



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**LIQUIDITY RISK MANAGEMENT IN
COMMERCIAL BANK OF ETHIOPIA:
PRACTICES AND CHALLENGES**

By
SIMENEH ZEWDU
(SGS1/0084/2004)

NOVEMBER, 2013
ADDIS ABABA, ETHIOPIA

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL
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APPROVED BY BOARD OF EXAMINERS

Dean, Graduate Studies

Signature & Date

Elias Nour (PhD)
Advisor

Signature & Date

Getachew Teka (PhD)
External Examiner

Signature & Date

Bekabil Fufa (PhD)
Internal Examiner

Signature & Date

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List of Abbreviations and Acronyms

ALCO:	Asset and Liability Committee
CBE:	Commercial Bank of Ethiopia
CFP:	Contingency Funding Plan
GTP:	Growth and Transformation Plan (Ethiopia)
MBA:	Master of Business administration
MIS:	Management Information Services
NBE:	National Bank of Ethiopia
STD:	Standard Deviation

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ABSTRACT

Liquidity risk is a major type of risk that could easily bring an institution to its destruction especially in the banking industry. It thus needs to be closely monitored and mitigated. This research is conducted with the objective of finding how risk management, specifically liquidity risk management is undertaken in commercial bank of Ethiopia. It pays a special attention to the processes of risk identification, risk analysis and monitoring. In doing so, the bank's (adherence) to the principles of sound liquidity management recommended by the Basel committee for banking supervision was tested. The study used exploratory and quantitative data analysis after collecting data from primary and secondary sources, mainly through questionnaires. The questionnaires were distributed to a selected group of employees who are directly related to risk management or fund management. The results then are interpreted to have an understanding of the position where the bank is standing in comparison with international standards in liquidity risk management.

Key Words: Risk, Liquidity, Bank Risk, Liquidity Risk Management

CHAPTER ONE

INTRODUCTION

1.1 Background

Financial institutions deal with transactions that carry with them a great deal of risks. Unlike other kinds of business organizations the risk associated with the activities of financial institutions is significant and it is observable at the time of the transaction. These financial institutions know what they are getting into when they are making decisions- in most cases at least. They know there is a certain degree of risk attached to the business but they are taking chances as it is the core business principle of the industry.

But in the process of taking risks lies a great tool that protects even benefits these institutions, which is “risk management.” Without the process of risk analysis and interpretation these institutions are doomed to fail with a high degree of probability. But the process of risk management protects them from engaging in bad business deals and at the same time highlights lucrative business ventures whose expected returns are far greater than the expected loss associated, that they could get an advantage of.

“Risk to a banker means the perceived uncertainty connected with some event related to the banking business. For example: will borrowers default on loans; will new business fall; will the price of assets in an investment portfolio fall; will the bank suffer losses from a change in long-term interest rates; is lending profitable?” (Allan et al, 1998: PP 708-709)

Liquidity risk is one of the most serious types of risks that can be encountered. It is the risk that may occur if a bank cannot meet a demand for cash or fund its obligations because of its inability to liquidate assets or raise funds in a timely manner at a reasonable price. (Aaron, Armstrong, & Zelmer, 2007) This research examines the practices of the Commercial Bank of Ethiopia in managing liquidity risk and highlights what the challenges thereof.

1.2 Statement of the Problem

Risk management is an everyday phenomenon in our lives. We deal with various kinds of risks at home, in the office, on the streets we walk down and so on. Risk is part of our lives and we

cannot avoid it rather we manage it. We analyze the various risks we come across and make informed decisions and judgments on how to deal with them. For example when we cross the street on our way to work there is a risk of getting hit by a passing car, God forbid, but we acknowledge the existence of that risk and make analysis of the situation by observing the number of cars on the street, the speed at which they are traveling, and the possibility of them being able to make an emergency stop and so on. Based on these information mentally processed, we make a decision of crossing the street or not, if so when to cross it. This is the process of risk management; by using it we reduce the probability of risk and increase the probability of success.

If in the above example, we fail to undertake the risk management process, we would jump into an oncoming traffic without checking whether there is a risk of danger leading to a high possibility of getting into an accident which could have been avoided by waiting a few more seconds for the cars to pass.

The same is true for businesses and organizations in their day to day operations. They too are faced with numerous and varying risks which they need to deal with in order to survive in the business they are in. They need to lay out risk identification and monitoring systems so as to be able to minimize and manage those risks. Otherwise it would be the same fatal mistake as a pedestrian jumping in to an oncoming traffic.

Coming to liquidity risk in particular we have seen many banks, most of the big ones, fall into their doom because of liquidity risks. Liquidity risk if not checked and managed well brings huge losses and may lead to a bank's bankruptcy and liquidation. The Commercial Bank of Ethiopia is no exception to such risks. In fact, if Commercial Bank of Ethiopia falls victim of this risk the consequences would not be limited to it. Owing to its position as the largest bank in the country and a big financial power house in the economy any kind of shock in its operations would translate into a shock in the industry, even in the whole economy.

Therefore this calls for an active risk monitoring mechanisms and risk management techniques to be installed, in order to assure a sound liquidity risk management.

1.3 Basic Research Questions

- What risk identification mechanisms are laid out within the bank?
- What risk assessment criteria are being used in CBE?
- What liquidity risk mitigation techniques are being practiced?
- What are the major challenges faced by CBE in managing liquidity risk?
- To what degree is CBE complying with the Basel principles in managing Liquidity?

1.4 Objectives of the Study

The general objective of this study is to shed light on practices and challenges of liquidity risk management in Commercial Bank of Ethiopia and check whether these practices are aligned with international standards. In addition, this research intends to find out whether there is a present or near future threat of liquidity risk facing CBE and checking if the current practices are sufficient enough to manage and mitigate the risk it faces. Finally, recommendations shall be provided on what should be kept up as being best practices and what should be improved or changed so that the risks faced can be managed better.

The specific objectives of this paper are:

- To identify and check the practicality of the basic risk identification techniques employed by CBE.
- To investigate what procedures are being used to manage liquidity risk in the bank.
- To assess the level of risk appetite in a nutshell.
- To understand how much due attention is given to liquidity risk management at the CBE.
- To assess what mitigation techniques are laid out in order to avoid or minimize the occurrence /effect of liquidity risks.
- To investigate the challenges faced in the process of liquidity risk management and what action is being taken to reduce or alleviate those challenges.

1.5 Hypotheses

H1. Liquidity risk is growing in CBE over the past years.

H2. There is a danger of facing a liquidity crisis in CBE in the near future under current state of variables.

H3. If faced with liquidity crunch, CBE can recover very quickly and restore normal business activity.

H4. CBE's liquidity management practices sufficiently comply with Basel's principles for sound liquidity management.

1.6 Significance of the Study

This study is meant to provide an insight in to the practices and challenges of liquidity risk management in the Commercial Bank of Ethiopia. It shows the importance of risk management and the need to recognize risks and be prepared to foresee them. Although it deals with the Commercial Bank of Ethiopia its thematic relevance extends to all banks. In this regard, the findings and conclusions of this paper would allow the bank to consider its strong and weak points while it addresses liquidity risk management. It would also indicate the appropriateness of the procedures and principles of risk management being followed and practiced currently. I hope this would also serve as an additional reference on the topic not just on theoretical level but on a practical level.

1.7 Scope of the Study

Although the topic of risk management is broad and vast in its types, methodologies and applications, the scope of this paper is limited to the implications of this issue in the context of the Commercial Bank of Ethiopia and more specifically to liquidity risk. This does not, in any way, mean that risk management is not practiced in other commercial banks or even other non financial organizations. This paper just tries to showcase the practices from a practical and economical point of view by singling out an organization. Nor does this paper indulge in using the liquidity risk measurement tools and provide figures of the level of liquidity risk that the bank has.

1.8 Organization of the Research

Chapter one of this paper is an introduction to the whole research which states the problem statement, objectives of the research, the methodologies used, and limitations of the study. Chapter two covers review of the related literature and it highlights the theoretical foundation for the study. The third chapter presents the research design and methodology applied in the research, the types of data collected, the methods of data collection and the source of data are

discussed. In the fourth chapter data collected are analyzed and the findings of the research are discussed and interpreted in a way that it would make a sense of the data analysis results. The fifth and the last chapter presents the summary, conclusion and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews the literature related with the topic of risk management with specific attention to banking. Further, various concepts in related with risk and risk management have been defined. At first this section starts with a definition of the broader concept of risk and the common misunderstandings of the concept. Next, categories of risks pertaining to banking are described, defined and elaborated independently with a special emphasis on liquidity risk. Finally, the mechanisms for risk management and the mitigation techniques are explained as it appears in various literatures.

2.1 Definitions of Terms

Probability: "...is quantifiable likelihood (chance) of the occurrence of an event expressed as odds, or a fraction of one." (WebFinance, Inc., 2013)

Uncertainty: "...is a state of knowledge in which one or more alternatives result in a set of possible specific outcomes, but where the probabilities of the outcomes are neither known nor meaningful." (all business.com)

Risk: "...is a probability or threat of damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action." (WebFinance, Inc., 2013)

Risk management: "...is a systematic process for the identification and evaluation of pure loss exposure faced by an organization or an individual, and for the selection and implementation of the most appropriate techniques for treating such exposure." (Rejda, 1998:p27)

Liquidity: Liquidity is the ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. (Greuning & Bratanovic, 2009: p192)

Liquidity risk: Liquidity risk is the risk that a bank cannot meet a demand for cash or fund its obligations because of its inability to liquidate assets or raise funds in a timely manner at a reasonable price. (Aaron, Armstrong, & Zelmer, 2007: p44)

Bank-run: A run on a bank occurs when a large number of depositors, fearing that their bank will be unable to repay their deposits in full and on time, simultaneously try to withdraw their funds immediately. (Kaufman, 2008)

2.2 Defining Risk

Before getting into the subject of risk management we need to first define what risk means and illustrate the types of risks that are recognized by the scholars of the subject. In reviewing the subject matter of risk management the concept of corporate governance and the principles that lie behind it will be discussed. But first what is “risk”?

“The etymology of the word “Risk” can be traced to the Latin word “Rescum” meaning Risk at Sea or that which cuts. Risk is associated with uncertainty and reflected by way of charge on the fundamental/ basic i.e. in the case of business it is the Capital, which is the cushion that protects the liability holders of an institution.” (Raghavan, 2003: P 841) From this we can imply that “risk” is intended to show the likelihood of occurrence of a negative situation that we do not wish to see realized.

Risk is the potential that a chosen action or activity will lead to a loss (undesirable outcome). All businesses face the threat of risk in their investment as it- the investment- is dependent on the returns to be had in the future, which is uncertain as to what could happen, thus rendering itself to risk. Mostly, risk and uncertainty are confused and used interchangeably which is wrong as the two are different. This leads us to clearly define the similarity and difference between the two.

