity management policy of the bank. The bank need to analyze historical funding requirements, current liquidity position, anticipated future funding needs, the options for reducing funding needs or attracting additional funds and the source of funding.

Although it is true that bank normally reports liquidity risk to head of risk as all of respondents agreed with this and risk department has played a great role to distribute risk reporting forms to all staff; It is not the tendency of staff to report risk daily. Most of staff have no time to report liquidity risks especially those risks seems minor to them.

The liquidity risks are reported quarterly in department wise. As well risk officers rotates quarterly to all bank's departments to discuss risks entailed in the respective department with head of department. The discussion normally includes previous findings and implementation if any. 64.9% of respondents indicated that it takes only one day to resolve reported risk. This shows that bank takes liquidity risk as serious matter and can not be tolerated to emerge.

Additionally respondents of this study have shown proactive understanding on effect of liquidity problem and mechanism to which bank can engage to protect. The potentially liquidity problems that bank predicts includes rational depositors are very sensitive in loans, nonperforming loans which can lower bank profit, large amount of undrawn overdraft or credit line and increasing trend of interest rate because of tight monetary policy. These problems need special considerations for bank to minimize or to avoid the occurrence of the same. In facing this, the study show PBZ regularly calculates and analyses pattern of liquidity withdrawal for anticipation and also know how many rational depositors in the bank.

Respondents of the study demonstrated positive attitude on the pooled liquidity. 97.3% indicated that bank invest the pooled liquidity. In PBZ bank, decision for investment and funding needs are determined daily. This ensures that any surplus fund is invested and also used for funding bank commitments or activities.

86.5% of respondents stated that PBZ branches rely on cash at branch to fulfill daily liquidity withdrawal and 59.5% indicated that branches depends cash from other branch. As matter of fact, this normally happen because most of PBZ branches are liquid enough but experience show that especially at the end of the month where demand for withdrawal is high bank send withdrawal notice to BOT and sometime communicates with big customers to bring money. Only 18.9% of respondents were suggested this since it is not routinely exercise.

PBZ contingent liquidity plan highlighted on the actions that bank may undergo incase of depositors' withdrawal exceeds available cash at bank which includes seeking overnight and other borrowings from other banks, liquidation of treasury bills, making inter- bank/ Branch transactions and seeking loan from BOT/intraday. The actions do not differ with those observed in this study whereby 64.9% of respondents expressed their opinion that bank borrow fund from correspondents bank, 45.9% borrow fund from BOT to cover excess withdrawals and 27% indicated that bank sell securities owned in secondary market.

### 5.6.2 Meaning of Secondary data.

PBZ is required to maintain minimum liquid assets equivalent to not less than 20% of its shilling deposit liabilities, borrowings from the general public and other demand liabilities, the required minimum liquid assets as a percentage of covered liability is shown in the table 26 below:

**Table 26: Required minimum liquid assets**

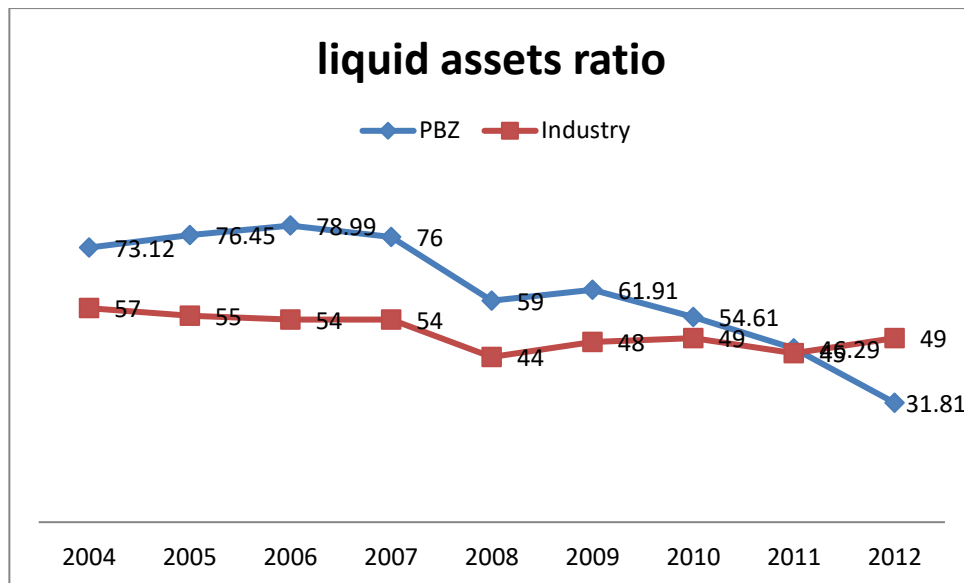
Covered Liability	Required Minimum Liquid Assets (as a % age of) Covered Liability
Deposit Liabilities	0%
Current Account	20%
Time Deposit	20%
Savings Deposits	20%
Other Deposits	20%
Inte-bank Borrowings with Residual maturity of 7 days or less (net of Inter-bank Loans Receivable with residual maturity of 7 days or less)	20%
Borrowing from the public	20%
Banker's Cheques and Drafts Issue	20%
Payment Orders/Transfers Payable	20%
Deposit of Banks	25%
Interbank Loans (payable on call or Demand)	20%
Foreign currency deposits and borrowings	20%
Off balance sheet commitments	20%
Other liabilities (specify) (maturing within or	20%

