

**Assessment of Liquidity Risk Management Practices  
& Challenges  
(The Case of Private Commercial Banks in Ethiopia)**



**By  
Suraphel Awgchew**

**Advisor: Maru Shete (PhD)**

**June, 2017  
Addis Ababa, Ethiopia**

**Assessment of Liquidity Risk Management Practices &  
Challenges**

**(The Case of Private Commercial Banks in Ethiopia)**

**By**

**Suraphel Awgchew**

**A Research Submitted to the School of Graduate Studies of Saint Merry University  
in Partial Fulfillment of Degree of Masters of General Business Administration**

**Advisor: Maru Shete (PhD)**

**June, 2017**

**Addis Ababa, Ethiopia**

## Endorsement

This is to certify that this thesis prepared by Suraphel Awgchew, entitled; “*Assessment of Liquidity Risk Management Practices and Challenges In Case of Private Commercial Banks In Ethiopia*” and submitted in partial fulfillment of the requirements for the degree of Master of General Business Administration with the regulations of the University.

**Approved by:**

Internal Examiner: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

External Examiner: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Advisor: Maru Shete(PhD.) \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Declaration**

I, **Suraphel Awgchew**, hereby declare that this research work entitled; “*Assessment of Liquidity Risk Management Practices and Challenges In Case of Private Commercial Banks In Ethiopia*” submitted by me for the award of the degree of Master of General Business Administration, is my original work and that all sources of materials used for the study have been duly acknowledged. I have carried out independently with the advice and comments of my advisor of the research, Maru Shete (PhD).

Suraphel Awgchew

Student’s Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

### **Advisor’s Approval**

This Thesis has been submitted for examination with my approval as a University advisor.

Maru Shete (PhD)

Advisor’s Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

# Table of Contents

<b>Contents</b>	<b>page</b>
Endorsement .....	<b>i</b>
Declaration.....	<b>ii</b>
Acknowledgment .....	<b>v</b>

## **CHAPTER ONE: INTRODUCTION**

1.1 Background of the Study .....	1
1.2 Statement of the Problem.....	3
1.3 Objectives of the study.....	5
1.3.1 General objectives of the study.....	5
1.3.2 Specific objectives of the study .....	5
1.4 Research questions.....	5
1.5 Significance of the study.....	5
1.6 Scope of the study.....	5
1.7 Limitation of the study.....	6

## **CHAPTER TWO: LITERATURE REVIEW**

2.1 Theoretical Review .....	7
2.1.1 Risk .....	7
2.1.2 Liquidity Risk .....	8
2.1.3 Theories on liquidity management.....	8
2.1.4 The challenge of liquidity risk management.....	12
2.1.5 The Elements and Short comings of Liquidity Risk Management .....	13
2.1.6 Fundamental Principles for Liquidity Risk Mgmt and Supervision .....	16
2.2 Review of Empirical Studies .....	16
2.7.1 Conceptual Framework.....	20

## **CHAPTER THREE: RESEARCH DESIGN & METHODOLOGY**

3.1 Research Design.....	22
3.2 Data Type and Source.....	22
3.3 Population Size, Sampling Techniques and Sample Size.....	22
3.4 Method of Data Collection.....	23
3.5 Method of Data Analysis .....	23

## **CHAPTER FOUR: RESULTS AND DISCUSSIONS**

4.1 Introduction.....	24
4.2 Liquidity Exposure of Private Commercial Banks in Ethiopia .....	24
4.2.1 Analysis of Liquidity Position of Private Commercial Banks using Liquid Asset/Net Deposit .....	24
4.2.2 Analysis of Liquidity Position of Private Commercial Banks using Loan/deposit ratio .....	26
4.2.3 Analysis of Liquidity Position of Private Commercial Banks using Liquid Asset/Total Asset.....	27
4.3 Liquidity Risk Management practices Of Private commercial Banks.....	29
4.3.1 Governance of Liquidity Risk Management.....	29
4.3.2 Measurement and Management of liquidity Risk.....	30
4.3.3 Public Disclosure .....	32
4.3.4 Role of Supervisors.....	33
4.4 Challenges of Liquidity Risk Management in Private Banks in Ethiopia .....	34

<b>CHAPTER FIVE .....</b>	<b>37</b>
---------------------------	-----------

## **CONCLUSION AND RECOMMENDATION**

5.1 Conclusions.....	37
4.2 Recommendations.....	39

<b>References.....</b>	<b>41</b>
------------------------	-----------

## **Annexes**

## **Acknowledgment**

I am glad to express my whole hearted gratitude to my advisor, Dr Maru Shete, who gave me invaluable, constructive and enlightened comments and suggestions without which my work could have been fruitless.

Moreover, I would like to thank the officials in DB, UB, LIB, BIB, AB and AIB for their collaboration to share their ideas and give the necessary materials (data) for the topic under study.

My deepest appreciation goes to my friends, colleagues and families who have been encouraging me one way or another that contributed to my achievement.

My very special thanks go to my wife, Elfinesh Alemaw, for her enduring love, friendship, her unrestricted and continued support and encouragement.

## **ACRONYMS/ABBREVIATIONS**

DB	Dashen Bank
UD	United Bank
LIB	Lion International Bank
BIB	Berehan International Bank
AB	Abay Bank
AIB	Addis International Bank
CFP	Contingency Funding Plan
NBE	National Bank of Ethiopia
AfDB	African Development Bank
GoE	Government of Ethiopia
BIS	Bank for International Settlements
SPSS	Statistical Package for Social Sciences
OTC	Over-The-Counter
WGL	Working Group on Liquidity
CFP	Contingent Funding Plan
MFI	Micro Finance Institutions

## List of Tables

<b>Table 4.1</b> Trend Equation and R square for Liquid Asset to Net Deposit Ratio for the private banks for Five years .....	25
<b>Table 4.2</b> Trend Equation and R square for Loan to Deposit Ratio for the private banks for Five years .....	27
<b>Table 4.3</b> Trend Equation and R square for Liquid Asset to Total Asset Ratio for the private banks for Five years .....	28
.....	28
<b>Table 4.4</b> Governance of liquidity risk management practices .....	29
<b>Table 4.5</b> Measurement and Management of liquidity Risk .....	31
<b>Table 4.6</b> Publicly Disclose Information on a Regular Basis .....	32
<b>Table 4.7</b> To Whom they Disclosed .....	33
<b>Table 4.8</b> NBE Assessment & Intervention .....	34
<b>Table 4.9</b> Respondent's perception on the challenges faced by private commercial banks in relation to liquidity risk management .....	35
<b>Table 4.10</b> NBE Bill Purchase (In Millions).....	36

## List of Figures

<b>Figure 2.1</b> Conceptual Framework of the Study .....	21
<b>Figure 4.1</b> Trend of Liquid Asset /Net Deposit Ratio /In Percentage/ .....	25
<b>Figure 4. 2</b> Trend of Loan/Deposit Ratio (in percentages) .....	26
<b>Figure 4. 3</b> Trend of Liquid Asset/Total Asset Ratio (in percentages) .....	28

## ***Abstract***

*The main purpose of the study was to assess the liquidity risk management practices and challenges of Private commercial banks in Ethiopia. To deal with the problem, fundamental research questions were formulated whether banks are managed liquidity risk in accordance with the Basel Principles or not. Moreover, liquidity risk exposures of each banks performance were reviewed during the study.*

*To conduct the study, descriptive method was employed. Purposive sampling was used in the selection of each bank and the respondents from the respective bank. Thus, a total of 30 respondents participated to the sources of primary data for the study.*

*Data were collected through questionnaire and annual reports of each commercial bank. The data collected from primary and secondary sources were organized using tables and graphs and interpretation was made on the data using quantitative and qualitative methods.*

*The findings of the study revealed that the liquidity risk management practice of private commercial banks in Ethiopia is somewhat partially fulfilled comparing against best principles of Basel. There are no standardized and centralized liquidity risk management practices which can able to address the basic principles for managing liquidity risk. The main challenges most of the private banks faced as per this study are NBE bill purchase policy imposed on private commercial banks, financial innovation and global market development and the increasing real time nature of payment and settlement system. Moreover, all private commercial banks liquidity position has been deteriorated from year to year and banks should work hard to overcome the problem.*

*Finally, it is recommended that Banks should improve or upgrade their liquidity risk management system in crucial elements of liquidity risk management and they should also diversify their source of fund and actively monitor their intraday liquidity position in order to meet their business objectives. Moreover, NBE should be actively monitoring the existing liquidity risk problems by reviewing the policies and conducting close follow up.*

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Bank liquidity describes the ability to finance its transactions efficiently. As Howells & Bain- (1999) stated, if there is a probability that a bank is unable to do this it is known as the liquidity risk. As this risk increases the bank is considered unable to meet its obligations (such as deposits withdrawal, debt maturity and funds for loan portfolio and investment). Bank for International Settlements (BIS) (2008), explains liquidity as a bank's ability to finance increases in assets and meets its obligations without losses. A bank should acquire proper liquidities when needed immediately at a sensible cost.

Liquidity is the ability to meet expected and unexpected demands for cash through ongoing cash flow or the sale of an asset at fair market value. Consequently, liquidity risk is the risk that at some time banks will not have enough cash or liquid assets to meet its cash obligations. The most striking example of loss due to this risk is a run-on-the-bank event that causes an institution to fail. This type of event hit banks during the depression when too many customers demanded to have their money paid immediately in cash and that demand exceeded cash reserves. Less dramatically, smaller losses can occur when a bank has to borrow unexpectedly or sell assets for an unanticipated low price, management strategies to help manage risks associated with their business and investment dealings (Ismail 2010).

As a result, the liquidity risk assessment and intense management is become a vital activity of every entity, which involves the determination of the risks surrounding a business and develop a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance and to ensure that the bank maintains sufficient liquidity.

As stated on the work of Ogol (2015), the two most crucial reasons for the existence of financial institutions, especially banks and MFIs, are their provision of liquidity and financial services. Regarding the provision of liquidity, banks and MFIs accept funds from depositors and extend such funds to the sector while providing liquidity for any withdrawal of deposits. Banks role in transforming short-term deposits into long-term loans makes them inherently vulnerable to liquidity risk. The concept of liquidity in finance principally lies in two areas, the

liquidity of financial instruments in the financial market and the liquidity related to solvency. The former relates to liquid financial markets and financial instruments. The latter discusses the obligation of banks to make payments to third parties Fiedler (2000) and the researcher is also persistently followed this concept throughout the study.

BIS (2008) recommend banks / MFIs to organize the process of liquidity management through identifying, measuring, monitoring, and controlling liquidity risk such a process entails at least four elements, the liquidity management policies of the Board of Directors (BOD), the roles of the Asset Liability Committee (ALCO), the effective information system for monitoring and reporting liquidity risk and the roles of Internal control systems for liquidity management.

Koziol & Lawrenz (2008) provided a study in which they assessed the risk of bank failures the major risks that were faced by these banks were amongst them liquidity risk. A regression model was used to elaborate the results which showed that Risk Identification, and Risk Assessment and Analysis.

Adolphus (2008) studied liquidity management practices of selected Nigerian banks by evaluating the relevance of treasury objectives in bank portfolio management, causes of asset-liability mismatch in banks, causes of liquidity crisis, incidence of treasury risk, adequacy or appropriateness of liquidity risk management techniques, liquidity planning practices of Nigerian banks, and extent of liquidity exposure in banks. The rampant reported cases of liquidity crisis and financial distress in the Nigerian banking industry have necessitated a study on how to manage the bank's liquidity exposure.

Bhole & Mahakud (2009) alludes that risk management in bank operations includes risk identification, measurement and assessment, and its objective is to minimize negative effects risks can have on the financial result and capital of a bank. Banks are therefore required to prescribe procedures for risk identification, measurement and assessment, as well as procedures of risk management.

Hassan (2009), conducted a study on “risk management practices of Islamic banks of Brunei Darussalam” to assess the degree to which the Islamic banks in Brunei Darussalam implemented risk management practices and carried them out thoroughly by using different techniques to deal with various kinds of risks including liquidity risk.