On the other hand, risk to a banker means the perceived uncertainty connected with some event related to the banking business. For example: will borrowers default on loans; will new business fall; will the price of assets in an investment portfolio fall; will the bank suffer losses from a change in long-term interest rates; is lending profitable? (Allan *et al*, 1998)

2.3 Risk and Uncertainty

Uncertainty is the situation where it is not clearly known whether a certain event is going to happen or not. In addition to that we can not quantify the probability of that event occurring in the case of uncertainty. On the other hand, when we refer to risk, unlike uncertainty we can

quantify the probability of the occurrence of that specific event. When one is taking risk they know there is a chance of failure or a bad outcome as a result of their actions or at the same time there is a chance of high return (in most cases) and they know the extent to which these two alternatives can occur. Based on this you can make decisions on risks depending on your risk attitude, while on the case of uncertain situations, you cannot make decisions based on uncertainty since there is no visible or quantifiable evidence that would tell you to what extent the event is likely to occur, simply put, you do not know if it's going to happen at all, period.

2.4 Classifications of Risks

Although there are many kinds of risks that could face an organization, the following are the major types faced by banks that this paper discusses.

- Market risk
- Credit risk
- Liquidity risk
- Operational risk
- Legal and regulatory risk
- Business risk
- Strategic risk
- Reputation risk

2.4.1 Market risk

According to Basel Committee on Banking Supervision's (2009) definition Market risk refers to the risk to an institution resulting from movements in market prices, in particular, changes in interest rates, foreign exchange rates, and equity and commodity prices.

“Market risk is the risk that changes in financial market prices and rates will reduce the value of a portfolio. Price risk for fixed income products can be decomposed into a general market-risk component (the risk that the market as a whole will fall in value) and a specific market-risk component, unique to the particular financial transaction under consideration, that also reflects the credit risk hidden in the instrument.” (Crouhy, Galai, & Mark, 2006: p27)

Bessis (2010) argues that the major drivers of market risk are market value deviations and market parameters since market risk arises from the potential downside deviation of the market value of transactions and of the trading portfolio during the liquidation period. Greuning and Bratanovic (2009) put forth four fundamental markets that these risk drivers take effect. These are; interest-sensitive debt securities market, equities market, currencies market, and commodities market.

Based on the above, we can distinguish between four types of market risks; interest rate risk, equity price risk, foreign exchange risk, and commodity price risk.

Interest rate risk

In Menako (2010), interest rate risk is defined as the potential for changes in interest rates to reduce a bank's earnings or value. It is further explained that most of the loans and receivables of the balance sheet of banks and term or saving deposits, generate revenues and costs that are driven by interest rates and since interest rates are unstable, so are such earnings. A better explanation is given by Resti and Sironi (2007) as banks' primary function is to transform maturities, they finance their investments in loans or bonds by issuing liabilities whose average maturity is shorter than that of those same investments. They state that the resulting imbalance between maturities of assets and liabilities implies interest rate risk-taking by the banks.

Interest rates affect the values of assets in the future and in the present. Many business transactions are undertaken taking in to consideration interest rates. Interest rates denote the prices of capital and thus a change in the interest rate changes the return of the investment. Investors invest taking in to account the future interest rate, which is subject to change – implying risk. For example banks lend money at a price higher than the interest rate for deposits. If in the future the interest rate for deposits increases above the rate the banks have lent the money they will be at loss because they are paying more for the money they are lending than they are getting from it.

Anyone who borrows or lends is exposed to interest rate risk. According to Bessis' (2010) explanation, a lender earning a variable rate has the risk of seeing revenues reduced by a decline in interest rates and a borrower paying a variable rate bears higher costs when interest rates increase. Both positions are risky since they generate revenues or costs indexed to market rates.

Though interest rate risk is obvious for borrowers and lenders with variable rates, those engaged in fixed rate transactions are not exempt from interest rate risks because of the opportunity cost that arises from market movements (Ibid,2010). This is explained as the gain that the fixed rate depositors are losing because of an increase in the interest rates that they cannot capitalize on. This also works vice versa when the banks holding a fixed interest rate deposit and the interest rate declines in which they could have lowered their expenses had it been a variable interest rate deposit. The same is also true for fixed rate loans for both the debtor and the creditor.

Equity Price Risk

This is the risk associated with volatility in stock prices. The general market risk of equity refers to the sensitivity of an instrument or portfolio value to a change in the level of broad stock market indices. The specific risk of equity refers to that portion of a stock's price volatility that is determined by characteristics specific to the firm, such as its line of business, the quality of its management, or a breakdown in its production process. (Crouhy, Galai, & Mark, 2006)

This kind of risk is uncommon in our country since there is no dedicated equity market which would make it difficult to find out the market prices for stocks and equities. For this reason, most banks refrain from indulging in the equity market and from holding assets in the equity form.

Foreign Exchange Risk

Foreign exchange risk is a risk that arises due to fluctuations in the exchange rates between currencies with which a bank holds assets. Bessis(2010) says the conversion risk arises from the need to convert all foreign currency-denominated transactions in to a base reference currency.

“Currency risk results from changes in exchange rates between a bank's domestic currency and other currencies. It originates from a mismatch when assets and liabilities are valued in different currencies. That mismatch may cause a bank to experience losses as a result of adverse exchange rate movements when the bank has an open on- or off-balance-sheet position, either spot or forward, in an individual foreign currency.” (Greuning & Bratanovic, 2009: p255)

Crouhy, Galai & Mark (2006) assert the major drivers of foreign exchange risk to be imperfect correlations in the movement of currency prices and fluctuations in international interest rates. It arises from open or imperfectly hedged positions in a particular currency. These positions may

arise as a natural consequence of business operations, rather than from any conscious desire to take a trading position in a currency. Foreign exchange volatility can sweep away the return from expensive cross-border investments and at the same time place a firm at a competitive disadvantage in relation to its foreign competitors. Such loss of earnings may occur due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency. (Menako, 2010)

To this effect Crouhy, Galai & Mark conclude that foreign exchange volatility can sweep away the return from expensive cross-border investments, and at the same time place a firm at a competitive disadvantage in relation to its foreign competitors. It may also generate huge operating losses and, through the uncertainty it causes, inhibit investment.

In recent years, a market environment with freely floating exchange rates has practically become the global norm. Greuning & Bratanovic (2009) argue that this has opened the doors for speculative trading opportunities and increased currency risk. The relaxation of exchange controls and the liberalization of cross-border capital movements have fueled a tremendous growth in international financial markets. The volume and growth of global foreign exchange trading has far exceeded the growth of international and capital flows and has contributed to greater exchange rate volatility and therefore foreign exchange risk.

Short-term factors, such as expected or unexpected political events, changed expectations on the part of market participants, or speculation based currency trading may also give rise to foreign exchange changes. (Menako, 2010) All these factors can affect the supply and demand for a currency and therefore the day-to-day movements of the exchange rate in currency markets.

Commodity Price Risk

The price risk of commodities differs considerably from interest-rate and foreign exchange risk, since most commodities are traded in markets in which the concentration of supply in the hands of a few suppliers can magnify price volatility. (Crouhy, Galai, & Mark, 2006) A factor affecting a commodity's price includes the ease and cost of storage, which varies considerably across the commodity markets (e.g., from gold, to electricity, to wheat). As a result, commodity prices

generally have higher volatilities and larger price discontinuities (i.e., moments when prices leap from one level to another).

Commodity prices may be volatile as commodity markets are often less liquid than financial markets, and changes in supply and demand can have dramatic effects on prices.

According to scholars some of the factors that can affect commodity prices include political and regulatory changes, seasonal variations, weather, technology and market conditions.

Producers can protect themselves from fluctuations in commodity prices, which can reduce their profit margin, by implementing financial strategies that will guarantee a commodity's price.

This kind of risk has no direct impact on banks, in our case, as they are not involved in the commodity markets. But there could be an indirect effect to them through the investors they do business with who are involved in such markets. And a risk faced by such investors can translate to a risk on the banks.

2.4.2 Credit Risk

Credit risk is the risk of borrowers defaulting on their loans. This includes the failure to pay both or either of the principal or the interest of a loan disbursed by banks. A delay in repayment of loans is also considered as credit risk as it would entail a loss on the bank's side from that loan. This risk is primarily that of the lender's and include lost principal and interest, disruption to cash flows, and increased collection costs.

Credit risk can be further classified into Transaction Risk and Portfolio concentration risk. Transaction risk is a risk associated with the credit transaction while concentration risk is associated with the concentration of loans in a certain sector or area. The higher the concentration ratio the higher will be the risk attached with it.

Inherent to banking, credit risk means that payments may be delayed or not made at all, which can cause cash flow problems and affect a bank's liquidity. Despite innovation in the financial services sector, more than 70 percent of a bank's balance sheet generally relates to this aspect of risk management. For this reason, credit risk is the principal cause of bank failures. (Greuning & Bratanovic, 2009)

Resti and Sironi(2007) on the other hand, forward three concepts that constitute credit risk. The first is default and migration risk in which default risk represents the mere insolvency of the borrower, whereas migration risk refers to the risk arising from the deterioration in the borrower's credit worthiness. The second concept they put forth is a risk occurring as an unexpected event. This risk as they put it is implicit in the first one and what differentiates it from it is that this one occurs when the deterioration in the credit worthiness of the borrower is unexpected. Because, if it was expected, adjustments would have been put in place to absorb the loss in the beginning. The third concept is related to the concept of credit exposure in which what needs to be considered accruing in the loan portfolio is not just the classical form of credit but also operations such as guarantees, transactions in securities, foreign currencies and other pending settlements.

Greuning and Bratanovic (2009) state three kinds of policies related to credit risk management. The first set aims to limit or reduce credit risk, which include policies on concentration and large exposures, diversification, lending to connected parties, and overexposure. The second set aims at classifying assets by mandating periodic evaluation of the collectability of the portfolio of credit instruments. The third set of policies aims to make provision for loss or make allowances at a level adequate to absorb anticipated loss

2.4.3 Operational Risk

Operational risk arises from the potential that inadequate information systems, operational problems, breaches in internal controls, fraud, or unforeseen catastrophes will result in unexpected losses. (Board of Governors of the Federal Reserve, 2013) Although operational risk does not easily lend itself to quantitative measurement, it can result in substantial costs through error, fraud, or other performance problems. The growing dependence of banking organizations on information technology emphasizes one aspect of the need to identify and control this risk.

In Crouhy, Galai and Mark(2006) operational risk is defined as a risk incurred by an organization's internal activities. It refers to potential losses resulting from inadequate systems, management failure, faulty controls, fraud, and human error. From this we can identify four causes/ types of operational risk: people, systems, processes and external events. A risk from people refers to losses coming from human errors, frauds, violations of internal rules and processes, and the like. (Resti & Sironi, 2007)

On the other hand, systems risk refers to the risks caused by information systems and technology such as hardware and/or software failures, computer hacking or viruses, and telecommunications failures. The processes factor includes the losses that originate from inadequacies in the internal processes and procedures. The fourth factor is a culmination of all other sources of risk that could cause operational risk and are not explained by the first three.

Managing operational risk presents some unique challenges to banks. As operational risk events are largely internal to institutions, the causes or risk factors may not be universally applicable. Moreover, the magnitude of potential losses from specific risk factors is often not easy to project. (Greuning & Bratanovic, 2009) Very large operational losses have been considered to be rare or isolated occurrences, which causes the perception that it is difficult to get management to focus on the often routine work required to design an effective mechanism for systematic reporting of trends in a bank's operational risks.