Source: Field data 2013

PBZ has been complying with this regulatory requirement in all years. Figure 1 below shows that in 2006 the liquid assets ratio was 78% which was maximum and recoded minimum of 31.81% in 2012. PBZ has been operating above industry average in all years except in 2012 whereby industry liquid assets ratio was 49% whereas bank ratio was 31.81%. The bank needs to put on eye on this as not good indicator.

In similar earlier study of Qin & Pastory (2012) the findings showed that financial performance measured by liquid assets to demand liabilities was strong liquidity levels and well developed funds management practices, the institutions have reliable access to sufficient sources of funds on favorable terms to meet present and anticipated liquidity needs. The results can nonetheless be far from this study where liquidity of bank has been always higher.

**Figure 1: Liquid assets ratio**



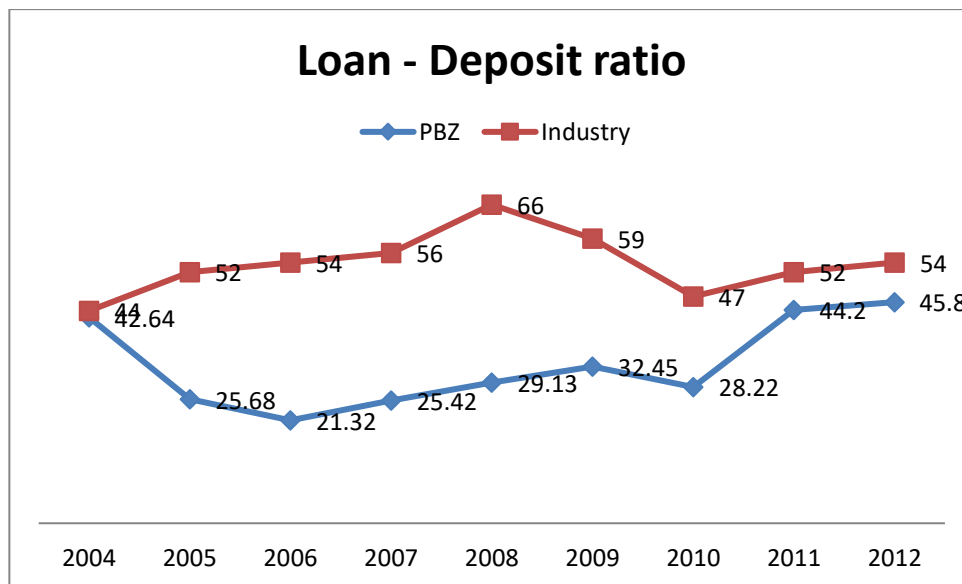
Source: Field data 2013

PBZ ALCO policy also allow bank to maintain ratio of gross loans to total deposits up to 80% in order to meet regulatory requirements as well as to avert over-reliance on borrowed or shareholders' funds, which are usually expensive to fund loans. The data collected from bank from 2004 to 2012 shows that bank complied with ratio in all years. The maximum ratio of 45.8% reported in the year 2012. Figure 2 below shows that in 2006 the bank was more liquid as percentage of gross loans to total deposit was only 21.32%. In comparison with industry, bank has always operating below industry; this means that PBZ liquidity is above average and had never been shaken. In 2004 the percentage of loans to deposit was high

due to introduction of personal loans product in 2002, and in that year the loans were at peak level.