Therefore, in attempting to examine the liquidity risk management practice and challenges taking private commercial banks in Ethiopia, This study explored the fundamental principles

for the management and supervision of liquidity risk clearly spells out the theoretical framework of liquidity risk management which is acceptable and worldwide applicable. The fundamental principles for the management and supervision of liquidity risk is anchored on the four pillars namely governance of liquidity risk management, measurement and management of liquidity risk, public disclosure and the role of supervisors.

The researcher is interested from the very heart felt pleasure to study in this area because its paramount important to create value to the existing decision making, explicitly address uncertainty and assumptions, to evaluate the existing practice against the systematic and structured way of liquidity risk management and to show how the liquidity risk operation is continual improved and enhanced to concerned organs and general public as well.

## **1.2 Statement of the Problem**

Maintaining the optimum level of liquidity position is of utmost importance and it should be an ongoing operation of banks. The National Bank of Ethiopia has required commercial banks to have their own liquidity policy (Bank Risk Management Guideline, 2010) which enforces banks to monitor their funding structure and their ability to handle short term liquidity problems and provide them with a better means of assessing the present and future liquidity risk associated with their future liquidity position.

With intent, the National Bank of Ethiopia has issued a new directives No. SBB/57/2014 so that banks maintain public trust and confidence by ensuring that banks have sufficient level of liquidity at all times. The Asset & Liability Management Committee (ALCO) is also established to manage its assets, liabilities and off-balance sheet items so as to fully meet the bank's contractual commitments. All commercial banks are also obliged to develop liquidity management policies that at minimum should cover Management information system, Stress tests/scenario analysis, Maturity gap analysis, Cash flow projections, Diversification of funding sources, Limits on net cumulative funding mismatch, Internal controls, Contingency planning and Major currencies(NBE directives ,2014).

However, private commercial banks in Ethiopia have encountered a serious liquidity crunch (Meron 2016). The issue arose from the mandatory purchase of bonds instituted by the National Bank of Ethiopia. Private Banks are mandated to deposit 27% of the gross loan disbursement.

Current scenario also shows that almost all private commercial banks found them confronted with liquidity crises, after suffering from what is known in the finance world as “a run on a bank” phenomenon occurred on January 1, 2016, It is an unusual situation where depositors demand withdrawals in unusually huge sums, with the result threatening to stall the whole payment system of the country. The sudden flow of cash out of almost all private banks escalated following the decision made by the state owned Commercial Bank of Ethiopia (CBE) to grant the release of all pending applications for letters of credit (LC) after long delays( Fortune 2016).

Now a day, it is disturbing to note that systematic risk management is still not as widespread as it should be in the banking industry. In February 2008, the Basel Committee on Banking Supervision published Liquidity Risk Management and Supervisory Challenges. The difficulties outlined in this publication highlighted that many banks had failed to take account of a number of basic principles of liquidity risk management when liquidity was plentiful. Many of the most exposed banks did not have an adequate framework that satisfactorily accounted for the liquidity risks posed by individual products and business lines, and therefore incentives at the business level were misaligned with the overall risk tolerance of the bank. Many banks had not considered the amount of liquidity they might need to satisfy contingent obligations, either contractual or non-contractual, as they viewed funding of these obligations to be highly unlikely (BIS, 2008).

Almost all of the private banks faced liquidity risk and the emerging economic development drastically swell the need of customer for cash. Customers need their cash at any point in time and it is accessible with newly implemented ATM machine for about 24/7 days a week. Besides, the existing physical cash transfer from outline branches is merely executed by National Bank of Ethiopia which is too slow to fasten the movement of physical cash and later on significantly affect the smooth and ongoing operation of banks.

Even though it is vital and considered as fundamental course of action to survive as well as to be successful in the competitive banking industry, formal research has not been done specific to this study area. To the best of the researcher knowledge, it is not jointly studied as “the liquidity risk management practice and challenges” in Ethiopia.

Therefore, the researcher strained to conduct this study in order to examine the liquidity risk management practice and challenges distinctive to Ethiopian Private Commercial Banks.

### **1.3 Objectives of the study**

#### **1.3.1 General objectives of the study**

The general objective of the study is to assess the liquidity risk management practice and challenges of Private Commercial Banks in Ethiopia.

#### **1.3.2 Specific objectives of the study**

The specific objectives of the study are:-

- To examine the practice adopted by Private Commercial Banks in Ethiopia in managing the liquidity risk.
- To explore the potential liquidity risk management challenges.
- To examine the level of liquidity risk exposure of Private Commercial Banks in Ethiopia

### **1.4 Research questions**

1. What are the key liquidity management practices in private commercial banks in Ethiopia?
2. What are the major challenges of liquidity risk management in private commercial banks?
3. What looks like the liquidity position of private commercial banks as per the key liquidity risk indicators?
4. What helpful liquidity management practices should the banks have to adopt?

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

The finding of the study is expected to improve the practices of liquidity risk management in private commercial banks, and thus facilitate the tasks of the bank managers. For the bank managers, it will be a good indicator to identify the potential liquidity risk management challenges of the bank and to take corrective actions. It also helps them to know the current liquidity risk exposure.

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

The scope of the study primarily focuses on the study of employees & managers who are assigned on finance & account and risk and compliance department. The study examines the

liquidity risk management practice and challenges under the context of Ethiopian Private Commercial Banks.

### **1.7 Limitation of the study**

Some of the challenges that were encountered while conducting the study were:

- ✓ Lack of cooperation from some of the subjects of the study.
- ✓ Lack of some necessary materials due to their confidentiality.

Despite these limitations, the researcher has attempted to make the study as complete as possible using unreserved effort.

# CHAPTER TWO

## LITERATURE REVIEW

This chapter presents a review of selected empirical studies which highlights the most relevant findings in the field of liquidity risk management practice and challenges. The researcher first presents the concept of Risk and Liquidity Risk which are paramount important to the study area and theoretical research done in the area of liquidity risk management challenges and highlight the most relevant findings. The theoretical frameworks are usually followed by the empirical investigations regarding liquidity risk management and finally the researcher developed conceptual framework of the study.

### 2.1 Theoretical Review

The concept of bank liquidity- the short run ability of commercial banks to service deposit withdrawals and loan requests has undergone fundamental changes in the past 20 years. Prior to that time, banks in United States measured their liquidity positions by the amounts of certain short term readily marketable assets they held. These assets commonly called secondary reserves consists of such earning assets as short term, U.S treasury bills, brokers and dealers notes and bankers acceptances. Additionally many small banks used cash assets, such as correspondent balances and excess reserves, for liquidity purposes (G Lockett, 1980).

#### 2.1.1 Risk

It refers the chance that an investment's actual return will be different than expected. This paper focuses primarily liquidity risk that the bank will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm. Risk includes the possibility of losing some or all of the original investment. Different versions of risk are usually measured by calculating the standard deviation of the historical returns or average returns of a specific investment. High standard deviation indicates a high degree of risk\_ (Sharma et al, 2006).

The quantifiable likelihood of loss or less-than-expected returns includes currency risk, inflation risk, principal risk, country risk, economic risk, mortgage risk, liquidity risk, market risk, opportunity risk, income risk, interest rate risk, prepayment risk, credit risk, unsystematic risk, call risk, business risk, counter party risk, purchasing-power risk and event risk.

### **2.1.2 Liquidity Risk**

A first requirement to study bank's liquidity buffer is to find an adequate definition of liquidity Shumet, (2016). Likewise, the financial economics literature distinguishes between two concepts of liquidity: market liquidity and funding liquidity (Drehmann and Nikolaou, 2009). Market liquidity describes a particular characteristic of an asset: a high degree of market liquidity implies the ability to offset or eliminate a position in a given asset at or close to the current market price. This feature of the asset may not be constant over time. An asset which is currently market liquid may not necessarily have been market liquid in the past, nor need it be continuously market liquid in the future.

However, funding liquidity refers to particular characteristics of a financial agent and it describes to its ability to meet obligations as they come due. Funding liquidity risk is the risk that the bank will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm. At any point in time, a financial institution is either funding liquid or not. Nevertheless, the two concepts are linked (Brunnermeier, 2009). Suppose a bank only holds assets which are perfectly market-liquid. In this case the bank will also be funding liquid, as long as it is solvent. Market liquidity, however, may vary over time, and an institutions funding liquidity may thus change accordingly. Suppose a sufficiently large portion of the bank's assets suddenly become perfectly market illiquid, while the bank remains solvent. The bank will no longer be able to honor its short-term obligations and will become distressed. This is, in fact, a stylized description of the difficulties encountered by a large number of financial institutions during 2007, the previously highly liquid market for mortgage-backed securities dried up. This situation highlight the crucial importance of liquidity to the functioning of markets and the banking sector as well as links between funding and market liquidity risk, interrelationships of funding liquidity risk and credit risks, reputation effects on liquidity, and other links among liquidity and other typical banking features.

### **2.1.3 Theories on liquidity management**

#### **Bank Liquidity creation and financial fragility: theory**

According to the theory of financial intermediation, an important role of banks in the economy is to provide liquidity by funding long term, illiquid assets with short term, liquid liabilities.

Through this function of liquidity providers, banks create liquidity as they hold illiquid assets and provide cash and demand deposits to the rest of the economy. Diamond and Dybvig (1983) emphasize the “preference for liquidity” under uncertainty of economic agents to justify the existence of banks: banks exist because they provide better liquidity insurance than financial markets. However, as banks are liquidity insurers, they face transformation risk and are exposed to the risk of run on deposits. More generally, the higher is liquidity creation to the external public, the higher is the risk for banks to face losses from having to dispose of illiquid assets to meet the liquidity demands of customers.

A natural justification for the existence of deposit-taking institutions, thereby giving also an explanation for the economically important role of banks in providing liquidity, was initially modeled by (Bryant 1980 and Diamond and Dybvig 1983). They showed that by investing in illiquid loans and financing them with demandable deposits, banks can be described as pools of liquidity in order to provide households with insurance against idiosyncratic consumption shocks. However, this structure is also the source of a potential fragility of banks since in case of an unexpected high number of depositors deciding to withdraw their funds for other reasons than liquidity needs, a bank run will result. Both papers stand in the tradition of prior research on the liquidity of assets, for example by (Tobin 1965 or Niehans 1978) as well as on bank runs, by (Friedman and Schwartz 1963).

However, at least a certain part of a bank’s liability are call or sight deposits which are by definition and by law to be paid back on demand and on a first-come first-serve basis. This rule of distribution makes depositors wary that they might be late or stand too far behind in the waiting line in the case a bank encounters problems, and it makes them even aware of what little information they may have on the monitoring activity of the bank. This situation can lead to a bank run, and the danger of a run is what induces banks to do what their depositors want them to do, namely to be active delegated monitors in the spirit of (Diamond 1984). Based on this argument Diamond and Rajan (2001), raised the question whether or not financial fragility where small shocks lead to can have large effects on assets prices is a desirable state for banks. They argue that the existence of the fragility itself gives banks the right incentives to create liquidity. According to them, any kind of regulation, such as capital standards, impair this liquidity creation and should thus be avoided.

Kashyap et al. (2002) also conducted a related analysis justifying the existence of banks' liquidity creation. They argue that because banks carry out lending and deposit taking under the same roof, synergies must exist between these two tasks. These synergies can be found in the way deposits and loan commitments are secured through the holding of liquid assets as collateral against withdrawals. They regard these liquid assets as costly overheads. These overheads can be shared by the two separate functions, hence the synergy. A detailed analysis of the link between liquidity shortages and systemic banking crises is given by (Diamond and Rajan, 2005). It is argued that the failure of a single bank can shrink the pool of available liquidity to the extent that other banks could be affected by it. A contagion effect is the result. However, as solvency and liquidity effects interact it is hard to determine the root of a crisis.