Developments in modern banking environment, such as increased reliance on sophisticated technology, expanding retail operations, growing e-commerce, outsourcing of functions and activities, and greater use of structured finance (derivative) techniques that claim to reduce credit and market risk have contributed to higher levels of operational risk in banks (Ibid,2009)

The process for managing operational risk involves at first, classification of loss events that should serve as a receptacle for data gathering process on event frequency and costs. Next, the data gathered based on the framework established will be analyzed with various statistical techniques which will help in finding the links between various operational risks. The end result will be an estimation of a worst case scenario for losses due to events risks. This will enable the right capital charges to be made for operational risk as required by current regulations. (Bessis, Risk Management in Banking, 2002)

2.4.4 Legal and Regulatory Risk

When owned funds alone are managed by an entity, it is natural that very few regulators operate and supervise them. However, as banks accept deposit from public obviously better governance is expected of them. This entails multiplicity of regulatory controls. Many Banks, having already gone for public issue, have a greater responsibility and accountability. As banks deal with public funds and money, they are subject to various regulations. (Raghavan, 2003)

Legal and regulatory risk arises from failing to meet with regulation and laws of the land such that the failure would result on to a penalty that would be enforced by the law. The loss may not always come in the form of a penalty all the times but instead comes as a big loss on the company from enforcing new regulations that have not been foreseen by the party affected. This is basically what is meant by legal and regulatory risk.

Legal risk, as defined by the Federal Reserve (US), is a risk arising from the potential that unenforceable contracts, lawsuits, or adverse judgments can disrupt or otherwise negatively affect the operations or condition of a banking organization.

2.4.5 Business Risk

Business risk refers to the classic risks of the world of business, such as uncertainty about the demand for products, the price that can be charged for those products, or the cost of producing and delivering products. It is the possibility that a company will have lower than anticipated profits, or that it will experience a loss rather than a profit. Business risk is influenced by numerous factors, including sales volume, unit-price, input costs, competition, overall economic climate and government regulations.

Business risks can be either internal or external to the business entity. They can also directly or indirectly affect a business's ability to operate. These risks can be hazard-based (e.g. chemical spills), uncertainty-based (e.g. natural disasters) or associated with opportunities (e.g. taking them up or ignoring them).

2.4.6 Strategic Risk

Strategic risk refers to the risk of significant investments for which there is a high uncertainty about success and profitability. If the venture is not successful, then the firm will usually suffer a major write-off, and its reputation among investors will be damaged. It is the current and prospective impact on earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. This risk is a function of the compatibility of an organization's strategic goals, the business strategies developed to achieve those goals, the resources deployed against these goals, and the quality of implementation.

Strategic risk encompasses a variety of uncertainties which are not financial in nature, but rather credit or operational related caused by macro-economic factors, industry trends or lapses in a firm's strategic choices which affects the firm's earnings and shareholders' value adversely. Strategic risks often constitute some of a firm's biggest exposures and therefore can be a more serious cause of value destruction. (Menako, 2010)

Building a rigorous strategic risk management framework requires an institution to re-examine both its internal practices and its external environment, and to understand how closely the two are connected. In other words, external factors have an impact on internal practices, but those internal practices, due to the interconnectivity of financial markets can in turn have an impact on how the institution is viewed externally--and even have an impact on the marketplace in general.(Ibid,2010)

2.4.7 Reputation Risk

Reputation risk refers to the loss of confidence on a company because of a bad practice or a mishap of some sort that would erode the trust customers and stake holders have on that company. The Federal Reserve (US) describes a reputational risk as the potential that negative publicity regarding an institution's business practices, whether true or not, will cause a decline in the customer base, costly litigation, or revenue reductions. This would significantly kill the business as it would lose its entire customer base and would lead to bankruptcy.

2.4.8 Liquidity Risk

Kumar and Yadav (2013) define liquidity as a banks capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. Greuning and Bratanovic (2009) further state that a bank would be considered to have adequate liquidity when it can obtain needed funds (by increasing liabilities, securitizing, or selling assets) promptly and at a reasonable cost.

The fundamental role of banks in the maturity transformation of short term deposits into long term loans makes banks inherently vulnerable to liquidity risk, both of an institution-specific nature and that which affects markets as a whole.

Liquidity risk is the risk to an institution's financial condition or safety and soundness arising from its inability (whether real or perceived) TO meet its contractual obligations. The primary

role of liquidity risk management is to prospectively assess the need for funds to meet obligations; and to ensure the availability of cash or collateral to fulfill those needs at the appropriate time by coordinating the various sources of funds available to the institution under normal and stressed conditions. (Board of Governors of the Federal Reserve, 2013)

Liquidity risk might become a major risk for the banking portfolio. (Bessis, Risk Management in Banking, 2002) Many scholars and regulatory institutions agree that extreme lack of liquidity results in bankruptcy, making liquidity risk a fatal risk. Although most of the time liquidity risk is triggered by other risks in which a sign of weakness by a bank due to other risks leads to depositors flooding in to have their money back and creditors refrain from extending more credit lines ultimately leading to a collapse.

Liquidity risk comprises both funding liquidity risk and asset liquidity risk, though these two dimensions of liquidity risk are closely related. Funding liquidity risk relates to a firm's ability to raise the necessary cash to roll over its debt; to meet the cash, margin, and collateral requirements of counterparties; and (in the case of funds) to satisfy capital withdrawals. Asset liquidity risk, often simply called liquidity risk, is the risk that an institution will not be able to execute a transaction at the prevailing market price because there is, temporarily, no appetite for the deal on the other side of the market.

Claire, Murray and Rosenthal (2000) determined four Sources of liquidity risk

- A credit rating downgrade
- Negative publicity
- Deterioration of the economy
- Reports of problems in other banks

These are the major sources of liquidity risk but not the only ones. Most occurrences of liquidity risk are a result of one or a combination of the above phenomena.

A credit rating downgrade results in loss of confidence from creditors on that bank to be able to give credits. Since the risk of default increases as the credit worthiness of a bank diminishes, the bank would face a shortage of liquidity to cover its liabilities.

A negative publicity, on the other hand, whether justified or unjustified, results in loss of confidence on the bank from both the creditors' side and the depositors' side. This phenomenon

leads to a simultaneous effect of depositors demanding their money back and creditors cutting off their credit line.

Deterioration in an economy or a slowdown brings about a pressure on all economic agents in a way that banks can not raise enough money to stay afloat as most of the liquidity sources would be unable/ less able to provide them. And the effects of reports of problems in other banks reflect on the bank as stakeholders assume the same problems would soon catch up with them and thus lose confidence and act in a way that would cause liquidity shortages.

2.5 Risk Management in Banking

Redja (1998) defines risk management as a systematic process for the identification and evaluation of pure loss exposure faced by an organization or an individual, and for the selection and implementation of the most appropriate techniques for treating such exposure.

Risk Management can be defined as “a group of actions that are integrated within the wider context of a company organization, which are directed toward assessing and measuring possible risk situations as well as elaborating the strategies necessary for managing them”. (European Federation for Welding, Joining and Cutting (EWF), ?)

Osborne (2012) discusses some of the many benefits to managing our risks effectively, including:

- Informed decision making
- A more resilient business
- Increased likelihood of successful risk taking (capitalizing on opportunities)
- Protection of revenue, profits or market share
- Protection of reputation/goodwill
- Improved product or service quality and reliability
- Protection of valuable assets
- Increased likelihood of achieving strategic goals or objectives
- Reduced costs and/or increased profits
- Less failures and downtime
- Competitive advantage

- Fewer surprises

Having these in mind, risk management is not static or a onetime process rather it should be a continuous and developing process which runs throughout the organization's strategy and the implementation of that strategy. It should address methodically all the risks surrounding the organization's activities past, present and in particular, future. (AIRMIC, ALARM & IRM, 2002)

Obviously, Risk Management can be targeted toward all or only some of the "different types of potential risk", that is, the specific areas of possible uncertainty that affect the life of a company.

Company risks are normally classified within three large categories:

- Risks inherent to the external context (e.g.: emergence of unfavorable laws and/or regulations; negative changes to market conditions; technological innovations that favor competitors; etc.);
- Risks inherent to operative management (e.g.: non compliance with contractual requirements; possible loss of market share; possible loss of skills; possible physical damage to personnel; possible environmental pollution; etc.);
- Risks inherent to financial management (e.g.: difficulty in collecting accounts receivables; unfavorable changes in exchange rates; imbalances in liquidity; etc.).

2.5.1 The Process of Risk Management

Many scholars have depicted various kinds of steps in the process of risk management. Though these classifications are different in steps, essentially they are the same in their essence. Some scholars say the process has three steps: identification, assessment, and prioritization of risks, as in the definition below:

“[Risk management] is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor and control the probability and/or impact of unfortunate events.”
(Hubbard, 2009:p10)

As this definition clearly explains risk management is primarily the identification of risks. Before being able to manage the risks we need to first identify what risks are facing us. Without

knowing what risks there are we cannot perform any kind of risk mitigation. Simply put, we cannot manage a risk we do not know exists.

Secondly, after identification of all the risks we are faced with, the next step would be analysis of those risks to determine the type and magnitude of their impacts. This is important for preparing the right kind of policy or solution in order to face and manage those risks.

A third component of risk management is the prioritization of those risks we have identified and analyzed based on their severity. This gives an advantage so as to be able to tackle the most risky situations first and not be distracted by the smallest of risks while the most severe ones are not being monitored and managed.

While the above definition describes the core process of a risk management, it is no limited to those activities only as the following diagram shows it is a bit more elaborate and contains other processes also. Let's consider another broader perspective showing the different processes involved in risk management by considering the following diagram.

Figure 1: A Detailed Process of Risk Management

Source: AIRMIC, ALARM & IRM (2002)

Risk management protects and adds value to the organization and its stakeholders through supporting the organization's objectives by providing a framework for an organization that enables future activity to take place in a consistent and controlled manner providing a framework for an organization that enables future activity to take place in a consistent and controlled manner. (AIRMIC, ALARM & IRM, 2002)

Risk Identification

Risk identification sets out to identify an organization's exposure to uncertainty. This requires an intimate knowledge of the organization, the market in which it operates, the legal, social, political and cultural environment in which it exists, as well as the development of a sound

understanding of its strategic and operational objectives, including factors critical to its success and the threats and opportunities related to the achievement of these objectives.

Risk identification should be approached in a methodical way to ensure that all significant activities within the organization have been identified and all the risks flowing from these activities defined. All associated volatility related to these activities should be identified and categorized.

Risk Description

The objective of risk description is to display the identified risks in a structured format, for example, by using a table. The use of a well designed structure is necessary to ensure a comprehensive risk identification, description and assessment process. By considering the consequence and probability of each of the risks set out, it should be possible to prioritize the key risks that need to be analyzed in more detail. Identification of the risks associated with business activities and decision making may be categorized as strategic, project/ tactical, operational. It is important to incorporate risk management at the conceptual stage of projects as well as throughout the life of a specific project. (Ibid, 2002)

Risk Estimation

Risk estimation can be quantitative, semi quantitative or qualitative in terms of the probability of occurrence and the possible consequence. In this process the level of risk probability is analyzed and given a value that would describe the strength or weakness of likelihood of occurrence and strength of its effects.