In the past years where the percentages of loans appeared to be low, excess fund was invested in the secondary market, however in recent years following deteriorating of interest rate in treasury bills and treasury bonds; bank has vested its effort to loans and percentage of loans has started to increase. However PBZ has been operating at excess level for all past years. This basically controverts study of Qin & Pastory (2012) where by findings showed that in the year 2008 NBC liquidity level and funds management practices need improvement. The institution lacked ready access to funds on reasonable terms or might evidence significant weakness in funds management practices.

**Figure 2: Loan deposit ratio**



Source: Field data 2013

PBZ also prepares cumulative gap or cash flow mismatch over a particular period to ensure that the bank is not at risk. This is also known as maturity profile. It is prepared in a period of 3 days, 14 days, one month, three months, six months, one year and beyond one year. The mismatch

limit for 3 days is more stringent than for longer period for both local and major trading foreign currencies separately. The mismatch limit for 3 days is stringent because it affects the daily liquidity position of the bank and therefore only minimum possible mismatch shall be allowed such that if anything occurs it should have a less negative impact on liquidity. Whereas longer periods, the bank can have time to look into other options to take care of the mismatch.

The ALCO meeting determines mismatch limits from time to time. The benchmark is based on core capital to reflect the level of capital the bank is ready to put at risk.

The study shows, PBZ is liquid enough as almost in all years has shown liquidity excess except in year 2004 where bank reported net liquidity gap of TZS 2,376 million.

For the purpose of analyzing short term liquidity position of a bank, the focus is maturity gap of up to three months only. Using data for PBZ maturity ladder shown on the table 25, bank showed negative gap for short term assets in 2006, 2011 and 2012 which is implying a sign of liquidity problems. With long history of maturity profile, negative gap implying bank face short term assets compared to short terms funds they raise.

## **5.7 Conclusion**

This study was put in place to empirically review the soundness of liquidity management in the People's Bank of Zanzibar Ltd. The findings conclude that liquidity position of PBZ is more strength compared to the liquidity of other banks. This means that PBZ is still have enough room to funds illiquid assets. The study further indicates that factors affecting liquidity management in the PBZ are public spending, crisis in the market, unforeseen transaction, interest rates, exchange rates, inflation and delay in decision making.

In addition, the research finds that, although historically the PBZ performs well in managing liquidity compared to industry but finding shows that, there was no significant difference in liquidity positions between PBZ and industry.

### **5.7 Practical and policy implication**

Based on the findings of this study to empirical review the soundness of liquidity management, it is clear that practitioners and policy makers would be ready to change their current attitudes and perceptions regarding liquidity management in banks.

The results of this study are highly relevant, particularly given ongoing regulatory reform following the recent financial crisis. As policymakers devise new standards establishing an appropriate level of liquidity for banks, helping to ensure adequate stability for the overall financial system.

Awareness, understanding and concern for PBZ policies and manuals can be enhanced by sharing the outcomes reported in each of the department and bank at large. More importantly, Management need to conduct in-house training on every new policy or manual issued in bank.

This study has demonstrated the soundness of liquidity management in the commercial banks. Liquidity problem however can always exist and therefore should be clearly taken into consideration in policy making. As a cumulative effect of mismanagement of liquidity, PBZ might cease to provide certain products such as financing their customers because their liquidity becomes too difficult to manage. In such a situation it is important to mobilise internal cash sources and do not rely cash from other banks. Having expanded relationship with big customers may give rise to additional liquidity needs. Likewise, cash could be used to satisfy the immediate liquidity need of the customers and contingent liquidity plan would not necessarily be in the best interests of policymakers.



As indicated in the study of liquidity and profitability of commercial banks that, for the success of operations and survival, commercial banks should not compromise efficient and effective liquidity management. They are expected to maintain optimal liquidity level in order to satisfy their financial obligations to customers or depositors and maximize profits for the shareholders ( Olagunju, Olanrewaju and Oluwayinka, 2011).