Generally, liquidity risk arises from the fundamental role of banks in the maturity transformation of short-term deposits into long term loans. According to Joint Forum of the Basel Committee (2006), banks liquidity risk includes two types of risk: funding liquidity risk and market liquidity risk. Funding liquidity risk is the risk that the bank will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm. Market liquidity risk is the risk that a bank cannot easily offset or eliminate a position at the market price because of inadequate market depth or market disruption. There are strong interactions between funding liquidity risk and market liquidity risk, especially in periods of crisis. Drehmann and Nikolau (2009) pointed to the fact that shock to funding liquidity can lead to asset sales and may lead to decrease of asset prices. Lower market liquidity leads to higher margin which increase funding liquidity risk.

Events in the second half of 2007 and early 2008 highlight the crucial importance of liquidity to the functioning of markets and the banking sector as well as links between funding and market liquidity risk, interrelationships of funding liquidity risk and credit risks, reputation effects on liquidity, and other links among liquidity and other typical banking features. Liquidity risk is not an 'isolated risk' like credit or market risks (although credit risk often arise as a liquidity shortage when the scheduled repayments fall due), but a "consequential risk", with its own intrinsic characteristics, that can be triggered or exacerbated by other financial and operating risks within the banking business (Chen et al. 2005).

### **Liquid asset theory**

This focuses on the asset side of the balance sheet and argues that banks must hold large amount of liquid assets against possible demand or payment cushion of readily marketable short term liquid assets against unforeseen circumstances. This approach is however very expensive in a current world of dynamic money market, Ngwu,T.C.(2006)

### **Shift Ability Theory**

This is based on the proposition that bank liquidity is maintained if it hold assets that could be shifted or sold to other lenders or investors for cash. If loans are not required the collateral from security loan i.e. marketable securities or example could be sold for cash. If funds are needed, loan could be shifted to the Central Bank, when bank deposited securities with the Central Bank in order to meet the demand for funds, loan are said to be shifted to the Central banks. Thus, the individual banks should be able to meet its liquidity needs provided because it always has assets to sell, Ngwu,T.C,(2006)

### **Liability management theory**

Advocate of liability management theory of liquidity of commercial bank maintain that banks can meet liquidity requirement by bidding the market for additional funds. This approach originally found its strongest advocates in the large money market centers, the banks, and later develops the negotiable type of certificate of deposit (CD) as a major money market instrument, Abang-Anoh,(2012).

Different researchers have also raised various internal and external factors and determinants of commercial banks liquidity. The researcher believed that raising those determinants in this paper also has significant benefit to see all sides of liquidity which are directly related with the research questions and hypothesis.

A research made by (Tseganesh Tesfaye, 2012) on the impact of liquidity on commercial banks financial performances has raised various determinants of commercial banks liquidity in this regard the researcher referred those factors explained in the research.

### **Capital adequacy and bank liquidity**

Opposing to the standard view of liquidity creation in which banks create liquidity by transforming liquid liabilities into illiquid assets, the recent theories indicate the creation of liquidity by changing asset mixes. Diamond and Rajan (2001) and Gorton and Winton (2000) showed that banks can create more or less liquidity by simply changing their funding mix on

the liability side. The more liquidity that is created, the greater is the likelihood and severity of losses associated with having to dispose of illiquid assets to meet the liquidity demands of customers. Bank capital allows the bank to absorb greater risk (Repullo 2004). Thus, under the second view, the higher is the bank's capital ratio, the higher is its liquidity creation.

In addition to that researchers in U.S assessed the capital adequacy of the banks for liquidity as (Berger 1995) analyses the statistical- relationships between bank earnings and capital for U.S. banks over the period of 1983 1989 and finds that, contrary to what one might expect in situations of perfect capital markets with symmetric information see there is a positive relationship between capital and return on equity. This result, according to the author, is consistent with the “expected bankruptcy cost hypothesis.” More specifically, Berger’s results suggest that banks with higher levels of capital see their funding costs decrease to such an extent that it more than offsets the cost of issuing additional capital. While Berger 1995 applies the concept of the “expected bankruptcy cost hypothesis” in the realm of capital, it is also conceptually applicable to the impact of liquid assets on profitability, whereby banks holding more liquid assets benefit from a superior perception in funding markets, reducing their financing costs and increasing profitability.

### **Size and bank liquidity**

Large banks are likely to perform higher levels of liquidity creation that exposes them to losses associated with having to sale illiquid assets to satisfy the liquidity demands of customers. Hence, there can be positive relationship between bank size and illiquidity. However, since small banks are likely to be focused on traditional intermediation activities and transformation activities (Rauch et al. 2008; Berger and Bouwman 2009) they do have small amount of liquidity. Hence, there can be negative relationship between bank size and illiquidity.

#### **2.1.4 The challenge of liquidity risk management**

As per BIS (2008), Liquidity is the ability to fund increases in assets and meet obligations as they come due. Within this definition is an assumption that obligations will be able to be met “at reasonable cost”. Liquidity risk management seeks to ensure a bank’s ability to continue to do this. This involves meeting uncertain cash flow obligations, which depend on external events and on other agents’ behavior. The fundamental role of banks in facilitating the maturity transformation of short-term deposits into long-term loans makes banks inherently vulnerable

to liquidity risk, the risk that demands for repayment outstrip the capacity to raise new liabilities or liquefy assets.

Effective risk management estimates future cash flow requirements under both normal and stressed conditions. This presents a challenge even under relatively benign market conditions, as it requires the ability to draw information from various operations of the bank and assess the impact of external events on the availability of funding liquidity. This challenge increases, however, during stressed conditions, as the assumptions underlying liquidity risk may change – notably through changes in counterparty behavior and market conditions that affect the liquidity of financial instruments and the availability of funding. These factors give rise to a different and significant set of challenges for firms in assessing their liquidity risk and for supervisors in the evaluation of risk management and controls. (Ibid)

Financial innovation and global market developments have transformed the nature of liquidity risk in recent years. The funding of some banks has shifted towards a greater reliance on the capital markets, which are potentially a more volatile source of funding than traditional retail deposits. In addition, the growth and product range of the securitization market has broadened as the originate-to-distribute business model has become more widespread. These factors have increased the potential for rapid shifts in demands on the funding capacity of the institutions, as well as the buildup of loan inventory in banks' warehouses prior to securitization. Also, the complexity of financial instruments has increased. This has led to a heightened demand for collateral and to additional uncertainty on prospective liquidity pressures from margin calls, as well as to a lack of transparency that may (and recently did) contribute to asset markets contracting in times of stress. Parallel to these market developments, the increasingly real-time nature of payment and settlement systems and the increasing interdependence among different systems has increased the importance of intraday liquidity management. Increased cross-border business, in combination with these structural changes, means that events in one market can quickly impact another. (Ibid)

### **2.1.5 The Elements and Shortcomings of Liquidity Risk Management**

According to Peter Neu and Pascal Vog (2012), liquidity is the capacity to obtain cash when it is needed. While this definition applies to all types of financial and non-financial enterprises, liquidity risk for a bank is more specific. It is the risk that a financial institution will be perceived as being unable to meet present and anticipated cash-flow needs. Liquidity risk can

be segmented into three categories: maturity mismatch risk, contingency liquidity risk, and market liquidity risk.

Managing mismatches in cash flows is an integral part of the business and a relatively straight forward task. Maturity transformation is, after all, one of the primary economic functions that banks provide. Banks manage this risk by holding a reserve of central-bank-eligible securities. Contingency and market liquidity risks are far more difficult to manage. To understand these risks, banks need to anticipate how markets and customers will respond to extreme situations, and how these responses, in turn, will affect the bank's funding ability and the sale ability of its assets. (Ibid)

Contingency liquidity risk, for example, is the risk of not having sufficient funds to meet sudden and unexpected short-term obligations. By managing this risk, a bank can safeguard its reputation to meet its obligations, especially in times of crisis. To do this, Banks need to develop contingency plans, keep a comfortable level of counter-balancing capacity and capital on hand, and manage investors' perceptions by disclosing the bank's liquidity profile and funding needs under different scenarios. (Ibid)

The risk manager's mission is the same across all types of liquidity risk to avoid a liquidity squeeze. To this end, a risk manager needs to gather up-to-date, transparent information about cash-flow mismatches, contingency outflows, sale ability of assets, and counter balancing capacity, and run scenarios that test the bank's capacity to handle various threats. Risks are managed through policies, limits, and contingency funding plans, as well as through actions such as diversifying funding sources. A good manager will also demystify liquidity risk through clear reporting and a comprehensive transfer-pricing system. Ultimately, however, liquidity risk managers can only be effective if they are involved in an enterprise-wide management and governance process that links risk profiles to a bank's strategy and business model. (Ibid)

As critical as these practices are, many banks do not have adequate capabilities for managing liquidity risk. The crisis underscored the widespread shortcomings of liquidity risk management, which can be traced back to several factors:

- Banks took the pre-crisis condition –ample market liquidity (in particular in money markets), low volatility and low interest rates – for granted and underestimated the importance and relevance of liquidity risk.

- Contagion effects leading eventually to excess liquidity needs (e.g., through draw-downs on backstop facilities to conduits, collateral needs in out-of-the-money Derivative contracts) were ill-understood and not sufficiently considered in stress scenarios. As a consequence liquidity reserves were too low and consisting of assets with deteriorating market value; contingency plans were inappropriate.
- Pricing of liquidity risk was not implemented rigorously. In particular contingent liquidity risk in off-balance sheet positions and refinancing risk in structured tradable assets was priced wrongly leading to an incentive for traders to take excess liquidity risk. To a considerable part, the P&L of structured desks resulted from a liquidity arbitrage without having the bank realizing and accounting for this.
- Liquidity risk was not considered sufficiently in banks' strategic discussion and planning processes. Quite often treasurers became involved very much at the end of the process leading in some banks to excessive cross-border and cross-currency funding needs to match a strong asset growth.
- Regulators did not thoroughly address liquidity risk during the Basel II consolidation process. Regulators have recognized this short-coming and have put strong emphasis on liquidity risk in the newly issued Basel III framework by introducing a quantitative liquidity risk framework addressing both short-term and structural liquidity risk.
- Many Banks were not technically capable of monitoring their gap profile with the necessary detail and frequency. Best-practice monitoring is a daily task. It shows overall gaps as well as gaps by region and currency, and under various scenarios. Also, quantitative techniques for forecasting cash outflows were not always robust, and the counter-balancing capacity of many banks was often insufficient under various stress scenarios.
- But technical faults were only part of the reason why banks had difficulty managing liquidity risk; resolving these issues would not necessarily prevent another financial meltdown. Deeper problems stemmed from banks' reliance on purely quantitative approaches, which suffer from a lack of business judgment. In the case of liquidity risk, qualitative judgment is particularly critical—mathematical models will cover only some of the elements that contribute to a bank's risk profile. As a result, an emphasis

on quantitative, probabilistic methods severely compromised the ability of risk managers to understand implicit liquidity risk in their banks' business models.(Ibid)

### **2.1.6 Fundamental Principles for Liquidity Risk Mgmt and Supervision**

In December 2006, the Basel Committee on Banking Supervision (BCBS) established the Working Group on Liquidity (WGL) to review liquidity supervision practices in member countries. The WGL's mandate was to take stock of liquidity supervision across member countries. This included an evaluation of the type of approaches and tools used by supervisors to evaluate liquidity risk and banks' management of liquidity risks arising from financial market developments. The fundamental principles for the management and supervision of liquidity risk is anchored on the four pillars namely governance of liquidity risk management, measurement and management of liquidity risk, public disclosure and the role of supervisors.(BIS 2008)

Eugene & Daves (2004) enumerates various reasons why organization needs to manage liquidity risks. Major objective of liquidity risk management in Banks is to increase the returns for its shareholders owners and to reduce probability of insolvency or turmoil.

## **2.2 Review of Empirical Studies**

Within the last few years, a number of studies have provided the discipline into the practice of risk management within the MFI and banking industry. An insight of related studies is as follows:

Koziol & Lawrenz (2008) provided a study in which they assessed the risk of bank failures the major risks that were faced by these banks were amongst them liquidity risk. A regression model was used to elaborate the results which showed that Risk Identification, and Risk Assessment and Analysis.