Risk Evaluation

When the risk analysis process has been completed, it is necessary to compare the estimated risks against risk criteria which the organization has established. The risk criteria may include associated costs and benefits, legal requirements, socioeconomic and environmental factors, concerns of stakeholders, etc. Risk evaluation therefore, is used to make decisions about the significance of risks to the organization and whether each specific risk should be accepted or treated.

Risk Reporting and Communication

Both internal and external stakeholders need to be informed of the risk evaluation results so that they would be able to make decisions on the issues concerned. At the end of the day the purpose of risk analysis and risk evaluation is to help managers and other stakeholders make better and informed decisions.

Risk Treatment

Risk treatment is the process of selecting and implementing measures to modify the risk. Risk treatment includes as its major element, risk control/mitigation, but extends further to, for example, risk avoidance, risk transfer, risk financing, etc

Monitoring and Review of the Risk Management Process

Effective risk management requires a reporting and review structure to ensure that risks are effectively identified and assessed and that appropriate controls and responses are in place. Regular audits of policy and standards compliance should be carried out and standards performance reviewed to identify opportunities for improvement. The monitoring process should provide assurance that there are appropriate controls in place for the organization's activities and that the procedures are understood and followed.

2.6 Liquidity Risk Management in Banking

The liquidity risk of banks arises from funding of long-term assets by short-term liabilities, thereby making the liabilities subject to rollover or refinancing risk. Liquidity risk is usually of an individual nature, but in certain situations may compromise the liquidity of the financial system. (Kumar & Yadav, 2013) Hence, the purpose of liquidity risk management is to measure the amount of appropriate liquid asset required to be maintained continuously and then to allocate these liquid assets into investments and cash balance so as to maximize overall returns. (Bhattacharyay, 1998)

Wu and Hong (2012) have found that more than 70% of the predicted bank failures in America in 2008 and more than 80% of the predicted bank failures in 2009 were attributed to liquidity risk. This figure shows that liquidity risk is a real threat to banks' existence and need to be managed meticulously.

Liquidity risk management" is heavily inter-related with the "cash flow management" which is nothing but short-term forecasting of cash flow/liquidity through appropriate forecasting methods and by scheduling/controlling cash flow/liquidity through proper management of cash flow/liquidity cycles, cash collection methods and cash transmission procedures. Kumar & Yadav (2013) have clearly stipulated there to be close association between liquidity and solvency of banks that sound liquidity management reduces the probability of banks becoming insolvent, thus reducing the possibilities of bankruptcies and bank runs. Ultimately, prudent liquidity management as part of the overall risk management of the banking institutions ensures a healthy and stable banking sector.

2.6.1 Components of Liquidity Management

The basic components of a strong liquidity management at a bank of any size or scope of operations are: Good Management Information System; Central Liquidity control; Analysis of Net Funding Requirement under Alternative Scenarios; Diversification of Funding Source and Contingency Planning. (Bhattacharyay, 1998) These components should work harmoniously side by side. Otherwise these components in their lonesome would become irrelevant. For example, analysis of net funding requirement would be very difficult without the proper installment of management information systems from which compiled and up to date information is delivered.

Basically the liquidity management process involves the following phases:

- A bank has to maintain certain amount of liquidity or reserve requirement as directed by the central bank or the monetary authority;
- The bank needs to arrange for adequate liquidity especially in paper money to meet day-to-day cash demand;
- The commitments of loans need to be managed; and
- The excess available liquidity after considering the above needs has to be invested in profitable investment portfolio.

2.6.2 Framework for Measuring and Managing Liquidity Risk

There are three major components of a framework for measuring and managing liquidity. These components are: Measuring and managing net funding requirements; Managing market access; and Contingency planning. The analysis of net funding requirements involves: The constructions

of a maturity ladder; and the calculation of a cumulative net excess or deficit of funds at selected maturity dates. The funding requirement is determined by analyzing future cash flows based on assumptions of the future behavior of: a) Assets; b) Liabilities; and c) Off-balance sheet items, and then computing the cumulative net excess over the time frame for the liquidity assessment. (Bhattacharyay, 1998)

Levels of Liquidity Management

Given that financial institutions are willing to accept some amount of liquidity risk, that risk must be managed appropriately. Liquidity risk management can be broken into three levels: (see Claire, Murray, & Rosenthal, 2000, P.6)

A. Day-to-day cash management - this type of liquidity management involves controlling day-to-day cash flow variability by balancing cash positions and lines of credit. It is important to monitor short-term liquidity needs so that unforeseen events do not require actions that may be detrimental to ongoing cash management and adequate cash or borrowing capability is available in the event of a large, unpredicted cash demand.

B. Ongoing/intermediate term cash flow management - this type of liquidity management involves ongoing cash needs over the next six to twenty-four months. It involves analysis of cash inflows and outflows. If the analysis indicates a high risk of future cash needs exceeding future available cash, this type of management would include a plan to restore liquidity.

C. Stress liquidity risk management – this type of liquidity management involves the ability of the company to meet the demands of many policy/contract holders for cash over a short period. Although such an event may never occur, it is essential that the cash demand be met if it does.

Table 1: Possible sources of Liquidity and Liquidity Risk and Techniques for Risk Reduction

Possible Sources of Liquidity Risk	Possible Sources of Liquidity	Risk Reduction Techniques
Put options in funding agreements	Asset securitizations	Cash flow match
Market value adjustment provisions	Borrowing	Diversify assets
Surrender charge provisions	Selling additional business	Diversify liabilities
Loan provisions		Back surplus/capital with liquid assets
Separate account products		Establish a durable line of credit
Off-balance sheet guarantees		Issue commercial paper
Derivative investments		
Liquidity backstops		

(Own Construction Based on recommendations by Claire, Murray, & Rosenthal (2000))

2.7 Basel's Principles for Sound Liquidity Risk Management and Supervision

The Basel Committee on Banking Supervision is a committee of banking supervisory authorities which was established by the central bank Governors of the G10 countries in 1975. It is made up of senior representatives of banking supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States. In addition to participants from these countries, representatives from Australia, China, Hong Kong SAR, Singapore and others are members of this committee.

Many of the most exposed banks to liquidity risk 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. (Bank for International Settlements, 2008)

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. Many firms viewed severe and prolonged liquidity disruptions as implausible and did not conduct stress tests that factored in the possibility of market wide strain or the

severity or duration of the disruptions. Contingency funding plans (CFPs) were not always appropriately linked to stress test results and sometimes failed to take account of the potential closure of some funding sources. (Ibid, 2008)

The Basel committee on bank supervision, hence, has forwarded the following seventeen core principles that banks should follow in order to have a sound liquidity risk management system.

Principle 1: A bank is responsible for the sound management of liquidity risk. A bank should establish a robust liquidity risk management framework that ensures it maintains sufficient liquidity, including a cushion of unencumbered, high quality liquid assets, to withstand a range of stress events, including those involving the loss or impairment of both unsecured and secured funding sources

Governance of Liquidity Risk Management

Principle 2: A bank should clearly articulate a liquidity risk tolerance that is appropriate for its business strategy and its role in the financial system.

Principle 3: Senior management should develop a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance and to ensure that the bank maintains sufficient liquidity.

Principle 4: A bank should incorporate liquidity costs, benefits and risks in the product pricing, performance measurement and new product approval process for all significant business activities (both on- and off-balance sheet), thereby aligning the risk-taking incentives of individual business lines with the liquidity risk exposures their activities create for the bank as a whole.

Measurement and Management of Liquidity Risk

Principle 5: A bank should have a sound process for identifying, measuring, monitoring and controlling liquidity risk. This process should include a robust framework for comprehensively projecting cash flows arising from assets, liabilities and off-balance sheet items over an appropriate set of time horizons.

Principle 6: A bank should actively manage 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.

Principle 7: A bank should establish a funding strategy that provides effective diversification in the sources and tenor of funding. It should maintain an ongoing presence in its chosen funding markets and strong relationships with funds providers to promote effective diversification of funding sources. A bank should regularly gauge its capacity to raise funds quickly from each source. It should identify the main factors that affect its ability to raise funds and monitor those factors closely to ensure that estimates of fund raising capacity remain valid.

Principle 8: A bank should actively manage its intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions and thus contribute to the smooth functioning of payment and settlement systems.

Principle 9: A bank should actively manage its collateral positions, differentiating between encumbered and unencumbered assets. A bank should monitor the legal entity and physical location where collateral is held and how it may be mobilized in a timely manner.

Principle 10: A bank should conduct stress tests on a regular basis for a variety of institution-specific and market-wide stress scenarios (individually and in combination) to identify sources of potential liquidity strain and to ensure that current exposures remain in accordance with a bank's established liquidity risk tolerance. A bank should use stress test outcomes to adjust its liquidity risk management strategies, policies, and positions and to develop effective contingency plans.

Principle 11: A bank should have a formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. A CFP should outline policies to manage a range of stress environments, establish clear lines of responsibility, include clear invocation and escalation procedures and be regularly tested and updated to ensure that it is operationally robust.

Principle 12: A bank should maintain a cushion of unencumbered, high quality liquid assets to be held as insurance against a range of liquidity stress scenarios, including those that involve the loss or impairment of unsecured and typically available secured funding sources. There should be no legal, regulatory or operational impediment to using these assets to obtain funding.

Public Disclosure

Principle 13: A bank 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.

The Role of Supervisors

Principle 14: Supervisors should regularly perform a comprehensive assessment of a bank's overall liquidity risk management framework and liquidity position to determine whether they deliver an adequate level of resilience to liquidity stress given the bank's role in the financial system.

Principle 15: Supervisors should supplement their regular assessments of a bank's liquidity risk management framework and liquidity position by monitoring a combination of internal reports, prudential reports and market information.

Principle 16: Supervisors should intervene to require effective and timely remedial action by a bank to address deficiencies in its liquidity risk management processes or liquidity position.

Principle 17: Supervisors should communicate with other supervisors and public authorities, such as central banks, both within and across national borders, to facilitate effective cooperation regarding the supervision and oversight of liquidity risk management. Communication should occur regularly during normal times, with the nature and frequency of the information sharing increasing as appropriate during times of stress.

2.8 The Northern Rock Experience

Northern Rock was a British bank that was established in 1997, though the company existed long time before this time as a building society that serviced loans for the local society in which it was found in 1965. It had a business plan which involved borrowing heavily in the UK and international money markets, extending mortgages to customers based on this funding, and then re-selling these mortgages on international capital markets, a process known as securitization. (Stuckler, Meissner, & King, 2008)

In August 2007, when the global demand from investors for securitized mortgages was falling away, the lack of money raised by this means meant that Northern Rock became unable to repay

loans from the money market. On 14 September 2007, the bank sought and received a liquidity support facility from the Bank of England, to replace funds it was unable to raise from the money market. This led to panic among individual depositors, who feared that their savings might not be available should Northern Rock go into receivership. The result was a bank run – the UK's first in 150 years – where depositors lined up outside the bank to withdraw all of their savings as quickly as possible, particularly since everyone else was doing the same (Ibid, 2008)

This bank run totally paralyzed the bank in its liquidity position and it could no longer pay the retail customers who were demanding their money. The bank finally gave-in and collapsed which led to a nationalization of all its resources by the bank of England. It later was sold to a private company called Virgin Money which changed the name of the bank to Virgin in 2012 after acquiring it.

