

**LIQUIDITY RISK MANAGEMENT PRACTICES: THE CASE OF SELECTED
FINANCIAL INSTITUTIONS IN THE KUMASI METROPOLIS**

BY

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DECLARATION

I hereby declare that this submission is my own work towards the Masters in Business Administration (Finance Option) Degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated to my parents, Mr. and Mrs. F. M. Sam, and my siblings, Frederick, Lawrence, Eleanor and Linda.

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All glory, honour and thanksgiving goes to the Almighty God, who has brought me this far and made my programme a success.

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ABSTRACT

The study sought to examine the current liquidity risk management practices of selected financial institutions in the Kumasi metropolis; precisely Rural and Community Banks, Savings and Loans Companies and Microfinance Institutions. In all, 4 Rural and Community Banks, 4 Savings and Loans Companies, and 4 Microfinance Institutions (specifically, deposit-taking institutions), were chosen for the study, using a convenience sampling method. The key respondents, who on the other hand were the branch managers, operations and risk managers, were chosen purposively. Specifically, 3 respondents were selected from each institution, making a total of 36 respondents in all. Primary data were gathered using both questionnaires and interviews. The study revealed that internal control systems and institutional policies play a major role in the liquidity risk management practices of these institutions. Again, the setting of limits on savings withdrawals and the use of customers' savings as a source of funding, were found to be the least used strategies across the three different groups of financial institutions (as a result of an increased competition in the banking sector). A further analysis of the results using a one-way ANOVA indicated that there were largely no significant differences in liquidity risk management practices across the three groups of institutions studied. Furthermore, the study revealed that a proper liquidity risk management had brought more benefits to the Rural and Community Banks than the Microfinance Institutions. Lastly, it was found that the Rural and Community Banks, as well as the Savings and Loans Companies were mostly affected by credit risk, whereas liquidity risk was a major risk for the Microfinance Institutions.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER ONE	1
INTRODUCTION	1
1.0 Background of the Study	1
1.1 Problem statement	4
1.2 Research objectives	5
1.3 Research Questions	6
1.4 Justification	6
1.5 Methodology	7
1.6 Scope and Limitations of the Study	8
1.7 Organisation of the study	9
CHAPTER TWO	10
LITERATURE REVIEW	10
2.0 Introduction	10
2.1 The Concept of Liquidity Risk	10
2.2 Liquidity Risk Management Process	13
2.3 Asset-Liability Imbalance and Maturity Mismatch	15
2.3.1 Factors That Trigger Asset-Liability Imbalance and Maturity Mismatch Risks	15
2.4 Techniques to Mitigate Liquidity Risk	16
2.4.1 Contingency Funding Plan (CFP)	18
2.4.2 A combination of Cash Flow Matching and Liquid Assets (Mixed Approach)	19
2.4.3 Prudential Allocation of Assets	20
2.4.4 Deposit Insurance	20
2.5 Liquidity risk and prudential regulation	21
2.5.1 Development and Implementation of Prudential Regulations and Requirements	21

2.5.2	International regulations and opinions	22
2.5.4	Lender of last resort.....	25
2.5.5	Liquidity Regulation of Financial Institutions in Ghana.....	26
2.6	Empirical Review of Liquidity Risk Management in Financial Institutions.....	27
CHAPTER THREE		30
METHODOLOGY		30
3.1	Introduction	30
3.2	Research Design	30
3.3	Population.....	31
3.4	Sample Size and Sampling Techniques.....	31
3.5	Sources of Data.....	33
3.6	Data Collection Instruments and Techniques	33
3.7	Data Analysis.....	34
3.8	Quality of the Study and Ethical Considerations.....	35
3.9	Brief Profile of the Microfinance Industry in Ghana	35
CHAPTER FOUR.....		37
DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS		37
4.1	Introduction	37
4.2	Summary of Data Collected and Firms Background Information.....	37
4.3	Factors that Affect Liquidity Risk Management Practices.....	39
4.3.1	Internal Control Systems	39
4.3.2	Institutional Policies	42
4.4	Strategies that are instituted to Monitor and Control Liquidity Risk	44
4.5	The benefits of proper liquidity risk management on the growth of these institutions	47
4.6	Exploratory Data Analysis.....	49
4.7	Challenges faced by the institutions in managing their liquidity risk	52
CHAPTER FIVE		58
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS		58
5.1	Introduction	58
5.2	Summary of findings	58
5.3	Conclusion.....	61
5.4	Recommendations	62
5.5	Suggested areas for further research.....	63