Evidence from findings indicates that PBZ operates with excess liquidity and holds more liquid assets, to some extent, bank to hold liquid assets may reducing its liquidity risk. However, this benefit can eventually be outweighed by the opportunity cost of holding such comparatively low-yielding liquid assets on the balance sheet. Liquid assets such as treasury bills and treasury bonds in which PBZ normally holds as alternative for issuing loans sometime may be unproductive, thereby such profit or benefits derived from such instruments be less by twice than profit of illiquid assets. In this case, it is clear that PBZ has a room to expand ratio at least to the industry average, in addition bank should put more emphasis on investing excess funds in loan rather than other investments so as to boost their return.

Having addressed PBZ can do in order to manage liquidity problem with regard to excess withdrawals, policymakers are supposed to play more based on tools to prevent liquidity problem during extraordinary times.

The BOT has an obligation minimize the probability of a financial system meltdown. However, the role of BOT liquidity in such turbulent periods does not have guaranteed success, as it cannot tackle the roots of liquidity problem.

In order to eliminate liquidity problem, greater transparency of liquidity management practices are needed. In this way it is easier to distinguish between liquid and illiquid assets and therefore impose liquidity cushions to the ones most in need.

The PBZ would have to demonstrate that future positive operating cash flow, including the cash from matured bonds, will enable bank to have enough liquidity to meet all customers' obligations..

## **5.8 Recommendations**

**Based on the findings observed in this study, researcher wish to make the following** recommendations that they will help to reduce the problems associated with liquidity management in PBZ.

- (a) Instead of having excessive liquidity as a provision for unexpected depositors' withdrawal, PBZ should find other measures of meeting such requirements for instance investing in short term instruments of money markets and discounts them when withdrawal demand rises.
- (b) The BOT should be provide good rate for treasury bills and treasury bonds to encourage banks take advantage of the alternative measures of meeting the unexpected withdrawal demands, and reduce the tendency of maintaining excess idle cash.
- (c) The PBZ should establish the use of credit cards and encourage their customer to use TISS for fund transfer within country. This action will go a long way to remedy the problem of maintaining huge idle cash in vault in expectation of unprecedented withdrawal, as the movement of cash will be highly reduced.
- (d) PBZ should schedule the maturity periods of their secondary reserve assets to correspond to the period in which the funds will be needed.
- (e) PBZ should create a customer forum whereby deposits and the operational requirements will be discussed. This will enable bank liquidity level needed from customers.

## **5.9 Research implications**

Most of researches conducted in Tanzania regarding to liquidity management has been focused on analyzing the financial statements of commercial banks and BOT reports. This study provides preliminary way for researcher to concentrate on primary data and get insight information of banks. It is believed that some financial

statements are always constructed or structured, in this case it is difficult to get the truth on the data published to public.

The results of this study however, cannot be generalized easily as it involves only one bank. This study has shown that it is possible to get data on liquidity in field work; and therefore the study used both field data and secondary data, however the results of this research were not different from those observed in previous researches. In interpreting results Qin & Pastroy (2012) in the study of comparative analysis of commercial banks liquidity position concludes that financial performance of commercial banks was strong liquidity levels and well developed funds management practices, the institutions have reliable access to sufficient sources of funds on favorable terms to meet present and anticipated liquidity needs. This result gives light that patterns observed in this study are similar to patterns observed in another study in which the conditions are similar.

### **5.9 Areas for Future Studies**

This study could serve as a starting point for additional work. One could apply the current framework to additional banks, researcher believe that additional studies could address several issues that emerged in this study. Because respondents of this study were not dispersed in such away to provide generalization to all banks in Tanzania, a new study could focus specifically on large banks.

It would be important to determine whether senior staff in those settings have the same perceptions as reported by their colleagues in this study. Additionally, because the findings regarding factors affecting liquidity management did not focus clearly on specific point, respondents were having wider knowledge to give any answer , as well as many respondents skipped the question as it was based on generalization, it would be important to conduct a study that examines this issue in more detail.