Contrary to received wisdom, its reliance on securitization was not an immediate factor in its failure. Rather, its problems stemmed from its high leverage coupled with reliance on institutional investors for short term funding. (Shin, 2008)

Based on the lesson learnt from Northern Rocks failure Shin (2008) has forwarded the following recommendations on the liquidity aspect of the situation.

The rationale for liquidity regulation is to put in place some restrictions on the composition of assets. The rationale is that a bank can survive a run if (1) it has sufficient liquid assets and cash or (2) it has sufficiently stable (i.e. illiquid) liabilities such as long-term debt. Too much illiquidity on the liabilities side of the balance sheet will undermine the incentive effects. The idea would be to strike the right balance between mitigating the externalities and preserving incentives.

Moreover, the liquidity requirement may not be too onerous if the requirement is adhered to widely in the financial system. The idea is that when small liquidity buffers are distributed widely in the financial system, spillover effects can be mitigated by amplifying the buffer effects, just as the absence of liquidity buffers will tend to amplify shocks that reverberate inside the system.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter deals with the presentation of the overall design of the research, the sources of data, the population and the sampling techniques, the data collection procedures and the methods applied to analyze the data .

3.1. Research Design

This research utilizes quantitative data analysis since the purpose of the research is to find out the practices of liquidity risk management and to measure the level of adherence to international principles of liquidity risk management. In the same token, the data in this research is interpreted in a way that leads to an understanding of the effect of each variable in explaining the whole phenomenon and to determine the magnitude of the influence of each variable.

3.2. Population and Sampling Techniques

Since the focus of this research is to determine the liquidity risk management practices of the Commercial Bank of Ethiopia, the data collection was made from the bank itself and its employees. The researcher was interested in finding how the bank is managing the risk and whether it was conforming to the international standards, the choice of population was selected from the risk and compliance department and the fund management departments of the bank.

As the topic of “liquidity Risk Management” is too technical and the bank is too big with more than seven hundred branches all over the country, having to communicate all employees for their feedback on the subject was ruled out. Instead a more reasonable size of respondents and a more acquainted group of employees who deal with the subject matter in their day to day activities was selected.

In the two departments selected for the study there are about fifty technical (clerical) staff for whom questionnaires were distributed.

In addition to this data on the financial status of the bank for two years (from late 2011 to mid 2013) including the liquidity and reserve reports of the bank were obtained from the MIS

(Management Information Systems) department for additional analysis and further explanation of the data collected from the main sources.

3.3. Types of Data and Tools/Instruments of Data Collection

3.3.1. Types of Data

Data types are classified in to two; qualitative and quantitative. Qualitative data are used to find out the facts and quantitative data are employed to formulate new theory or principles. (Singh, 2006) The qualitative data provide the extent and nature of the distribution of the trait or variable measured and tools are available to measure the variable.

The data required for this research is not readily available from other sources as the scope and the research questions desired to be answered are quite different than the limited number of other researches and data available. As a result the way of data collection suitable is that of a primary one, though not limited to it.

In this context the research makes use of qualitative type of data as the main source of information. To this end, a primary data was collected in a questionnaire and an interview format.

Other supplementary data were collected from secondary sources such as publications, published reports, books, annual and/or quarterly reports; various data relevant to the study from different government and non-government agencies and the like.

3.3.2. Instruments of data Collection

The main purpose of this study will be to find out how liquidity risk is recognized, managed and what kinds of methods are adopted to curb this risk in Commercial Bank of Ethiopia. To this effect structured questionnaires have been distributed to the officers in the risk and compliance department and the Fund Management department of the CBE staff to get information on the processes and challenges of liquidity risk management and to get their feedback on their perception of the success and/or failure of risk management and the strengths and weaknesses of the practices in the bank.

The questionnaire is designed based on the concepts discussed on the literature review. It has three broad categories. The first one is background with which general information about the

respondents was inquired to have an understanding of the level of acquaintance the respondents could have over the subject matter under investigation. The second category of the questionnaire contains direct questions about the subject matter of “liquidity risk”. The questions here were put in statement form and the respondents were requested to express their level of agreement with the statements in a five scale Likert scale that ranged from strongly disagree all the way to strongly agree.

The statements in the second category of the questionnaire are further classified in to three sub sections. The first section contains statements about risk identification, risk analysis, evaluation and treatment, and risk monitoring and review. The second section contains statements that are taken from Basel Committee on Banking Supervision’s principles for sound liquidity risk management and supervision. The aim of these statements in the questionnaire was to find out to what extent Commercial Bank of Ethiopia is adhering to international standards on managing liquidity risk and hence pin-point the potential areas that could lead to a risk exposure. The third section contains statements that probe the general attitude about risk management and the potential readiness to face and mitigate liquidity risks if faced.

Finally, the third category of the questionnaire contains four open ended questions that are aimed on capturing what kinds of risk mitigation techniques are being practiced and what challenges exist in managing those risks.

Overall, the questions are meant to capture the management’s and the risk department’s understandings of the bank’s risk management processes and mitigation strategies.

In addition to that, direct observation and an interview by the researcher in some cases was applied in gathering data for the research. The interview was conducted with some of the risk management staffs in an unstructured manner so as to clarify some of the issues that were dealt in the questionnaire in a general form and needed some explanations. As for the observation the researcher has made some observations on the application of risk management strategies on the grass root level on the branches and departments of the bank other than the risk management department. Plus some of the reports on the risk management by the bank were reviewed to gather more familiarity with the processes of the bank.

3.4. Procedures of Data Collection

In the data collection procedure the first task was to review the literature on risk and risk management. This process led to an identification of various kinds of risks pertaining to banks. Based on the information gathered the researcher contacted the risk management and compliance department and discussed about what the stand of the bank was in relation to those risks. And thus the discussion revealed that the bank puts liquidity risk on top of the list as the most serious type of risk amongst the others. Based on that information the researcher investigated more on the topic of liquidity risk.

The Basel committee on Banking Supervision is an international association of banking regulators that develops principles and guidelines on supervision of banks. It has twenty seven member countries including USA, UK, China and Germany represented by their central banks' governors. Amongst its many principles and guidelines is the "Principles for Sound Liquidity Risk Management and Supervision" drafted in 2006. This guideline contains seventeen principles that ought to be practiced by banks in order to ensure sound liquidity risk management.

Making these Basel principles its centerpiece a questionnaire was developed that could investigate the extent to which the practice of risk management in CBE adheres to those principles and to some other general managerial principles.

Those questionnaires were distributed to the CBE staffs in the concerned departments to get their feedbacks on those questions. The sample population for the research was estimated to be forty to fifty employees. Based on that fifty questionnaires were sent to those departments and forty five of those were returned.

After the collection of those questionnaires and having reviewed them the researcher went back to the risk department of CBE for an interview with some of the risk experts on some issues that were not clearly explained by the questionnaire. The type of interview conducted was an unstructured one which was just aimed at filling the gaps of the questionnaire.

Finally, a raw data of the liquidity and reserve positions was acquired from the MIS department of CBE for further analysis of the trend of liquidity, liquid assets, liabilities and the position of the required liquidity level.

After all the required data was gathered in the above mentioned procedures the last step was to make an analysis of the data collected in order to arrive at a conclusion and answering the research questions put forth by the study and proving or disproving the hypotheses.

3.5. Methods of Data Analysis

Following the data collection procedure and all the necessary data have been gathered, analyses were made to arrive at findings that would answer the research questions using different research methods. The research method utilized in this paper is that of an exploratory and quantitative type. A descriptive statistics have been used to analyze the data from the questionnaire and other time-series data by making use of different statistical tools such as mean, median, correlation.

In addition to that a qualitative analysis was made use of to analyze the open ended questions in the questionnaire and give supplementary results to that of the main data sources and analyses. For reporting purpose and for clearer data presentation ratios, percentages, graphs, tables and charts have been employed in the analysis section of this research.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter the data collected using the procedures discussed in detail in the previous chapter is summarized to find the results of the study. Once the results have been summarized and reported then those findings have been discussed and interpreted in detail. This chapter incorporates: detailed explanation of the composition of the sample, the summary from the secondary data, the results and discussion of the primary data, and the hypothesis test results.

4.2 Background

For the primary data collected using the questionnaire a sample of fifty employees were selected using non-probability judgment sampling technique. Although the study is not particularly about the characteristics of the employees themselves, the characteristics of the bank itself is reflected on the employees and they can explain the practices and challenges of the bank. Hence a group of experts in the area of liquidity risk management were selected out of the whole institution.

Figure 2: Composition of Participants in the Study



As the figure above shows 40% of the respondents (18 out of 45) were risk experts whose job description mainly involves -among others- identification, analysis, evaluation and review of banking risks. The researcher, thus, feels confident about the results drawn from this group. Similarly, the next group of respondents was chosen from the compliance department. Comprising 22% of the total respondents (10 out of 45), the employees in this department, which is the sub process of the whole risk and compliance department, make follow ups and constant checks whether different rules and regulations established by the bank itself, by a regulatory body of the country like the National bank of Ethiopia, the country, and/or other International organizations have been met. This compliance check up includes adherence to liquidity, and liquidity risk management principles laid out by some of the above bodies. For this reason they have become eligible for the sample selected for the research.