Adolpus,2008 studied liquidity management practices of selected Nigerian banks by evaluating, the relevance of treasury objectives in bank portfolio management, causes of asset-liability mismatch in banks, causes of liquidity crisis, incidence of treasury risk, adequacy or appropriateness of liquidity risk management techniques, liquidity planning practices of Nigerian banks, and extent of liquidity exposure in banks. The rampant reported cases of liquidity crisis and financial distress in the Nigerian banking industry have necessitated a study on how to manage the bank's liquidity exposure.

Bhole & Mahakud (2009) alludes that risk management in bank operations includes risk identification, measurement and assessment, and its objective is to minimize negative effects risks can have on the financial result and capital of a bank. Banks are therefore required to prescribe procedures for risk identification, measurement and assessment, as well as procedures of risk management.

Aggregated stress testing of Lithuanian MFIs results of the 2002 showed that MFIs consider liquidity risk to be the most important risk, constituting over 62% of possible losses.

Dokulilova, 2009 noted in their study on the problems of microfinance and the sustainability of Micro finance institutions (MFI) in financial crisis. They found, that MFIs are often considered as one of the most effective and flexible strategies in the fight against global poverty.

Hassan (2009) made a study on risk management practices of Islamic banks of Brunei Darussalam and examines the degree to which the Islamic banks in Brunei Darussalam implemented risk management practices and carried them out thoroughly by using different techniques to deal with various kinds of risks.

In banking industry, liquidity risk has an opposite effect on profitability. Some studies such as Molyneux & Thornton (1992) and Barth et al. (2003) supported the positive effect of risk on the profitability; while some studies such as Bourke (1989) and Kosmidou et al. (2005) believed in its negative effect. Liquidity risk is usually measured as liquidity ratio which is practically calculated in two different forms. In first type, liquidity is adjusted by size which includes the ratio of cash asset to total asset (Barth et al., 2003; Demirguc-Kunt et al., 1999), the ratio of cash asset to deposits (savings) (Chen et al., 2010). Second type includes the adjusted loan by the size which includes the ratio of total asset and/or the ratio of net loan to total asset (Kosmidou et al., 2005).

The study by Vodova (2011).revealed that bank liquidity was positively related to capital adequacy, interest rates on loans, share of non-performing loans and interest rates on interbank transactions. In contrast, financial crises, higher inflation rate and growth rate of gross domestic product have negative impact on bank liquidity. The relation between the size of the bank and its liquidity was ambiguous as it was expected. The study also found that unemployment, interest margin, bank profitability and monetary policy interest rate/repo have no statistically significant effect on liquidity of Czech commercial banks.

One of the popular financial ratios used in such measurement is liquidity ratios which measures the ability of the bank to meet its current obligations (Vodova, 2011).The liquidity ratios are composed of current ratio and quick ratio. Current ratio is a measure of a commercial bank's short term solvency and is calculated by dividing current assets by current liabilities incurred (Vodova, 2011).The current assets are composed of cash and those assets which can be converted into cash in a short period which include marketable securities, receivables, inventories, and prepaid expenses. Current liabilities consists all obligations maturing within a year. They include accounts payable, bills payable, note payable, accrued expenses and tax liability. A current ratio that is greater than one is adjudged satisfactory for most business firms even though it is difficult to authoritatively set one standard for all firms.

$L1 = \frac{\text{Liquid Assets}}{\text{Total Assets}}$

Total Assets

The liquidity ratio L1 should give us information about the general liquidity shock absorption capacity of a bank (Vodova, 2011).

$L2 = \frac{\text{Liquid Assets}}{\text{Deposits}}$

Deposits

The liquidity ratio L2 is more focused on the bank's sensitivity to selected types of funding. The ratio L2 should therefore capture the bank's vulnerability related to these funding sources. The bank is able to meet its obligations in terms of funding (the volume of liquid assets is high enough to cover volatile funding) if the value of this ratio is 100 % or more. Lower value indicates a bank's increased sensitivity related to deposit withdrawals (Vodova, 2011).

$L3 = \frac{\text{Loan}}{\text{Deposits}}$

Deposits

The last liquidity ratio L3 relates illiquid assets with liquid liabilities. The higher this ratio the less liquid the bank is (Vodova, 2011).

The ratio of liquid assets to total deposits shows what percentage of a bank's deposits is held in liquid form. It relates liquid assets directly to deposit level. The principal limitation of these two ratios is the difficulty in ascertaining what should be the liquidity characteristics of cyclical secondary reserves (Nwankwo, 1991).

The ratio of loan and advances to deposits reflects the quantity or proportion of the customers' deposits that has been given out in form of loans and the percentage that is retained in the liquid forms. The ratio serves as a useful planning and control tool in liquidity management since commercial banks use it as a guide in lending and investment, and to make a total evaluation of their expansion program. When the ratio rises to a relatively high level, banks are encouraged to lend and invest and vice versa, to take some benefit of profitability (Rychtarik, 2009).

### **Empirical studies in Ethiopia**

Currently, Ethiopian private commercial banks offer four major services in all of their branches namely, Credit Facility, Saving Scheme, International Banking, and Fund Transfer. Moreover, some of the banks are also providing the customer's credit card payment systems that can be used internationally. The other service the banks render is deposit services including demand deposit, savings deposit, youth savings deposit and time/fixed deposit (Simeneh, 2013).

The banks also render international banking services providing services like; opening letters of credit for importers, handling of incoming LCs for exporters, purchase of outward bills purchasing and selling of foreign currency denominated notes, receiving and transferring foreign currency payment by swift and handling incoming and outgoing international letters of guarantee. (Seid, 2005)

Excess reserve and excess liquidity are among the major problems facing the banking system in Ethiopia today. In addition to this, that these problems are not actually distributed among the banks. Commercial Bank of Ethiopia, takes respectively 90.7 and 79.4 percent of excess reserves and excess liquid assets seen in the Ethiopian commercial banking sector at the close of June 2005. The persistence of these excess reserves and excess liquidity problem is also implied in the interest rate structure of the banks as both the lending and deposit rates are almost constant and show a very limited or no change unless NBE revised the minimum deposit rates for saving and time deposits. (Tihitina, 2006)

According to (Simeneh, 2013) currently private banks are suffering from various challenges. From those challenges expressed in the research non-performing loans, inflation, the exposure of private banks for international financial crisis, lack of appropriate technology were assessed in deep. In addition to that banking business risks like foreign exchange risk, interest risk, credit risks, operation risks, and market and liquidity risks were among the main issues. Market

and liquidity risks for private commercial banks were presented like this, Liquidity risk arises in the general funding activities of the banks and the management of positions. It includes the risk of being unable to fund assets at appropriate maturation and rates and the risk of being unable to liquidate an asset at a reasonable price and in appropriate time frame. Normally banks have a reasonable price funding base. Funds are raised mainly from the customer's deposits (Simeneh, 2013).

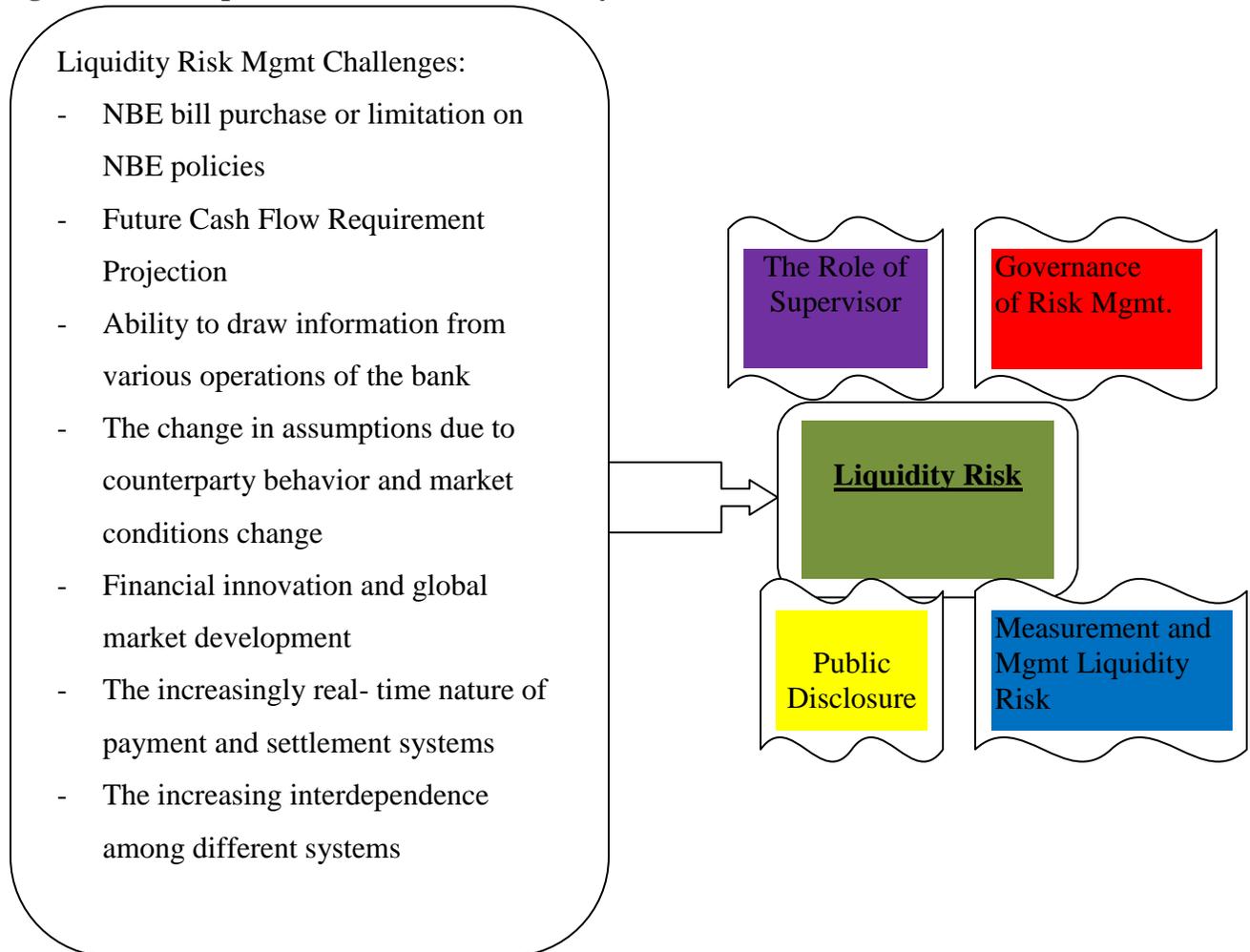
In many private banks, Asset and liability management committees are responsible in managing funding mismatch and attaining desirable level of liquidity in the manner described in the risk management policy of the financial statement analysis of the contractual maturities of assets and liabilities (Simeneh, 2013).

According to (Tseganesh, 2012) The positive and statistically significant impact of capital adequacy and bank size up on the financial performance of commercial banks in Ethiopia was in line with "expected bankruptcy cost hypothesis" and the results of (Berger's 1995). According to this hypothesis banks with higher levels of capital see their funding costs decrease to such an extent that it more than offsets the cost of issuing additional capital. The coefficient sign of capital adequacy and bank size in the case of liquidity equation as well as financial performance equation were positive and statistically significant. This indicates the positive relationship between liquidity of commercial banks and their financial performance. In the other word, banks holding more capital and had large size had more liquid assets benefit from a superior perception in funding markets, reducing their financing costs and increasing profitability.

### **2.7.1 Conceptual Framework**

The conceptual framework of this study is developed based on the two core and relevant issues discovered under this study which are not yet stated jointly in most studies. The first issues spells out the four constructive principles four sound liquidity risk management and supervision. The second issue will presents the potential liquidity risk management challenges distinctive to Ethiopian private banks and current practices. So by taking this work and clusters as a base, and to test in the Ethiopian context, the researcher developed the following conceptual framework.

**Figure 2.1 Conceptual Framework of the Study**



Source: (BIS, 2008)

# **CHAPTER THREE**

## **RESEARCH DESIGN & METHODOLOGY**

In this area researcher wants to present the design and methodology of the study. It spells out the techniques and methods of data sampling, collection, processing, and analysis.