REFERENCES	64
APPENDIX ONE: QUESTIONNAIRE	71
APPENDIX TWO: INTERVIEW GUIDE	73

LIST OF TABLES

Table 3.1: List of Financial Institutions used in the study	32
Table 4.1a: Number of respondents from each institution.....	37
Table 4.1b: Summary of the positions of respondents.....	37
Table 4.1c: Length of service of respondents in institution.....	38
Table 4.2a: Internal Control Systems.....	40
Table 4.2b: Institutional Policies	42
Table 4.3: Strategies to monitor and control liquidity risk	45
Table 4.4: The benefit of LRM to the growth of these institutions	48
Table 4.5: Risk Profile of the Rural and Community Banks	57
Table 4.6: Risk profile of the Savings and Loans Companies	57
Table 4.7: Risk profile of the Microfinance Institutions.....	57

LIST OF FIGURES

Figure 4.1: Respondents in each institution.....	38
Figure 4.2: Internal controls vs. position of respondents.....	41
Figure 4.3: Institutional policies vs. position of respondents	43
Figure 4.4: Strategies vs. position of respondents	47
Figure 4.5: Benefits vs. position of respondents.....	49
Figure 4.6: Internal controls across institution type.....	50
Figure 4.7: Institutional policies across institution type	51
Figure 4.8: LRM strategies across institution type	51
Figure 4.9: Benefits of proper LRM practices across institution type	52

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

The element of risk forms part of almost every financial transaction. By extension, risks pervade the financial system in various economies. Therefore, managing risk is integral to the survival of financial markets and institutions. This certainly does not leave out the banking and finance industry which in recent times has also experienced its own challenges with respect to risk management.

According to various theories on financial intermediation, financial institutions exist for two basic aims; namely providing liquidity (funds) and then other financial services. However, the role of financial intermediation played by various financial institutions, including banks, makes them inherently vulnerable to liquidity risk (Basel Committee, 2008).

Till recently, due to the regulated environment, banks could not afford to take risks. However, banks are now exposed to the same competition other business organisations face, and are therefore compelled to encounter various types of financial and non-financial risks.

That is to say that in our present world of globalization, considering the recent changes in the banking environment, banks have become more exposed to risks, as they have sought to improve upon shareholders' returns, and as such have also been compelled to put up measures to manage these risks in order to minimise losses. (Casu et al., 2006).

According to Rejda (2008), risk management is “a process that identifies loss exposures faced by an organisation and selects the most appropriate techniques for treating such exposures”. The author further goes on to state that because the term risk is a bit vague, and as such could connote several things, many risk experts use the term “loss exposure” to identify potential losses. Firms and financial institutions are best seen as ongoing entities whose project

completion may require continued liquidity inputs (Holmstrom and Tirole, 2000), and as such proper funding as well as liquidity risk management is vital.

Liquidity in banking is very essential, in that a bank needs to keep adequate cash or other liquid assets to meet the withdrawal demands of customers as well as their loan demand. (Casu et al., 2006). The International Monetary Fund (IMF), defines funding liquidity as “the ability of a solvent institution to make agreed-upon payments in a timely fashion” (IMF, 2008, p. 11). As also reiterated by Drehmann and Nikolaou (2013), funding liquidity could be described as the ability of banks to meet their obligations with immediacy, so by implication, funding liquidity risk is the possibility that within a certain time frame, a bank becomes unable to settle its obligations with immediacy.

Linking this to banking, liquidity can be seen as the ability of banks to meet the withdrawal demands of customers, the absence of which can lead to a run on the bank. A run on the bank occurs when all the customers of a bank are seeking to withdraw their deposits for fear of the fact that the bank would not be able to meet their withdrawal demands in the future. Such a situation could actually lead to a bank failure, as the bank liquidity problem could now pose a threat of solvency.

The banking business involves the transformation of deposits into loans. This basic function, also known as financial intermediation, relies on a maturity mismatch between the bank’s assets and liabilities, making them exposed to bank runs, or more generally, to funding liquidity risk (Diamond and Dybvig, 1983). Over the years, banking has increasingly become a complex business to run, due to the intertwined set of risks involved (Bonfim and Kim, 2012).