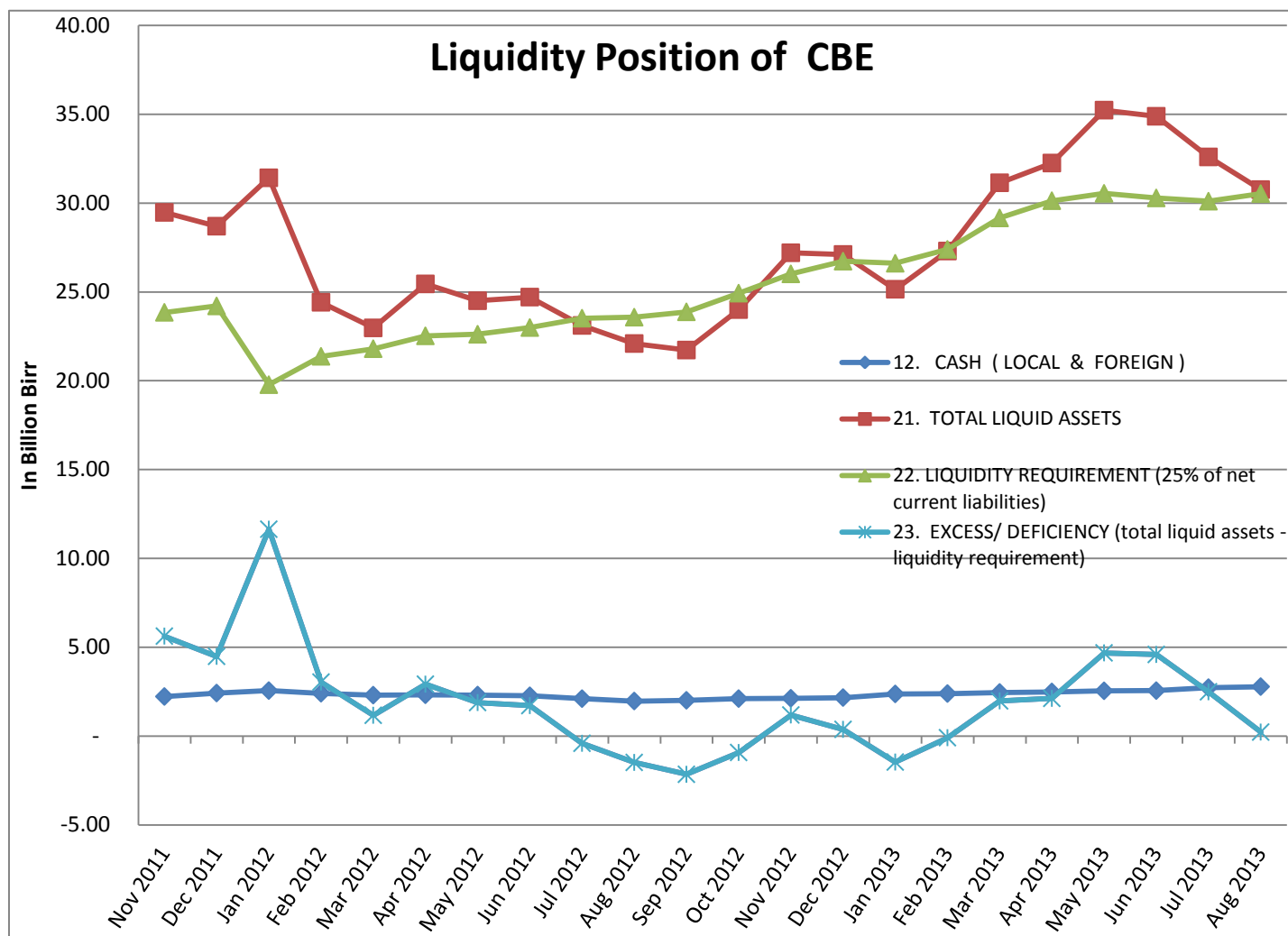
The last group included in the study comes from the fund management department. 38% percent (17 out of 45) of the respondents of the questionnaire are officers from this department. The fund management department, and by connection the staff, mainly are responsible for availing funds for required financial outlays, projecting future fund requirement, maintaining sufficient balances in CBE's accounts held with other banks- domestic or foreign, following up and reporting on the financial status, making remedial actions for fund related issues(mishaps), and others. The fact that the fund management officers deal with these issues made them eligible for answering questions related with the liquidity risk management of the bank.

4.3 The Results for the Secondary Data

The Secondary Data was collected from the MIS department of CBE on reserve and liquidity. The data was available in a weekly format for the period of November 2011 to August 2013. For analysis and convenience purpose the researcher had to summarize it in to a monthly report by taking the average of the weekly figures of a given month.

This summary incorporates data on liquid assets, liability, cash in hand, and liquidity requirement. The results are summarized in the following chart.

Figure 3: Average Monthly Liquidity and Liquid asset positions of CBE for the period Nov 2011 to Aug 2013



The liquidity requirement set by the National Bank of Ethiopia dictated that all banks should maintain a bucket of liquid assets equivalent to at least 25% of their current liabilities. In the above figure the liquidity requirement graph shows the 25% of the total current liabilities of CBE at a given point of time, hence, the minimum required amount of liquid assets. For most of the period under consideration CBE maintains enough liquid assets that are above the required level.

The assets and the liabilities of the bank show a steady growth for most of the time with the exception of the late 2011 and early 2012 when the current liabilities declined sharply and the liquid assets declined from January 2012 to March 2012 only after reaching a peak in the month of January 2012.

The trend of the movement of the two important variables is similar throughout the period under review. The stock of liquid assets in each period is barely above the required level and it shows that it is vulnerable for huge shocks. The period from July 2012 to January 2013 was the real low points where the level of liquid assets fell below the required liquidity level.

On the other hand, the cash holding is steady over the whole period which is good because when the time comes when the liabilities have to be paid off, the first quick asset that can be used first is cash as the other liquid assets have to be converted to cash to be used to settle commitments.

4.4 The Results for the Primary Data

4.4.1 Risk Identification

The first section of the questionnaire contains statements on risk identification for which the respondents were asked to give their opinion on the process practiced in CBE. As stated in the literature review risk identification is the first activity in the risk management process. In that order these issues were raised first in the questionnaire and the first report of the results in this research begins with the risk identification issues.

Table 2: Descriptive Statistics for Risk Identification

Statements	mean	median	min	max	standard deviation
Risk Identification					
St. 1	3.53	4	2	5	0.894427
St. 2	3.67	4	2	5	0.879049
St. 3	3.13	3	2	4	0.625227
St. 4	4.00	4	2	5	0.977008
Average	3.58	3.75	2	4.75	0.8439
Risk Assessment					
St. 1	4.00	4	2	5	0.977008

Statements	mean	median	min	max	standard deviation
St. 2	2.33	2	1	4	0.797724
Risk Monitoring and Review					
St. 1	4.00	4	1	5	1.107823
St. 2	2.87	3	2	4	0.814639
St. 3	3.13	3	2	5	0.894427
St. 4	3.93	4	2	5	0.863397

In response for statement one which states that risks are easily identified and prioritized in the bank, an average score of 3.53 was obtained in a scale of 1 to 5 1 being the scale for strong disagreement and 5 for strong agreement. This shows that on average the respondents fairly agree that risks are easily identified. As can be seen on the table above the median score is 4 for which 60% of the respondents agreed to the statement.

As for statement 2 towards frequent and regular undertaking of risk identification process, the result shows that there is an above average score. Although more than half of the respondents agreed that there is a frequent and regular risk identification process, there are many who have their doubts. While 13% of them disagreed with the statement the other 20% gave a neutral response to it. Ironically, though, 60% of these people gave a neutral response to the third statement stating that the risk identification process incorporates a grass root level follow up of activities in order to identify risks. The other 13% disagreed with the statement completely.

The strongest result in the risk identification process comes with the incorporation of all staff in the risk identification process stated in the fourth statement. According to the result of this statement the responsibility to identify risks is laid on all employees with 80% of the respondents giving it a score of 4 and 5, where 47% of them agreeing and 33% of them agreeing strongly.

The overall result for the risk identification process in CBE is 3.58 which can be approximated to an agreeable level (4). This implies that there is an above average efficiency in risk identification process in the Commercial Bank of Ethiopia.

4.4.2 Risk Analysis, Evaluation and Treatment

In risk management process the next basic activities after determining or identifying the risks is to analyze, evaluate and treat those risks. Though the main focus of this research is not on these issues it is important to get the foundations right. As a result, the researcher has asked two basic questions that are important to shed light on how the process is conducted and what results these processes have delivered in CBE.

The first question in this context is whether the risks the bank faces are assessed in terms of occurrence likelihood. An assessment of risk is the determination of the value of risk related to a recognized threat. As such the quantification of those threats/risks by itself is not enough in making managerial decisions based on them unless they include the likelihood of occurrence. Since risk and return are two very related and interconnected phenomena, the decision made toward a situation of high risk with lower occurrence likelihood and a high risk with high likelihood of occurrence would not be the same. As a result, the outcome for this was that CBE's risk assessment takes occurrence likelihood into consideration with an average (mean) result of 4.00 with 80% of the respondents giving it a score of 4 and above.

The next statement focused on the result of the assessment process. When asked whether the risk analysis process has showed that the risks faced by CBE over the last few years has decreased, only the 7% agreed and 33% gave a neutral response while the others disagreed with the statement with 13% percent disagreeing strongly. This shows that the risks that CBE is facing are not decreasing over time rather they are increasing.

4.4.3 Risk Monitoring and Review

Effective risk management requires a reporting and review structure to ensure that risks are effectively identified and assessed and that appropriate controls and responses are in place. Changes in the organization and the environment in which it operates must be identified and appropriate changes should be made to risk management procedures.

It is the finding of this research that monitoring the effectiveness of risk management is an integral part of management reporting (St. 1). In the survey conducted the majority (more than 70%) of the respondents on average agreed that this was true.

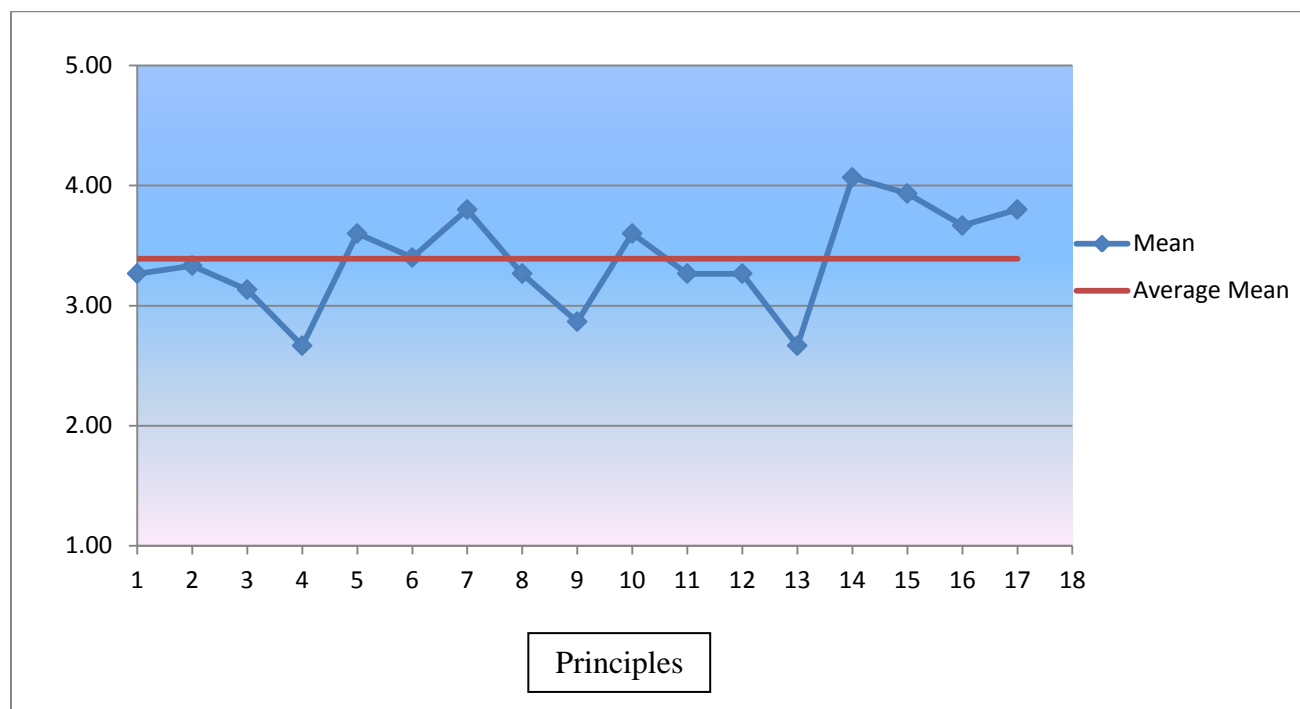
Although the management reporting includes a regular review of the effectiveness of the risk management processes, as it appears these strategies have not been found efficient enough to manage the risks faced by CBE (St.3). This result is substantiated by the lack of confidence for the statement that states the opposite. 40% of the respondents took a neutral position on this and an equal 27% took opposite sides agreeing and disagreeing. The average result for this issue is a 3.13 which is not a good number to conclude that there are efficient strategies.