### **3.1 Research Design**

In order to achieve the objectives of the study, the research undertake descriptive approach using both qualitative and quantitative data. In doing so, the study will intends to describe, and interpret the existing facts about liquidity risk management practices and challenges.

### **3.2 Data Type and Source**

The research were used both primary and secondary data for the study. Primary data was collected through questionnaires distributed to respondents that involve clerical staffs of Treasury and risk management directorate of the sample private commercial banks. Secondary data was obtained from publications of annual reports from year 2012 up to 2016.

### **3.3 Population Size, Sampling Techniques and Sample Size**

The study population includes all private commercial banks in Ethiopia. According to NBE report, at the end of June 30, 2016 there are sixteen privately owned commercial banks and two publicly owned commercial banks.

The researcher used the simple random sampling procedure to select samples that represent the entire population. Simple Random sample was appropriate for this study as the target population was homogeneous and it was also a sure way to reduce bias to the barest minimum as the procedure ensures that the various populations had equal chances of being selected (Kothari, 2004).

Therefore, from the target population of 16 private banks, a sample size of 6 banks or 38% were taken. 30 professional workers in the six private commercial banks in the department of treasury and Risk management Directorate, related to liquidity management of the bank, as a whole were taken as participants of the study. These are Dashen Bank S.C, United Bank S.C, Lion International Bank S.C, Berhane International Bank S.C, Abay Bank S.C and Addis International Bank S.C. The idea behind purposive sampling is to concentrate on people who

have knowledge on liquidity management because they would better be able to assist with the relevant research data. The study is conducted at the head offices of selected private commercial banks considered in this study.

### **3.4 Method of Data Collection**

For the purpose of the study, both primary and secondary data were used. Primary data was collected through questionnaires distributed to respondents on treasury and risk management directorate. The secondary data was collected from annual reports and NBE directives.

### **3.5 Method of Data Analysis**

Due to qualitative and quantitative nature of data that were gathered, data analysis was carried out using descriptive statistics by applying Statistical Package for Social Scientist (SPSS) to present the data in well organized and convenient manner. Data analysis involved editing, tabulation and coding of data. The editing process involved correcting and inspecting each questionnaire to ensure completeness, comprehensiveness and consistency. The researcher mostly used frequencies of tables and graphs for presentation of the analysis results.

# **CHAPTER FOUR**

## **RESULTS AND DISCUSSIONS**

### **4.1 Introduction**

In this part researcher presents the research findings and interpretations of the data gathered via questionnaires and secondary data. First, liquidity risk exposure of the six private commercial banks analyzed using secondary data and then, their liquidity risk management practices and challenges is discussed based on the respondent responses.

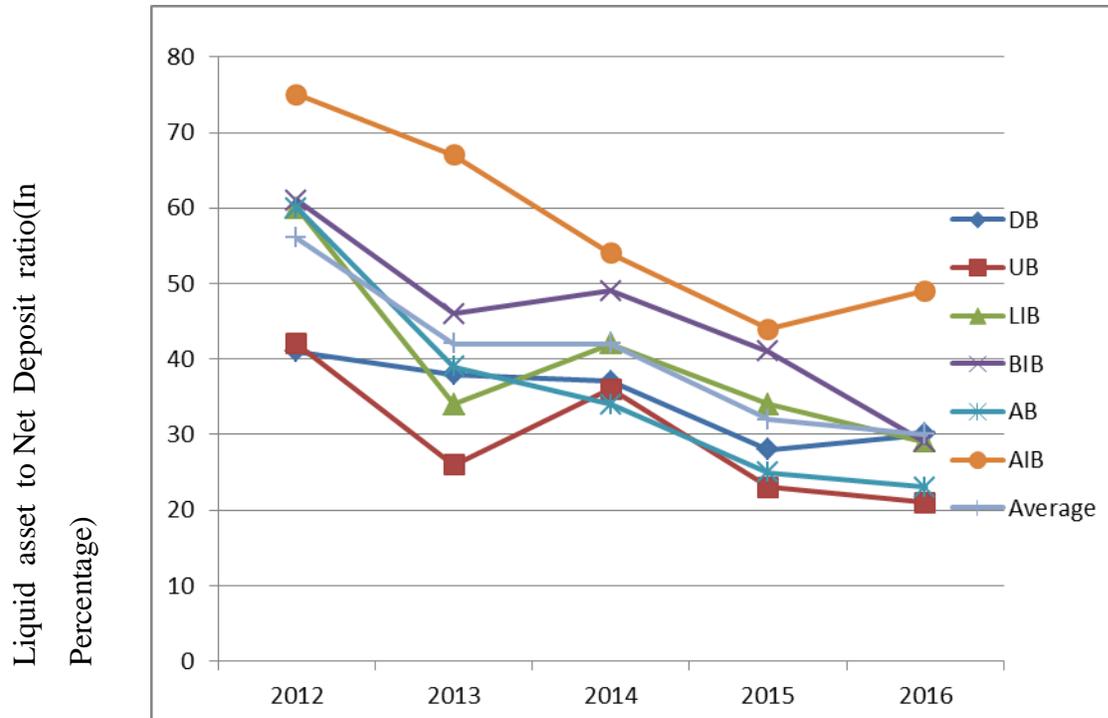
### **4.2 Liquidity Exposure of Private Commercial Banks in Ethiopia**

Liquidity position of commercial banks is evaluated based on liquid assets which include cash on hand, deposits with local and foreign banks and treasury bills and other items compared with liquid assets. Net deposit is composed of demand deposits, saving deposits and time deposits which are liabilities for the bank. Net loan is an asset which indicates any amount that is given to clients (debtors). NBE bill is a bill purchased by private commercial banks which is 27% of each loan granted. The liquidity position of each bank is analyzed using Liquid Asset/Net deposit, Liquid Asset/Total asset, Net loan/ Net deposit ratios and NBE bill purchase.

#### **4.2.1 Analysis of Liquidity Position of Private Commercial Banks using Liquid**

##### **Asset/Net Deposit**

Liquid asset/net deposit ratio indicates the extent to which the bank's total liquid assets composed of deposits from customers and other financial institutions. The change in the average liquid asset/net deposit ratio of the industry and each bank's yearly liquid asset/net deposit ratio during the five years under review is depicted by the following graph.



**Figure 4.1** Trend of Liquid Asset /Net Deposit Ratio /In Percentage/  
**Source:** Annual reports of banks (From 2012-2016)

Table 4.1 -Trend Equation and R square for Liquid Asset to Net Deposit Ratio for the private banks for Five years

Banks	Trend Equation	R squared
DB	$y=44.4-3.2t$	0.83
UB	$y=43.1-4.5t$	0.62
LIB	$y=58.4-6.2t$	0.64
BIB	$y=65.9-6.9t$	0.87
AB	$y=62.6-8.8t$	0.88
AIB	$y=80.3-7.5t$	0.85
Bank Average	$y=59-6.2t$	0.9

**Source:** Annual reports of banks (From 2012-2016)

As can be seen from figure 4.1, the liquid asset/net deposit ratio of private Commercial Banks of Ethiopia is decreasing from year to year since 2012 to 2016. It can be seen from the above table; all bank's liquid asset to net deposit ratio on average dwindled from the maximum of 8.8% up to minimum of 3.2% in each year. The bank average is also showed that the liquidity position reduced by 6.2% with R square value of 90% which indicate that all banks had kept a lot of idle funds in year 2012 while the next four years the liquidity position dramatically declined and their

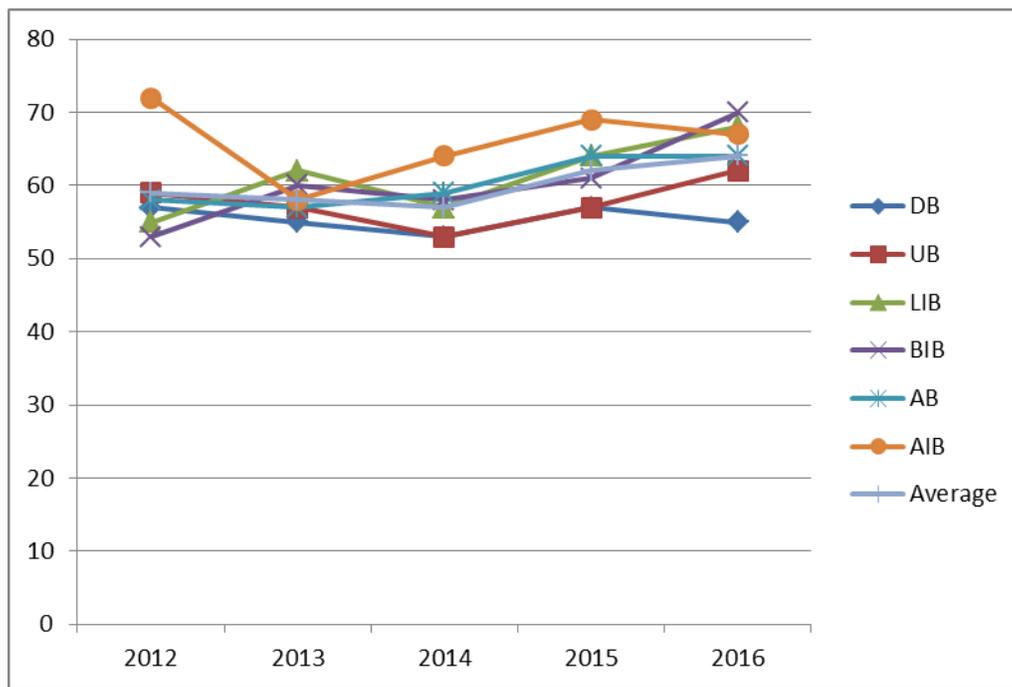
liquidity becomes deteriorated. The continuous decline in the liquid asset/net deposit ratio is attributed to the shift in investment from short term investment (liquid asset) to long term investment (illiquid assets).

When we see each bank performance, AIB maintains liquid asset/net deposit ratio more than the industry average in all the five years whereas the remaining banks have fluctuating pattern over the years above and below the industry average.

Generally, the Private commercial banks considered in this study have average liquidity position while the trend is dynamically changed from liquid asset to illiquid asset when it is measured by liquid asset/net deposit ratio.

#### 4.2.2 Analysis of Liquidity Position of Private Commercial Banks using Loan/deposit ratio

Loan to deposit ratio measures that the extent to which deposits have financed loan portfolio which are considered illiquid assets. Banks mobilizing deposits payable on demand whereas they granted loans to their customers which will be settled on the long term. These phenomena squeezed the bank liquidity position and it is also encountered for liquidity risk if banks may not have good funding strategy. The loan to deposit ratio of the industry and each bank's during the five years under review is depicted by the following graph.