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## **APPENDIX**

**QuestionnaireNo.....**

### **Appendix I**

#### **Staff questionnaire**

**Dear respondent,**

My name is Suleiman Ali Suleiman, a student from Mzumbe University, Dar es Salaam campus pursuing Master of Science Accounting and Finance (Msc. A&F).

I am currently conducting a research as part of requirement to complete my degree. My research is basing on liquidity management in commercial banks. In this study I decided to select The People's Bank of Zanzibar (PBZ Ltd) to be a case study. Therefore I acknowledge your presence as the main stakeholder in this study. I wish to assure you that all information provided in this questionnaire will be treated confidential and will be used for academic purpose only.

I highly appreciate your cooperation as well as your contribution.

**Thanking you.**

## Staff questionnaire

(Please tick in appropriate box where necessary)

### PART A: GENERAL PROFILE OF RESPONDENT

1. What is your gender?

- Male  Female

2. Which age category do you fall in?

- Under 18  18 – 23  24 – 29  30 – 35

- 36 – 41  42 – 47  48 – 53  54 –

3. What is your marital status?

- Married  
 Single  
 Widowed  
 Divorced/Seperated  
 Other

4. What is your experience in banking industry?

- less than 3 years  
 3 - 5 years  
 5 – 10 years  
 10 -15 years  
 Above 15years

### PART B: LIQUIDITY MANAGEMENT

5. Do you have any policy regarding liquidity Management?

- Yes  
 No  
 I don't know

6. If yes, what are your policies/guidelines for managing surplus cash and other investable cash?

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7. How effective is your liquidity management today?(Please remember to include date)

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8. Do you have a particular officer responsible for liquidity management in the bank?

- Yes
- No
- I don't know

9. Does the bank have a strategy for liquidity risk management?

- Yes
- No
- I don't know

10. If yes, how often is it revised?

- 6 months
- 1 year
- 2 years
- others

Other, specify \_\_\_\_\_

11. What does the strategy cover?

- Normal course of business
- Crisis situations
- others

Other, specify \_\_\_\_\_

12. What is your key treasury objective related to liquidity Management?

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13. Does it include regular liquidity monitoring and management?

- Yes
- No
- I don't know

14. How does liquidity risk affect PBZ products line?

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15. Do PBZ staff normally reporting liquidity risk to head of risk?

- Yes
- No
- I don't know

16. If yes, please state the periodicity of reporting?

- Daily



- Weekly
- Monthly
- Other

Other, specify \_\_\_\_\_

17. How long it took to resolve the reported liquidity risk?

- 1 day after risk reported.
- 2 days after risk reported.
- About a week
- More than a week

#### PART C: MITIGATION

18. The potential liquidity problem that bank predicts (tick more than one box where appropriate)

- Rational depositors are very sensitive in loans.
- Non-performing loans which can lower bank profit.
- Large amount of undrawn overdraft or credit line.
- Increasing trend of interest rate because of tight monetary policy.
- Big portion of short term time deposit.
- One lot withdrawal from large customers
- no liquidity problem at all

19. How do bank Manage Liquidity Risk?(tick more than one box where appropriate)

- Regularly calculates and analyzes pattern of liquidity withdrawal for anticipation.
- Knows how many rational depositors in the bank.
- Pursues depositors to lengthen tenure of time deposit from short term into long term.

20. What are your plans for your pooled liquidity?

- Repatriation,
- Investment,
- Redeployment,
- Other

Other, specify \_\_\_\_\_

#### PART D: OPERATIONAL ABILITY

21. To manage demand for liquidity from depositors, PBZ branches are: (tick more than one box where appropriate)

- Relies on cash at branch to fulfill daily liquidity withdrawal.
- Most of time send withdrawal notice to BOT.
- Depend cash from other PBZ branch
- Most of time communicates with big depositors to bring money.

22. If depositors' withdrawal exceeds your available cash at bank in general (tick more than one box where appropriate)

- Borrow fund from BOT
- Borrow fund from correspondent bank
- Sell securities owned in secondary market..
- Withdraw private placement in other banks
- Use intra day emergency liquidity facility.
- Use bank's capital to cover liquidity demanded.
- Ask depositors to wait for extra days.
- Other.

Other, specify \_\_\_\_\_

23. For your opinion what are the most important factors affecting liquidity management in the bank?

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