To strengthen the above point, the questions whether CBE is at the best level of risk management practice (St. 2) and whether CBE should have a better procedure for managing risks than the one being practiced (St. 4), the respondents gave an average score of 2.87 and 3.93 respectively. For the presence of best practice they gave a less than average score and they nearly agree on the need for a better risk management procedure.

4.4.4 Basel's Principles for Sound Liquidity Management

The Basel committee on banking supervision has stipulated seventeen principles that banks should follow in order to practice a sound and solid liquidity management and better manage liquidity risks. On this note this research intends to find out the degree to which the liquidity risk management practices of the Commercial Bank of Ethiopia adhere or compare to those of the internationally formulated and accepted principles. In order to do this the researcher has presented those principles in the questionnaire to find out to what degree those principles are met.

The Basel's guideline incorporates seventeen basic principles for which data was collected and summarized in the following chart for each of them.

Figure 4: Mean Score for Basel Principles

The overall average score (indicated as Average Mean in the graph) for commercial Bank of Ethiopia based on this research's finding is 3.39. This result is distributed between a maximum of 4.07 and a minimum of 2.67 with a standard deviation of 0.89634. Unfortunately, there is no standard set up that would tell what the minimum level of compliance to these principles should be in order to base our decision on and state whether a score of 3.39 out of 5 is a good level of liquidity management practice. But a look at the principles themselves shows that these principles are not meant to be adhered to a certain degree, rather they are meant to be achieved. The basic reason for the committee to recommend those principles for liquidity management is that the business activities of banks all over the world had been highly susceptible for liquidity risks. As a result, the committee developed a set of principles for the banks to follow so that they would run a sound business from a perspective of liquidity risk management. This meant that these principles are benchmarks or minimum standards that need to be achieved.

Practically, however, not every bank has the exact same operations and the same kinds of management practices. For that these principles may not be met exactly to the full extent. It would be fair to say that at least the overall activity of risk management should be closer to the

highest scale to be called best practice. For this I would say that the result for CBE's liquidity management practice is below expectation in comparison to Basel's principles.

In general, CBE has some strong points in meeting the Basel principles and some other weak points. It is therefore important to identify those points for better understanding of where corrective measures can be taken for the weaknesses and carry-on the strengths. Accordingly, based on this survey CBE shows strength on seven of the seventeen principles. These strengths are shown in the graph as the peak points that stood above the average mean line.

✓ **Principle Five**

This principle states "CBE has a sound process for identifying, measuring, monitoring, and controlling liquidity risk." There was a strong response to this with 73% agreeing with the statement. This is a good point to be had although it does not imply that there is a best practice. In fact recalling the result in the previous section in risk monitoring and review, the results showed that there is a lack of best risk management practice and the need for a better risk management procedure.

✓ **Principle Seven**

This principle requires that "CBE regularly measures its capacity to raise funds quickly from each source and it identifies the main factors that affect its ability to raise funds and monitors them closely." 80% of the respondents believed that this was properly conducted. The capacity to raise funds should be monitored regularly so that the bank would be able to make proper decisions on managing liquidity and other managerial decisions based on current capability to acquire liquid assets or the level of liquid assets held in order to back liabilities and minimize liquidity risk. Hence, CBE is doing well in implementing this principle

✓ **Principle Ten**

One of the other strong results for CBE is the tenth principle stating that "CBE conducts stress tests on a regular basis to identify sources of potential liquidity strains." In this context 60% agreed that CBE regularly undertakes stress tests. By conducting regular stress tests CBE can decrease the threat of liquidity risks by identifying the potential sources of this problem.

✓ Principles 14,15,16 and 17

These principles are bundled together here because they all form a sub category in the Basel's principles as the "Role of Supervisors." These principles generally describe the roles that supervisors and/or senior management should play in maintaining a sound liquidity management framework. Accordingly on these principles CBE got a score of 3.67 to 4.07 on the four of them which can be considered as a good achievement.

Coming to the weaknesses, the results show that on three of the principles very low scores were recorded. These principles are: principles 4, 9 and 13

✓ Principle Four

This is a principle that focuses on incorporating liquidity costs, benefits and risks in the process of designing new products, product pricing and performance measurement. The results for this principle show that when designing new products or pricing a product its implication on the status of liquidity risk is not considered much. This could mean that new products that are being introduced as a way of creating a new market are becoming a potential liquidity risk sources.

✓ Principle Nine

On this principle the notion of actively managing collateral positions is dealt with. With an average score of 2.87 CBE is not doing a good job in following up collateral positions and differentiating between burdened and unburdened assets. This could easily lead to a liquidity crisis if the assets are heavily burdened and the bank does not know about it.

✓ Principle Thirteen

The last principle that CBE scored low on meeting is the one that requires a public disclosure of information on the soundness of its liquidity risk management and liquidity position. This requirement is essential in boosting the confidence of market participants on the bank and lead to a reduced risk of bank-runs and increase good business.

4.4.5 General Liquidity Risk Management Practices

For general attributes of liquidity risk management practices in CBE, the results are presented in the table below. In addition to determining adherence to the Basel's principles the overall

implications of the current practices towards the soundness of the current liquidity status and the possible outcome for the near and/or far future are assessed.

Table 3: Summary of results for liquidity risk management

	Statements	Mean Result	% of <3 (disagreeing) responses	% of >3 (agreeing) responses
1	The responsibility for risk management within CBE is well understood	3.87	7	80
2	CBE is able to allocate appropriate resources in support of risk management policy and practice.	3.67	13	74
3	CBE's risk management policy is made known to all staff.	3.07	40	53
4	The level of risk tolerance by CBE is high.	3.93	7	80
5	There is high level of resource commitment by CBE that could lead to high liquidity risk exposure.	3.93	0	67
6	The pace with which CBE is raising funds is high enough to cover the future needs for payment and settlement.	3.13	27	40
7	CBE's strategies to raise funds maintains efficiency and competitiveness in the market	3.80	0	60
8	CBE has the potential to recover in a short period of time if faced with liquidity shortage.	3.40	20	46
9	There is well developed mitigation framework for liquidity risk in CBE	3.40	27	53
10	There were times when CBE's operations were disrupted due to liquidity shortages.	2.13	60	7

From the figures above it can be seen that CBE is performing well in allocating appropriate resources for risk management and in delegating and making everyone aware of their responsibilities in risk management. Risk management otherwise will not be effective without the involvement of all staff and their involvement in the process.

It can also be learnt that CBE has fairly high risk tolerance. Considering the big size of the bank and its huge responsibilities laid on it by the government to support the development of the country's economy, it is almost expected of it to widen its risk appetite. In line with this, it is observed that there is a high resource commitment, notably in extending huge credit to government-owned mega projects, that could easily lead to a serious liquidity risk. However, at the moment there is a high pace of fund raising that matches the commitments and could keep the bank afloat. These funds still are mostly short term liabilities with which the bank is using to fund its long term assets (long term loans).

The results also show that there is a well developed mitigation strategy for liquidity risk and the bank can thus be in a position to recover quickly from a liquidity crisis, if faced with one.

4.4.6 Challenges for Liquidity Risk Management

In managing liquidity risk, any risk for that matter, could have many obstacles or challenges in achieving desired outcomes. CBE is no exception for this and thus the challenges it could be facing in the near future in managing its liquidity has been explored in the questions posed for the respondents.

Accordingly, the following are the major challenges that are likely to face CBE according to observations of the participants of this research.

- The bank is required to finance mega projects and make major payments that are not yet made. So when the time comes due to make those major payments, there may be liquidity shortfall.
- Raising sufficient funds to match the huge commitments that the bank has may be a challenge in the near future after all the fund raising means are exhausted.
- The inability to fund its increasing asset and deterioration of asset quality, expansion of its business
- Resource allocation is not based on an incremental deposit.

- Excessive growth and expansion that is underway now may lead to creation of loopholes that can cause liquidity risks and managing them becomes harder and harder as the expansion continues.
- Tougher competition and absence of secondary markets that might lead to deterioration of funding sources as the competitors scramble the customer bases of the bank and the lack of the secondary markets to raise funds would add to that problem.
- failing to meet the increasing (investment) demands of public and private sector customers (customers' expectation) due to lack of sufficient liquidity
- Being state-owned bank, CBE's strategy highly depends on the nation's strategy (GTP) hence there may be a great disparity among the response options to manage the identified risks and the need of the nation's strategy

4.5 Hypothesis Tests

Based on the results found the hypotheses formulated in the first chapter have been tested and proved or disproved.

H1: CBE has a growing trend in liquidity risk over the past years.

Both the primary and the secondary data confirm this hypothesis. Most of the respondents for the questionnaires agreed that the level of liquidity risk in the past years is increasing. This is also confirmed by the secondary data. In the secondary data we have seen that liquid assets of CBE are barely above the required liquidity level most of the time and in the recent times they have gone down to levels below the 25% minimum required rate. Therefore, this hypothesis is accepted.

H2: There is a danger of facing a liquidity crisis in CBE in the near future under current state of variables.

With the high level of resource commitments and engagement in funding very big projects, and the composition of its liabilities mostly being short term, the respondents agreed that there is a threat of liquidity risk in the near future for CBE.

H3: If faced with liquidity crunch CBE can recover very quickly and restore normal business activities.

This hypothesis is accepted with a slightly above average result in the survey. The result from the survey provides a 3.40 average in a scale of 1 to 5. Therefore, it can be generalized that CBE can recover from a liquidity crisis in a short time with an above average probability.

H4: CBE's liquidity management practices sufficiently comply with Basel's principles for sound liquidity management.

As discussed in previous topics the Basel principles on liquidity management are guidelines that banks should follow and accomplish fully in order to avoid liquidity risks and have a sound liquidity management system. Having this in mind the overall rating for CBE in meeting/Practicing these principles is 3.39 which is far from sufficiently complying with the principles.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summarized form of the findings of this research and based on that conclusion and recommendations are presented. The conclusions are based on the research questions that were stated in the first chapter. These conclusions have led the researcher to present his recommendations in order to have a sound liquidity risk management.

5.1 Conclusions

To begin with, the general objectives this research paper started to accomplish were to show the practices and challenges of liquidity risk management in Commercial Bank of Ethiopia and to check whether these practices were in accordance with international principles for liquidity risk management, specifically the principles recommended by the Basel Committee for Banking supervision.

The specific questions this paper intended to answer are:

- What risk identification mechanisms are laid out within the bank?
- What risk assessment criteria are being used in CBE?
- What liquidity risk mitigation techniques are being practiced?
- What are the major challenges faced by CBE in managing liquidity risk?
- To what degree is CBE complying with the Basel principles in managing Liquidity?