**Figure 4. 2** Trend of Loan/Deposit Ratio (in percentages)

**Source:** Annual reports of banks (From 2012-2016)

Table 4.2 -Trend Equation and R square for Loan to Deposit Ratio for the private banks for Five years

<b>Banks</b>	<b>Trend Equation</b>	<b>R squared</b>
DB	$y=56-0.2t$	0.04
UB	$y=55.8+0.6t$	0.08
LIB	$y=52.8+2.8t$	0.7
BIB	$Y=49.9+3.5t$	0.8
AB	$Y=54.7+1.9t$	0.8
AIB	$y=65.7+0.1t$	0
Average	$y=55.8+1.4t$	0.58

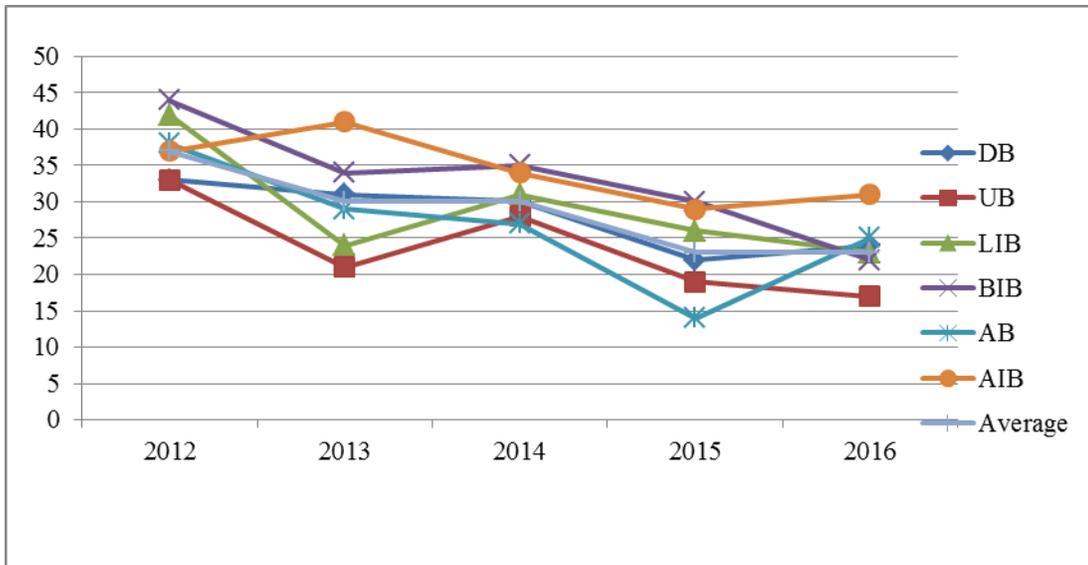
**Source:** - Annual reports of banks (From 2012-2016)

The above graph shows that the average loan/net deposit ratio of all the six banks fluctuated between 50 percent and 70 percent while all banks have shown a positive increment except DB. The loan to deposit ratio of the industry is also growing up by 1.4% within the five years. This indicates that much amount of liquid asset becomes tied up on long-term loans and banks are not able to get easily at time where unexpected commitments or obligation they become due. Accordingly, the liquidity position of the banks that is the deposit loan ratio wouldn't allow them to give loans, since they can't go beyond a certain level.

Except AIB, the loan/net deposit ratio is less than the industry averages in each year. In both case, liquid asset/net deposit and loan to net deposit ratios of AIB put on the highest mark which means that even if the bank generate a liquid cash from deposit & selling of shares, a lot of cash seized on current asset and loan & advance instead of other assets such as investments & fixed assets.

#### **4.2.3 Analysis of Liquidity Position of Private Commercial Banks using Liquid Asset/Total Asset**

This ratio indicates that the extent of easily converted into cash asset against the total asset. The Liquid Asset to Total Asset ratio of the industry and each bank's during the five years under review is depicted by the following graph.



**Figure 4. 3** Trend of Liquid Asset/Total Asset Ratio (in percentages)

**Source:** Annual reports of banks (From 2012-2016)

Table 4.3 -Trend Equation and R square for Liquid Asset to Total Asset Ratio for the private banks for Five years

.Banks	Trend Equation	R squared
DB	36.1-2.7t	0.81
UB	33.8-3.4t	0.65
LIB	40-3.6t	0.53
BIB	47.4-4.8t	0.9
AB	38.9-4.1t	0.56
AIB	41.6-2.4t	0.63
Average	39.1-3.5t	0.89

**Source:** Annual reports of banks (From 2012-2016)

As shown from the above figure, Like Liquid asset to Net deposit ratio, all banks liquid asset to total asset ratio on average declined from the maximum 4.8% to the minimum of 2.4% yearly. The industry average of Liquid Asset to Total Asset ratio has shown also a declining pattern across the trend. In the year 2012, all the six banks had registered more than 33 percent while in the next four years most of banks performance had become deteriorated.

Generally we can conclude that banks asset becomes more tied up on long term asset instead of liquid assets and this poses a challenge for banks encountering liquidity risk in their day to day operations.

### 4.3 Liquidity Risk Management practices Of Private commercial Banks

In September 2008, the Basel Committee on Banking Supervision revised their document “Principles for Sound Liquidity Risk Management and Supervision”, by providing more guidance on liquidity risk management. The fundamental principles for the management and supervision of liquidity risk is anchored on the four pillars namely governance of liquidity risk management, measurement and management of liquidity risk, public disclosure and the role of supervisors. Because of the importance of managing liquidity risks in banks, the principles proposed are valuable and may be found useful regardless of what financial market sector your business is in. Therefore, based on these four principles the researcher analyzed the practices of private commercial banks as follows.

#### 4.3.1 Governance of Liquidity Risk Management

One of the principles stipulated on sound liquidity risk management and supervision is the governance of liquidity risk management. Based on the principle, the researcher asked the respondents weather the principles practiced in their banks or not and the responses are depicted in the following table.

Table 4.4 Governance of liquidity risk management practices

Questions asked for the respondents.	Response	Frequency	Percent.
Does the bank have liquidity risk management policy and procedure?	Yes	30	100.0
	No	0	0.0
	Total	30	100
Is the liquidity risk management policy and procedure approved by the board of directors?	Yes	30	100.0
	No	0	0.0
	Total	30	100
Is a bank clearly articulates a liquidity risk tolerance that is appropriate for its business strategy?	Yes	26	86.7
	No	4	13.3
	Total	30	100
Is senior management developing a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance?	Yes	26	86.7
	No	4	13.3
	Total	30	100.0
Is senior management continuously reviewing information on the bank’s liquidity risk practice and report to the board of directors on a regular basis?	Yes	25	83.3
	No	5	16.67
	Total	30	100.0

**Source:** Primary data (questionnaire) (2017)

As shown in the above table, 100 percent of the respondents are acknowledged that the selected banks have the liquidity risk management policy and procedures and each bank's board of directors reviewed and approved the strategies, policies and practices related to the management of liquidity risk. The principle of Basel Committee is also stated that sound liquidity risk management begins with appropriate policies, procedures, guidelines and limits and effective board and senior management oversight. Therefore, based on the data, it can be concluding that all sample banks having approved liquidity risk management policy and procedure which required by the Basel principle.

Accordingly, 86.7% of the respondents confirmed that their banks have liquidity risk tolerance that is appropriate for its business strategy to ensure that the bank maintain sufficient liquidity and the remaining 13.3% were said no. As per the principle, the tolerance, this should define the level of liquidity risk that the bank is willing to assume, should be appropriate for the business strategy of the bank and its role in the financial system and should reflect the bank's financial condition and funding capacity.

Consistent with the above response, respondents were asked whether senior management is responsible for developing and implementing a liquidity risk management strategy in accordance with the bank's risk tolerance or not. As of the Basel requirement, 86.7 percent of the respondents confirmed that senior management developed liquidity risk management policies in accordance with the risk tolerance and the remaining 13.3% were respond no. As the principle of Basel committee requires 83.3% of the respondents were verified that the senior management continuously reviewed information on the bank's liquidity risk practice and report to the board of directors on a regular basis so that the bank's board of directors should ensure that senior management manages liquidity risk effectively.

Generally, it can be conclude that the governance of liquidity risk management exhibited in all the banks in accordance with the Basel principle and these can be seen as a good practice observed during the study.

#### **4.3.2 Measurement and Management of liquidity Risk**

Liquidity need and liquidity supply are situation specific. Different circumstances that cause bank's liquidity need differ. Likewise, the supply of liquidity by creditors or depositors will change given differing situations. Too much liquidity can impact a financial institution's profitability; too little liquidity can bring negative impacts due to the inability to meet contractual obligations.

With this regard, private commercial banks considered in this study used to measure & manage liquidity risk (be it shortage or excess) using different methods and the following responses were collected from the respondents.

Table 4.5 Measurement and Management of liquidity Risk

Questions asked for the respondents.	Response	Frequency	Percent
Is a bank identifying, measuring, monitoring and controlling liquidity risk?	Yes	30	100
	No	0	0
	Total	30	100
Does the bank actively monitor and control liquidity risk exposures and funding needs within and across legal entities, business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity?	Yes	9	30.0
	No	21	70.0
	Total	30	100.0
Does the bank establish a funding strategy that provides effective diversification in the sources and tenor of funding?	Yes	11	36.6
	No	19	63.3
	Total	30	100.0
Does the bank conduct stress tests on a regular basis for a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) to identify sources of potential liquidity strain?	Yes	8	26.7
	No	22	73.3
	Total	30	100.0
Does the bank has formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations?	Yes	7	23.3
	No	23	76.7
	Total	30	100.0

**Source:** Primary data (questionnaire) (2017)

According to the response forwarded by respondents of private banks, 100 percent of the respondents are agreed that all selected banks are identify, measure, monitor and control their liquidity risk even if 70% of respondents were not agreed that the selected banks are actively monitor and control their liquidity risk exposures and funding needs within and across legal

entities, business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity.

As per Basel, In addition to actively monitoring & controlling on liquidity risk, its paramount important if a bank should establish a funding strategy that provides effective diversification in the sources and tenor of funding. However, 63.3% of the respondents noted that banks are not yet established a funding strategy that regularly determine its capacity to raise funds quickly from each source in line with the demand.

Unlike with the Basel Committee principles, its observed that more than 73.3% of the respondents noted that the selected banks were not conducted a regular stress tests for a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) which might significant to identify the sources of potential liquidity risk damage. In addition, as most of the respondents confirmed that such particular banks has no formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. It's confirmed for about 76.7% of the respondent's response.

From the aforementioned analysis we can conclude that although the selected private banks has a mechanism of monitoring & controlling of liquidity risk, most of the banks have not active monitoring system, fund diversification strategy, conducting stress testing of liquidity risk and formal contingency plan required by the Basel committee.

### 4.3.3 Public Disclosure

As per the principle of Basel, banks should publicly disclose information on a regular basis that enables market participants to make an informed judgment about the soundness of its liquidity risk management framework and liquidity position. This information enables relevant stakeholders to make an informed judgment about the ability of the bank to meet its liquidity needs. Therefore, based on the principle, the respondent requested weather they disclosed information to the public or not and their responses described here under:

Table 4.6 Publicly Disclose Information on a Regular Basis

Description	Frequency	Percent
Yes	8	26.7
No	22	73.3
Total	30	100.0

**Source:** Primary data (questionnaire) (2017)

The aforementioned table shows that more than 73.3 % were thought that banks are not disclosed the required information on their liquidity risk management framework and liquidity exposure on regular basis to the public. However, 26.7% of respondents were agreed that banks keen in disclosing the necessary information pertaining to the soundness of liquidity risk management framework and liquidity position.

According to the respondent answers, the second question also forwarded for those answers is yes and they are asked to whom the information is disclosed and among the total respondents, 7(87.5%) respondents were said that the required information is disclosed the supervisor body that is National Bank of Ethiopia and the remaining one (12.5%) respondents were to general public in a yearly basis on their annual report.

Table 4.7 to whom they disclosed

Description	Frequency	Percent
Public	1	12.5
NBE	7	87.5
Others	0	0
Total	8	100.0

**Source:** Primary data (questionnaire) (2017)

As shown from the above table, most of the banks disclosing their liquidity position to the central banks instead of the market participants. This indicates that most of the private banks are not disclosing information that provides market participants with further insight into how banks manage liquidity risk.

#### 4.3.4 Role of Supervisors

Supervisors should require banks to have a robust liquidity risk management strategy, policies and procedures to identify, measure, monitor and control liquidity risk consistent with the principles and maintain a sufficient level of liquidity as insurance against liquidity stress. In our context, the supervisory role given to National Bank of Ethiopia in order to assess the commercial banks overall liquidity risks management framework & position and the respondents asked whether the NBE conduct liquidity risk assessment or not. Accordingly, they also asked how they perceive the NBE intervention on their liquidity risk management. The respondent answer depicted on the following table.