The global financial crisis of 2007 gave a dreadful illustration of how severe and damaging these risks could be and how they can adversely affect the real economy. It revealed the importance of sound liquidity risk management. Thus a crisis that had its origins in credit, now

became a liquidity crisis. The 2007, financial crisis, also known as the subprime crisis, began in the first half of 2007, with the crashing of the quality of US subprime residential mortgages. This decline in the prices of housing in the US led to an increase in the dereliction of mortgage lending, which in turn triggered the liquidity crisis (Ferrouhi, 2014).

Similarly, the Basel Committee (2008), also write that “the market turmoil that began in mid-2007 re-emphasised the importance of liquidity to the functioning of financial markets and the banking sector”. In their submission, they indicate that asset markets were buoyant and funding was readily available at low cost before the crisis began. According to them, the reversal in the market conditions go a long way to show how quickly liquidity can evaporate, with illiquidity rather persisting for a longer period of time. Thus, the banking system came under severe stress, necessitating the central bank to take action to support the functioning of the money market and in some cases, individual institutions.

Despite the complexities involved in banking and the financial sector in general, there is a risk that is inherent in their functions or operation, and that is due to their special role of financial intermediation. Banks grant loans to customers, providing them with the necessary liquidity to finance their activities. For entrepreneurs, this will involve their investment activities. For consumers on the other hand, it will basically be for their consumption needs. Needless to say, banks only use a limited amount of their own resources to funds these activities. Most of the funds come from liabilities accrued from third parties (i.e. the traditional deposits of their customers). “These liquid claims allow consumers to inter-temporally optimize their consumption preferences, but leave banks exposed to the risk of bank runs” (Diamond and Dybvig, 1983). However this same risk of bank runs actually acts as a disciplinary device against the banks (Diamond and Rajan, 2001), given that depositors (Calomiris and Khan, 1991), as well as borrowers (Kim et al., 2005), have incentives to monitor the risks taken by banks.

Given this situation, even though banks are the main providers of liquidity in the economy (Berger and Bowman, 2009; Diamond and Dybvig, 1983), they also have to find a way of suitably managing the liquidity risk underlying their balance sheet structure, as their maturity transformation function makes them inherently liquid. Thus to improve the maturity gap between assets and liabilities, banks can hold a number of liquid assets as a buffer (Acharya et al., 2011; Tirole, 2011). Nonetheless, holding a liquid buffer may prove to be inefficient, as it limits the ability of banks to provide liquidity to customers (entrepreneurs and consumers), as mentioned earlier on. Thus, in spite of the fact that banks have some incentives or benefits for holding a fraction of their liquid assets (in the form of cash, short term assets or government bonds, for instance), these buffers will hardly ever be sufficient to fully insure against a bank run or a sudden dry up in wholesale markets (Bonfim and Kim, 2012).

Against this setting, it is imperative that regulation of banks' activities be done, to abate these risks. For instance, one justification for the need to regulate liquidity risk is related to the fact that banks do not take into account the social optimum when they optimize the relationship between risk and return. For example, one implication for failure to regulate liquidity risks, or for the failure of proper liquidity risk management on the part of banks is that a bank failure may constitute a huge externality on other banks and, ultimately, on the whole economy (Bonfim and Kim, 2012).

1.1 Problem statement

Liquidity problems in one or few banks may lead to bank runs, and contagion to other banks, resulting in a serious loss of confidence in the banking system of the country (Ismael, 2010). Bank runs may lead otherwise solvent banks to experience large losses as they struggle to mobilize less liquid assets to meet liquidity risk. These losses could quickly erode the capital position of still weakly capitalized banks (Muguomba et al., 2013). Thus, a sound management of liquidity is needed if banks are to continue to thrive and serve customers (Ismael, 2010), as

well as give the average Ghanaian enough confidence in the banking system, considering the recent trends of collapse of some Rural Banks and Microfinance Institutions across the country. For example, in 2013, several media houses reported the collapse of more than thirty (30) microfinance institutions across the country, within the first quarter of that year, as result of their inability to sustain their operations (Ghana Business News, 2013; MicroCapital, 2013 and the City and Business Guide, as cited in Ghanaweb, 2013). Now a number of studies have been done on Rural and Community Banks, Savings and Loans Companies, as well as Microfinance Institutions; for example, in areas such as credit management or loans (Owusu, 2008; Arko, 2012), financial performance (Awo and Akotey, 2012), and risk management (Ayam and Ahinful, 2015). However to the best of the researcher's knowledge, no research has tackled liquidity risk management across a variety of financial institutions, such as Rural and Community Banks, Savings and Loans companies, as well as Microfinance Institutions altogether; which have distinct characteristics from the mainstream universal/commercial banks in diverse ways. It is hoped that the multiple case study approach will reveal helpful insights across these financial institutions, in relation to their liquidity risk management practices and operations. It is in this light that the study was carried out.