In this research it is found that the risks that CBE is facing are increasing over time. This is the result of increasing expansion and growth of the bank. Being a government bank and the largest commercial bank in Ethiopia has brought about additional responsibilities and duties to be laid on it by the government. The growth and transformation plan of the country is a very stretched and a demanding plan. This has implications on the bank in such a way that the management of its risks is not solely reliant on the risk identification and analysis procedures of the bank rather on meeting the government's expectations. This has led to increasing commitments by the bank and hence more vulnerability to risks.

The risk identification and assessment mechanisms that are laid out in the CBE to help identify risks are mostly stress testing, gap analysis and ratio analysis. These are the commonly used

practices in the world to identify liquidity risks. Stress testing involves applying stress situations to the model of risk management within the risk tolerance of the bank and checking how much of stress it can withstand. The gap analysis, in the other hand, involves determining the future liquidity requirement and the expected liquidity position that could be had and calculating the gap between the need and the possession of the liquidity. Ratio analysis is the application of predetermined liquidity risk measurement ratios such as current assets to current liability ratio and loan to deposit ratio to determine the level of liquidity risk exposure.

Regarding the risk identification process it is observed that risks are easily identified in CBE as there is a regular undertaking of risk identification process. However, this process mainly focuses on the major activities of the bank and does not monitor the grass root level activities. This would lead to an overlooking of important liquidity risk sources that are not easily observed and cause major problems. It is found that focus is given to the risks that are identified easily, and this could be the result of focusing only on the bigger horizon and ignoring the small things that could add up and become real risks.

Risk mitigation techniques are those techniques an institution implements to reduce or avoid the risks that it has identified. In this line, it is observed that the major tool that is used to mitigate liquidity risk is an extensive and aggressive deposit mobilization. One of the main reasons for CBE to undergo an elaborate expansion process is to raise the huge funds required for the massive commitments that it has entered into. The other tools used in mitigating liquidity risk include: diversifying funding sources, putting in place sufficient back-up liquidity and contingency plan, managing credit and operational risk that could lead to liquidity risks, intensive cash and cash equivalent management, and managing loan concentrations.

This leads us to the point of whether CBE is at its best risk management practice. The results show “No”. Although there is a sound process for identifying, measuring, monitoring and controlling liquidity risk, it is not the best that can be had. To this effect, most of the respondents believe that there should be a better procedure that could lead to better risk management practices.

Another point that contributes to the increasing risks faced by CBE and to the lack of best practice is that liquidity costs, benefits and risks are not being incorporated in the current product pricing, performance measurement and new product approval processes. Having the continued

growth and expansion of the bank in mind, this results in adding more risk factors to the portfolio by not considering the effect of these practices in creating and/or adding more risks to the bank.

The Basel's sound liquidity management practices are the internationally recommended tools for best practice in liquidity risk management that CBE lacks. The results of this research show that CBE has an above average compliance to those principles. This implies that the bank needs to work more on better meeting these principles in order to achieve the best practices of liquidity risk management.

In the process of managing the present and future liquidity risks there are some challenges that the bank is likely to face. The most prominent and serious challenge is the inability to fund its increasing asset and deterioration of asset quality. This is the result of the above mentioned excessive growth and ever increasing commitments. On top of this, the increasing competition in the deposit market leads to exhaustion of funding sources that would enable CBE meet its huge commitments. If this continues, the bank will not be able to match the ever increasing demand of the private and public customers for credit and other resources.

5.2 Recommendations

Based on the findings and conclusion of this research, the following recommendations are forwarded by the researcher in order for CBE to practice a robust, resilient and sound liquidity risk management system. These recommendations are provided based on the information that was availed to the researcher and the results found by analyzing those data.

- CBE should be able to incorporate liquidity costs, benefits, and risks in the processes of product pricing, performance measurement and new product approval. This would enable the bank to track and tackle new sources of liquidity risks.
- The bank should actively manage its collateral positions and differentiate burdened and unburdened assets. This would help make better decisions in the liquidity risk management process by steering away from activities that would add more pressure on the burdened assets and increase the risk exposure and focusing on the less burdened assets.
- The bank should disclose information to the public more on a regular basis about the soundness of its liquidity risk management framework and liquidity position to help market participants make an informed judgment. This will bestow more confidence on

the stakeholders about the bank and encourage increased and sound business transactions with the bank.

- The bank needs more autonomy in the process of product development and new investments in line with the bank's own risk and benefit analysis rather than being guided by government pressures. This might be difficult as the government has full ownership of the bank but it is worth a consideration since a failure by this bank would cripple the whole economy and needs to be taken seriously.
- In its quest for huge deposit mobilization, the bank should give due consideration to diversification and focus more on raising long term liabilities that would enable stability in liquidity management.
- The bank should maintain consistent buffer liquidity well above the minimum required liquidity to be able to absorb and withstand market shocks better.
- The bank has scored higher on the role of supervisors in liquidity risk management and this should be maintained and strengthened more to have a well prepared and capable supervisory team.
- CBE should be able to review and revise its risk management procedures and practices in pursuit of best practices. To help this endeavor, the Basel's recommended principles for sound liquidity management should be strictly considered and efforts should be made to practice those principles to the fullest possible extent.

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APPENDIX

Questionnaire

St Mary’s University College
School of Graduate Studies
MBA

Dear Respondent

First I would like to thank you for willing to participate in this research. This is a questionnaire prepared to collect data on the research topic “**Liquidity Risk Management in Commercial Bank of Ethiopia: Practices and Challenges**” for the partial fulfillment of the requirements for masters of business administration.

This research is done purely for academic purpose and your information is kept with the utmost confidentiality. There is no need to write your name in this questionnaire.

If you have any queries please contact me at tel: 0911 930115

Thank you very much

Simeneh Zewdu

I. Background

1. Job title/position: _____
2. Educational level;

<input type="checkbox"/> Diploma	<input type="checkbox"/> Masters Degree	<input type="checkbox"/> Other
<input type="checkbox"/> Bachelor Degree	<input type="checkbox"/> PHD	
3. Major Field of study;

<input type="checkbox"/> Accounting	<input type="checkbox"/> Economics	<input type="checkbox"/> Other
<input type="checkbox"/> Management	<input type="checkbox"/> Banking	
4. Work experience;

<input type="checkbox"/> Below 5 years	<input type="checkbox"/> 10-20 Years	
<input type="checkbox"/> 5-10 Years	<input type="checkbox"/> Above 20 years	

II. Please mark any of the numbers that correspond to your level of agreement to the statements below.

#	STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Risk Identification					
1	Risks are easily identified and prioritized in the bank	1	2	3	4	5
2	Risk identification process is undertaken frequently and regularly	1	2	3	4	5
3	There is a regular follow up of grass root level activities in order to identify risks.	1	2	3	4	5
4	All staffs are responsible for identifying the risks facing CBE	1	2	3	4	5
	Risk Analysis, Evaluation and Treatment					
1	The risks the bank faces are assessed in terms of occurrence likelihood.	1	2	3	4	5
2	In the last few years the level of risk faced by the bank has decreased.	1	2	3	4	5
	Risk Monitoring and Review					
1	Monitoring the effectiveness of risk management is an integral part of routine management reporting.	1	2	3	4	5
2	CBE is at the best level of risk management practice	1	2	3	4	5
3	CBE's risk management strategies are efficient enough to manage risks	1	2	3	4	5
4	CBE should have a better procedure for managing risks than the one being implemented.	1	2	3	4	5
	Liquidity Risk					
1	CBE has established a robust liquidity risk management framework that ensures sufficient liquidity.	1	2	3	4	5
2	CBE has a liquidity risk tolerance that is appropriate for its business strategy and its role in the financial system	1	2	3	4	5
3	Senior management has developed a strategy, policies and practices to manage liquidity risk un accordance with the risk tolerance.	1	2	3	4	5
4	Liquidity costs, benefits and risks are incorporated in product pricing, performance measurement, and new product approval processes.	1	2	3	4	5
5	CBE has a sound process for identifying, measuring, monitoring and controlling liquidity risk.	1	2	3	4	5
6	CBE actively manages liquidity risk exposures and funding needs within and across business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity.	1	2	3	4	5
7	CBE regularly measures its capacity to raise funds quickly from each source and it identifies the main factors that affect its ability to raise funds and monitors them closely.	1	2	3	4	5
8	CBE actively manages its day-to-day liquidity positions and risks to meet payment and settlement obligations on a timely basis.	1	2	3	4	5
9	CBE actively manages its collateral positions, differentiating between burdened and unburdened assets.	1	2	3	4	5
10	CBE conducts stress tests on a regular basis to identify sources of potential liquidity strains.	1	2	3	4	5

#	STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11	CBE has a formal contingency funding plan that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations.	1	2	3	4	5
12	CBE maintains a cushion of high quality liquid assets to be held as insurance against a range of liquidity stress scenarios	1	2	3	4	5
13	CBE publicly discloses 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.	1	2	3	4	5
14	Senior management regularly performs a comprehensive assessment of the bank's overall liquidity risk management framework and liquidity position.	1	2	3	4	5
15	Risk manager/ officers monitor a combination of internal reports, prudential reports and market information to supplement regular assessment of liquidity risk management framework.	1	2	3	4	5
16	Risk manager/ Supervisors intervene to require effective and timely remedial action by the bank to address deficiencies in its liquidity risk management processes or liquidity position.	1	2	3	4	5
17	Risk manager/ Supervisors communicate with other supervisors and public authorities, such as National Bank to facilitate effective liquidity risk management.	1	2	3	4	5
	General Statements					
1	The responsibility for risk management within CBE is well understood	1	2	3	4	5
2	CBE is able to allocate appropriate resources in support of risk management policy and practice.	1	2	3	4	5
3	CBE's risk management policy is made known to all staff.	1	2	3	4	5
4	The level of risk tolerance by CBE is high.	1	2	3	4	5
5	There is high level of resource commitment by CBE that could lead to high liquidity risk exposure.	1	2	3	4	5
6	The pace with which CBE is raising funds is high enough to cover the future needs for payment and settlement.	1	2	3	4	5
7	CBEs strategies to raise funds maintains efficiency and competitiveness in the market	1	2	3	4	5
8	CBE has the potential to recover in a short period of time if faced with liquidity shortage.	1	2	3	4	5
9	There is well developed mitigation framework for liquidity risk in CBE	1	2	3	4	5
10	There were times when CBE's operations were disrupted due to liquidity shortages.	1	2	3	4	5

III. Answer the following questions only to the best level of your knowledge.

1. What would be the first signs if liquidity risk materializes?

2. In your opinion what are the biggest challenges facing CBE in the next few years in managing risks in general or liquidity risk in particular?

3. Could you please mention the major techniques utilized to identify and assess liquidity risks?

4. What major risk mitigation techniques are being practiced to manage liquidity risk?

Thank you again for your time!

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Elias Nour (PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Simeneh Zewdu

Signature & Date

ENDORSEMENT

This thesis has been submitted to St. Mary's University College, School of Graduate Studies for examination with my approval as a university advisor.

Elias Nour (PhD)

(Advisor)

Signature & Date