Table 4.8 NBE Assessment & Intervention

Questions asked for the respondents.	Response	Frequency	Percent
Does NBE regularly perform a comprehensive assessment on the bank overall liquidity risk management framework and liquidity position?	Yes	28	93.3
	No	2	6.7
	Total	30	100.0
How do you perceive the intervention of NBE?	Satisfactory	21	70.0
	Good	6	20.0
	V. Good	3	10.0
	Total	30	100.0

**Source:** Primary data (questionnaire) (2017)

As it can be observed in the preceding table, 93.3% of the respondents thought that National Bank of Ethiopia performs a comprehensive assessment on the bank's overall liquidity risk management framework and liquidity position on a regular basis. However, around 70% of the respondents perceived that the existing supervisory intervention of NBE is only considered for Satisfactory level and it is not as such adequate to assess the banks' liquidity stress testing and contingency planning, as both are crucial elements of liquidity risk management. Moreover, as it is strictly advised by the Basel Committee, such value adding supervisors should critically assess the scope and severity of the scenarios and underlying assumptions; after doing so, they may suggest enhancements to a bank's scenarios or the use of specific scenarios that, at a minimum, are to be included in the existing bank's stress testing program.

#### **4.4 Challenges of Liquidity Risk Management in Private Banks in Ethiopia**

There are deferent challenges banking sector facing in liquidity risk management. Therefore, as per the perception of the respondents' challenges that affect bank performance in liquidity risk management for private banks considered as very important were the following: respondents were asked about what are the major challenges they think. Diverse answers were received from the respondents, those employees working in Finance & Accounts and Risk Management Offices were able to put the challenges in a precise manner.

Most of the respondents (33 percent) said that the main challenge is the imposition of a policy by the government to purchase mandatory purchasing bonds with a low interest rate, recently the government has forced banks to buy government bonds and of the total loans they provide they should buy 27% of the loan with 3% interest rate. Since recent times the government imposes different policies to the banking sector and it is not surprising that thirty three percent of the respondents said that policy issues are the challenge that adversely affect in managing liquidity

risk in private commercial banks, while equal number of respondents said that financial innovation and global market development and the increasingly real- time nature of payment and settlement systems are the second challenging problems in managing liquidity risk, they are about 18 percent each.

Other challenges answered by the respondents such as Future Cash Flow Requirement Projection, the increasing interdependence among different systems, Ability to draw information from various operations of the bank and the change in assumptions due to counterparty behavior and market conditions change have also rated 11 percent,8 percent,7 percent and 5 percent respectively as shown from the following table.

Table 4.9 Respondent’s perception on the challenges faced by private commercial banks in relation to liquidity risk management

<b>The Challenges</b>	<b>Frequency</b>	<b>Relative Frequency ( %)</b>
NBE Bill purchase	24	33%
Future Cash Flow Requirement Projection.	8	11%
Ability to draw information from various operations of the bank	5	7%
The change in assumptions due to counterparty behavior and market conditions change	4	5%
Financial innovation and global market development	13	18%
The increasingly real- time nature of payment and settlement systems	13	18%
The increasing interdependence among different systems	6	8%
<b>Total</b>	<b>73</b>	<b>100%</b>

**Source:** Primary data (questionnaire) (2017)

From the results above, all the aforementioned challenges affect private commercial banks in managing liquidity risk. Even though, all the factors are important and the main challenge fall under NBE bill purchase policy.

The government imposes different monetary as well as fiscal policies to be strictly followed by the banks this includes ‘credit cap’, mandatory purchasing of government bonds with a low interest rate. The current NBE policies obliged all private banks to purchase 27% of Birr 1 loan for each gross loan disbursement. This policy seriously affected the liquidity position of all

private banks and the profitability is also decreased due to the direct impact on their return on asset. The following table depict that the investment made on NBE bill purchase by six private commercial banks from year 2012 up to 2016.

Table 4.10 NBE Bill Purchase (In Millions)

Bank	Year					
	2012	2013	2014	2015	2016	Total
DB	2,025	2,922	103	149	191	5,393
UB	1,545	2,185	2,867	4,050	4,356	15,005
LIB	346	523	716	1,236	1,679	4,502
BIB	181	348	547	813	1,567	3,459
AB	175	374	630	1,040	1,546	3,766
AIB	40	179	102	320	455	1,098
Total	4,315	6,534	4,968	7,611	9,796	33,226

**Source:** - Annual Reports of the banks (From Year 2012 up to 2016)

Table 4.9 shows that a total of Birr 33,226 million invested on NBE bill purchase by the six private commercial banks from the year 2012 up to 2016. On average each bank invested Birr 5,537 million throughout the five years in NBE bill purchase instead of granting additional loan to its respective borrowers which has a great impact on the liquidity position of each private bank

Assuming that if there no such policy applied for private commercial banks, the Liquid asset to Net deposit ratio of those banks in year 2016 look like this; The liquidity position of DB increases from 30 percent to 31 percent, UB increases from 21 percent to 53 percent, LIB increases from 29 percent to 55 percent, BIB increases from 29 percent to 59 percent, AB increases from 23 percent to 55 percent and AIB increases from 49 percent to 78 percent.

Generally we can conclude that imposing policy of NBE purchase on private commercial banks has a great impact on their liquidity position. Nonetheless it does not mean that other liquidity risk management challenges are not much important to the private banks. Relatively speaking, even if some of the challenges got few respondents, still all the factors are important and have their own effect on their performance.

# CHAPTER FIVE

## CONCLUSION AND RECOMMENDATION

### 5.1 Conclusions

In this study attempt is made to assess the liquidity risk management practice and challenges of private commercial banks in Ethiopia. In addition to this, the liquidity exposure of private commercial banks and its impact on their liquidity position is overviewed.

In the analysis of liquidity position of banks using liquid asset to net deposit ratio, all Private commercial banks considered in this study have average liquidity position while the trend is dynamically changed from liquid asset to illiquid asset when it is measured by liquid asset/net deposit ratio. In the year 2012 all banks had kept a lot of idle funds while the next four years the liquidity position dramatically decreases.

Regarding loan to deposit ratio, the average loan/net deposit ratio of all the banks more than 50 percent which means that much amount of liquid asset tied up on long-term loans and banks are not able to get liquid asset easily at time where unexpected commitments or obligation it becomes due.

When we look the industry average of Liquid Asset to Total Asset ratio, it has shown a declining pattern across the trend. In the year 2012, all the six banks had registered more than 33 percent while in the next four years most of banks performance had become deteriorated. This indicate that banks asset becomes more tied up on long term asset instead of liquid assets and this poses a challenge for banks encountering liquidity risk in their day to day operations.

The liquidity risk management practices of private commercial banks assessed against the Basel principles in order to check whether the private commercial banks manage liquidity risk as per this best practices or not.

The findings of the study in terms of governance in liquidity risk managements indicate that all of the private commercial banks have liquidity risk management policy and procedure which is approved by the Board of Directors of each bank. All bank's board of directors also review and approve the strategies, policies and practices related to the management of liquidity risk at least annually and they ensure that senior management manages liquidity risk effectively.

Consistent with the above findings, more than 80% of the respondents indicated that their banks have liquidity risk tolerance that is appropriate for its business and the senior management continuously review information on the bank's liquidity risk practice and report to the board of directors on a regular basis.

In terms of Measurement and Management of liquidity Risk, all of the private banks are identify, measure, monitor and control their liquidity risk while most of them were not actively monitor and control their liquidity risk exposures and funding needs within and across legal entities, business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity. Moreover, they have not established funding strategy that provides effective diversification in the sources and tenor of funding.

The study is also indicated that most of the banks have not conducted regular liquidity risk stress testes which considering a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) which might significant to identify the sources of potential liquidity risk damage. In addition, most of the respondents confirmed that they have no formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations.

Regarding Public Disclosure, the study indicates that most of the banks are not disclosed the required information on their liquidity risk management framework and liquidity exposure on regular basis to the public. Even though some of the respondents confirmed that they disclosed information about their liquidity risk management framework, most of them disclosed to central banks instead of market participants as per the Basel principle.

The findings on Role of Supervisors indicates that National Bank of Ethiopia performs a comprehensive assessment on the bank's overall liquidity risk management framework and liquidity position on a regular basis. However, most of the respondents perceived that the existing supervisory intervention of NBE is only considered for satisfactory level and it's not as such adequate to assess the banks' liquidity in terms of stress testing and contingency planning, as both are crucial elements of liquidity risk management.

The commercial banks face different challenges to manage liquidity risk. The main challenge of the private banks faced as per this study is NBE bill purchase policy imposed on private commercial banks. The current NBE policies obliged all private banks to purchase 27% of Birr 1 loan for each gross loan disbursement. This policy seriously affected the liquidity position of all private banks and on average, each bank invested Birr 5,537 million throughout the five years in NBE bill purchase instead of granting additional loan to its respective borrowers which has a great impact on the liquidity position of each private bank. Nonetheless it does not mean that other liquidity risk management challenges are not much important to the private banks.

## **4.2 Recommendations**

The liquidity risk management practice of private commercial banks in Ethiopia is somewhat partially fulfilled comparing against best principles of Basel. There are no standardized and centralized liquidity risk management practices which can able to address the basic principles for managing liquidity risk. Each bank follows its own mechanism to run its operations and manage liquidity risk.

Therefore, banks should improve or upgrade their liquidity risk management system including proper liquidity risk management structure, actively monitor liquidity risk exposure, develop liquidity contingency plan, and conduct stress testing by benchmarking international best practices so as to make they ready for the future liquidity shortage. Establishing funding strategy and diversification of the uses and sources of funds is also an important issue in the banking industry. The NBE should also revise its liquidity risk management parameters and introduce modern day supervisory tools such as risk-based supervisory approach so as to help private banks getting in a stress situation. Regarding Public disclosure, the study indicates that most of the banks are not disclosed the required information on their liquidity risk management framework and liquidity exposure on regular basis to the public participants. Therefore, banks should publicly disclose information on a regular basis that enables relevant stakeholders to make an informed judgment about the ability of the bank to meet its liquidity needs in order to keep the public trust.

The findings on Role of Supervisors indicates that National Bank of Ethiopia performs a comprehensive assessment on the bank's overall liquidity risk management framework and liquidity position on a regular basis. However, the NBE supervision role should be improved in crucial elements of liquidity risk management such as obliged banks to conduct liquidity stress test scenarios and developing Contingency funding plan (CFP).

Generally we can conclude that concepts of financial management and familiarity of best practices are partially working in private commercial banks. So bank officials should open their mind and give due consideration towards the understanding of banking business as the business is vulnerable to liquidity risk.

The main challenges most of the private banks faced as per this study are NBE bill purchase policy imposed on private commercial banks, financial innovation and global market development and the increasing real time nature of payment and settlement system. These challenges should be properly analyzed by the National Bank of Ethiopia and appropriate preventative measure should be taken before aggravating the liquidity risk faces by private banks.

In the analysis of liquidity exposure of banks using liquid asset to net deposit, loan to deposit and liquid asset to total asset ratios shows that all private commercial banks liquidity position has been deteriorated from year to year. Therefore, banks should diversify their source of fund in terms of deposit schemes and customer base and they have also actively monitored their intraday liquidity position in order to meet their business objectives. Moreover, NBE should be actively monitoring the existing liquidity risk problems by reviewing its policies and conducting close follow up.

## References

- Abang-Anoh, C.A.(2012).The Impact of Liquidity on The Performance of Commercial Bank in Nigeria Plc.(A Case Study of First Bank of Nigeria).Caritas University.
- Addison, Tony & Geda, Alemayehu, 2001.Ethiopia's New Financial Sector and Its Regulation.
- Adolphus J, PhD. Journal of Financial Management & Analysis; Mumbai 21.1 (Jan-Jun 2008): 32-46.
- African Development Bank Group, 2014 Annual report.
- American Academy of Actuaries, the Life Liquidity Risk Working Group of the NAIC, September, 2000.
- Annual Reports of DB, UB, LIB, BIB, AB and AIB (2012-2016).
- Bank for International Settlement (2008): Liquidity Risk Management and Supervisory Challenges: Basel Committee on Banking Supervision.
- Bank for International Settlement (2008): Principles for Sound Liquidity Risk Management and Supervision: Basel Committee on Banking Supervision.
- Barth, R, Nolle, E, Phumiwasana, T and Yago, G 2003, „A cross-country analysis of the bank supervisory framework and bank performance“, Financial Markets, Institutions & Instruments, Vol. 12, pp.67-120.
- Basel Committee on Banking Supervision 2006, The Management of liquidity risk in financial groups, Bank for International Settlement.
- Berger Allen N. and Bouman Christa H.S. (2006), the Measurement of Bank Liquidity Creation and the Effect of Capital.
- Berger, AN 1995,The relationship between capital and earnings in banking“, Journal of Money, Credit and Banking, Vol. 27, No.2, pp.432-456.
- Berger, AN and Bouwman, C 2009,Bank liquidity creation“, Review of Financial Studies, Vol. 22, No.9, pp.3779-3837.
- Bhole L. M. and Jitendra M. (2009), Financial Institutions and Markets. (5th Edition). New Delhi India: Mc Graw-Hill, International Edition.
- Bourke, P 1989, „Concentration and other determinants of bank profitability: in Europe, North America and Australia“, Journal of Banking and Finance, Vol. 13, pp. 65-79.
- Bryant, J 1980, “A model of reserves, bank runs, and deposit insurance“, Journal of Banking and Finance, Vol. 4, pp. 335-344.

- Chen, B, Cheng, X and Wu, L 2005, “Dynamic interactions between interest rate, credit, and liquidity risks: Theory and evidence from the term structure of credit default swap spreads”, Working Paper Series.
- Demirgüç-Kunt, A and Huizinga, H 1999, ‘Determinants of commercial bank Interest margins and profitability: Some international evidence’, World Bank Economic Review, Vol. 13, pp.379-408.
- Directives of the National Bank of Ethiopia.
- Diamond, D W 1984, Financial intermediation and delegated monitoring, Review of Economic Studies, Vol. 51, pp.393-414.
- Diamond, D W and Rajan, R G 2001, “Liquidity risk, liquidity creation, and financial fragility: a theory of banking”, Journal of Political Economy, Vol. 109, No. 2, pp.287-327.
- Diamond, D W and Dybvig, P H 1983, “Bank runs, deposit insurance, and liquidity”, Journal of Political Economy, Vol. 105, No. 91, pp. 401-419.
- Diamond, D W. and Rajan, R G 2005, “Liquidity shortages and banking crises”, Journal of Finance, Vol. 60, No. 2, pp.615-647.
- Dokulilova L, Janda K., Zetek P. (2009) Sustainability of microfinance institutions in financial crisis. MPRA paper No.17696. Charles University in Prague
- Drehman, M and Nikolau, K (2009): “Funding liquidity risk: definitions and measurement” ECB working paper, No. 1024
- Brunnermeier .M.K. (2009): Deciphering the Liquidity and Credit Crunch 2007-2008: Journal of economic perspectives .Vol. 23 No. 1 pp. 77-100
- Eugene F. B. and Daves P. R. (2004), Intermediate Financial Management. New Jersey: Prentice Hall.
- Fiedler, R. (2000) Liquidity Risk. The Professional Handbook of Financial Risk Management. Fourtune Vol 16, No 820 Jan 18, 2016.
- Friedman, M and Schwarz, A 1963, Monetary history of the United States, Princeton University Press: Princeton.
- G luekett (1980) Approaches to bank liquidity management.
- Gorton, G and Winton, A 2000, „Liquidity provision, bank capital, and the macro economy”, University of Minnesota, Working Paper.
- Hassan, M.K. (2009), “Risk Management Practices of Islamic Banks of Brunei Darussalam”, The Journal of Risk Finance, Vol. 10, No.1, pp. 23-37.
- Howells, Peter and Bain, Keith. (1999), “The Economics of Money”, Banking and Finance, a European Text. Pearson Education Limited;

- Ismail, R. (2010). Assessment of Liquidity Risk Management in Islamic Banking Industry. *International Journal of Islamic and Middle Eastern Finance (Emerald series Journal)*, Vol. 3, No. 2, 2010, p147-15
- Kashyap, A K, Rajan, R G and Stein, J K 2002, “Banks as liquidity providers: an explanation for the coexistence of lending and deposit taking”, *Journal of Finance*, Vol. 58, No. 1, pp.33-73.
- Koizol, C. and Lawrenz, J. (2008), “What makes a Bank Risky? Insights from the Optimal Capital Structure of Banks”, *Journal of Banking and Finance*, 33, pp. 861-873.
- Kosmidou, K, Tanna, S and Pasiouras, F 2005, ‘Determinants of Profitability of Domestic UK Commercial Banks: Panel Evidence from the Period 1995-200’, *Money Macro and Finance (MMF) Research Group Conference*.
- Kothari, C. (2004). *Research Methodology, Methods and Techniques (Edition, Second Revised)*. University of Rajasthan.
- Mekbib Shumet Yimer(2016), *Determinants of Liquidity in Commercial Banks of Ethiopia*.
- Meron Teklberhan, <http://www.2merkato.com> published on Dec 12, 2016.
- Molyneux, P and Thornton, J 1992, „Determinants of European Bank Profitability: A Note“, *Journal of Banking and Finance*, Vol. 16, pp.1173-1178.
- National Bank of Ethiopia (2010): *Bank Risk Management Guidelines*.
- National Bank of Ethiopia Directives No. SBB 57, 2014
- Ngwu, T.C. (2006). *Bank Management*. Owerri: Bob Publishers.
- Niehans, J 1978, *The theory of money*, John Hopkins University Press, Baltimore.
- Nwankwo, G.O. (1991). *Bank Management, Principles and Practice*, Malthouse Press Ltd. Lagos.
- Ogol, Gorge Owino (2011), *Liquidity risk management practices in micro finance institutions in Kenya*.
- Peter Neu and Pascal Vogt (2012,“Liquidity risk Management” *Managing Liquidity in New Funding Environment*.
- Simeneh Terefe,(Dec 2013) ‘Prospects and challenges of private commercial banks in Ethiopia’.
- Sharma, et al,(2006).The impact of credit risk management on financial performance of commercial banks in Nepal, *International Journal of Arts and Commerce*
- Tihitina Ayalew (2009), *Legal Problems in Realizing Non-Performing Loans of Banks in Ethiopia*, A Thesis Submitted to School of Graduate Studies of Addis Ababa,

University in Partial Fulfillment of the Requirements for Degree of LLM in Business Law. December, 2009 Addis Ababa University, Addis Ababa

Tobin, J 1965, the theory of portfolio selection, in: The Theory of Interest Rates, MacMillan, Press London.

Tseganesh Tesfaye (2012). Determinants of Bank Liquidity and their Impact on Financial Performance Empirical Study on Commercial Banks in Ethiopia, MBA Thesis Addis Ababa University.

Rauch, C, Steffen, S, Hackethal, A and Tyrell, M 2008, „Determinants of bank liquidity creation - evidence from savings banks“, Working Paper: Gernmen.

Repullo, R 2004, “Capital requirements, market power, and risk taking in banking”, Journal of Financial Intermediation, No 13, pp.156-182.

Rychtárik, S 2009, ‘Liquidity Scenario Analysis in the Luxembourg Banking Sector’, Working Paper BCDL 41.

Vodova, P 2011, ‘Liquidity of Czech commercial banks and its determinant’, International journal of mathematical models and methods in applied science, Vol. 5, pp.1060-1067.

Seid Hussein Yimam(2005), Dashen Bank as an Information Infrastructure, First Deliverable:INF5210,

# Annexes

## Annex 1.Liquidity position of Private Commercial Banks in Ethiopia: Liquid Asset to Net Deposit Ratio (In Percentage)

Bank	Year					
	2012	2013	2014	2015	2016	Average
DB	41	38	37	28	30	35
UB	42	26	36	23	21	30
LIB	60	34	42	34	29	40
BIB	61	46	49	41	29	45
AB	60	39	34	25	23	36
AIB	75	67	54	44	49	58
Average	56	42	42	32	30	41

## Annex 2.Liquidity position of Private Commercial Banks in Ethiopia: Loan to Deposit Ratio (In Percentage)

Bank	Year					
	2012	2013	2014	2015	2016	Average
DB	57	55	53	57	55	55
UB	59	57	53	57	62	58
LIB	55	62	57	64	68	61
BIB	53	60	58	61	70	60
AB	58	57	59	64	64	60
AIB	72	58	64	69	67	66
Average	59	58	57	62	64	60

**Annex 3. Liquidity position of Private Commercial Banks in Ethiopia: Liquid  
Asset to Total Asset Ratio (In Percentage)**

<b>Bank</b>	<b>Year</b>					
	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Average</b>
DB	33	31	30	22	24	28
UB	33	21	28	19	17	24
LIB	42	24	31	26	23	29
BIB	44	34	35	30	22	33
AB	38	29	27	14	25	27
AIB	37	41	34	29	31	35
Average	37	30	30	23	23	29

## Annex 4: Questioner

### Dear Respondent:

This is an endeavor to collect information about the liquidity risk management practice and challenges of private commercial banks in Ethiopia. I intend to look into the liquidity risk management in general and our own case in particular. Such exercise is believed to have positive contribution to both academic delivery and the practical world. Hence, I kindly request you to share with me part of your valuable time by completing this questionnaire.

I would like to thank you in advance for your cooperation to fill in and complete the questionnaire.

Suraphel Awgchew, MBA Candidate (Saint Merry University)

### Section I: Respondent's Profile

Please specify your profile

Please use a thick mark () to show your choice (response)

#### 1. Sex

Male

Female

#### 2. Education/professional qualification

First degree

First degree and professional qualification such as ACCA

Second degree in finance or related field

Second degree in Non-finance field

Other advanced education or professional qualification

Other please

specify \_\_\_\_\_

3. Present career in the bank:

- Department Head or more than that  
 Managers or Division Heads  
 Senior Experts  
 Officers  
 Other, please specify \_\_\_\_\_

---

**Section II: Information about liquidity risk management Challenges**

Put thick mark () to indicate your answer (put more than once if necessary)

1. What are the challenges your bank is facing on liquidity risk management?

- NBE bill purchase or limitation on NBE policies  
 Future Cash Flow Requirement Projection  
 Ability to draw information from various operations of the bank  
 Financial innovation and global market development  
 The increasingly real- time nature of payment and settlement systems  
 The change in assumptions due to counterparty behavior and market conditions change  
 The increasing interdependence among different systems

***Section III: Information about liquidity risk management Practices***

Put thick mark () to indicate your answer

**A. governance of liquidity risk management**

1. Does the bank have liquidity risk management policy and procedure?

- Yes  No

2. If your answer for question No.1 is yes, is the liquidity risk management policy and procedure approved by the board of directors?

- Yes  No

3. Is a bank clearly articulates a liquidity risk tolerance that is appropriate for its business strategy?

- Yes  No

3. Is senior management developing a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance?

- Yes | No

- 
4. Is senior management continuously reviewing information on the bank's liquidity developments and report to the board of directors on a regular basis?

Yes  No

**B. measurement and management of liquidity risk**

1. Is a bank identifying, measuring, monitoring and controlling liquidity risk?

Yes  No

2. Does the bank actively monitor and control liquidity risk exposures and funding needs within and across legal entities, business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity?

Yes  No

3. Does the bank establish a funding strategy that provides effective diversification in the sources and tenor of funding?

Yes  No

4. Does the bank actively manage its intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions?

Yes  No

5. Does the bank conduct stress tests on a regular basis for a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) to identify sources of potential liquidity strain?

Yes  No

6. Does the bank has formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations?

Yes  No

7. If your answer for question No.6 is yes, Is the Contingency Funding Plan outline policies to manage a range of stress environments, establish clear lines of responsibility, and regularly tested and updated to ensure that it is operationally robust?

Yes  No

8. Does the bank conduct stress tests on a regular basis for a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) to identify sources of potential liquidity strain?

Yes | No

**C. Public disclosure**

1. Does the bank publicly disclose information on a regular basis about the soundness of its liquidity risk management framework and liquidity position?

Yes

No

2. If your answer for question No.1 is yes, to whom the information is disclosed?

NBE

Public

Other Please specify\_\_\_\_\_

**D. Role of supervisor**

1. Does NBE regularly perform a comprehensive assessment on the bank overall liquidity risk management framework and liquidity position?

Yes

No

2. How do you perceive the intervention of NBE?

Satisfactory

Good

Very Good

Thank You