1.2 Research objectives

The general objective of this study is to explore the current liquidity risk management practices being followed and exercised by the selected financial institutions in the Kumasi metropolis.

The specific objectives include:

1. To assess the factors that affect liquidity risk management practices in the selected financial institutions.
2. To identify strategies that are instituted to monitor and control liquidity risk in these institutions.

3. To examine the benefits of proper liquidity risk management practices to the growth of these institutions.
4. To examine the challenges faced by these institutions in managing their liquidity risk.

1.3 Research Questions

The following research questions have been developed:

1. What are the factors that affect liquidity risk management practices in the selected financial institutions?
2. What are the strategies that are instituted to monitor and control liquidity risk in these institutions?
3. What have been the benefits of proper liquidity risk management practices to the growth of these institutions?
4. What are the challenges faced by these institutions in managing their liquidity risk?

1.4 Justification

Liquidity is critical to banking operations. A liquid bank is one which can meet the short term cash needs of its customers. Therefore, a bank's ability to manage its liquidity is in the interest of its survival and also the financial system (i.e. from the context of prudential regulation). In the banking system, depositors are concerned with their ability to retrieve their monies whenever needed. It behooves the bank to manage its assets and liabilities in a manner that is able to keep enough cash to meet such obligations when they are due. As highlighted by Holmstrom et al., 1998 in their work, liquidity risk arises as a result of revenues and outlays not being synchronised. Before a bank fails in the long term, it usually faces short term liquidity problems. An illiquid bank (depending on its size), could trigger a systemic risk and therefore affect the economy (Bonfim et al., 2012). Again an illiquid bank has implications for the real economy, as depositors will not have cash for consumption and engage in economic activities

(production of goods and services) when needed. The reputation of a bank is also largely on its liquidity position.

This study therefore seeks to bring to light the current trend of liquidity risk management practices in these financial institutions, using the multiple case study approach. With the case study approach, it is expected that specific and unique insights would be revealed, that would be relevant for bankers (especially the young and emerging ones in the category of Rural and Community Banks, Savings and Loans Companies, and Microfinance Institutions), as well as financial analysts and regulators at large. Specifically, the researcher seeks to suggest ways of improving liquidity risk management in these institutions, from the findings.

For academic purposes, the research seeks to add to already existing literature on liquidity risk management, especially in Ghana, which would be beneficial for students and academics in banking and finance.

1.5 Methodology

The study was conducted using twelve (12) financial institutions. These included four (4) Rural and Community Banks, four (4) Savings and Loans Companies, and four (4) Microfinance Institutions (specifically, deposit-taking institutions). A multiple case study approach was adopted in order to obtain a fair idea of what is going in these groups of institutions. Furthermore, an explorative approach was also used in order to gain helpful insights about the problem under study and to ascertain if there exists any significant difference in the results obtained, across the three groups of institutions studied. The target respondents (key informants) were the branch managers as well as the operations or risk managers of these institutions. The sources of data included primary data obtained by the use of questionnaires and personal interviews with the key respondents. Due to the nature of data required, the research was both quantitative and qualitative in nature.

1.6 Scope and Limitations of the Study

The research sought to address issues of liquidity risk management in financial institutions, and to ascertain how effective practices are put in place to mitigate the occurrence of such risks. The focus was primarily on Rural and Community Banks, Savings and Loans Companies, and Microfinance Institutions (specifically deposit taking institution) in the Kumasi metropolis, Ghana. The scope of the research was limited to the liquidity risk management practices and challenges of these financial institutions as they appear to be vital variables in considering their health, especially in the short term. The research was undertaken in the Kumasi metropolis, since the city has a high level of economic and banking activity, and a poor management of liquidity risk could be detrimental, given the concentration of finance and high demand for money there.

Again, considerable difficulties were encountered during the data collection period. Prominent among them was the fact that access to secondary data in the form of financial statements, from the institutions for the purpose of analysis proved unsuccessful. The reason for this was that the institutions used for this study were mostly private institutions and were reluctant to give out their financial statements. Therefore the researcher relied basically on primary data for analysis. The researcher had originally intended to use the financial statements for ratio analysis (specifically liquidity and profitability ratios) in order to determine the financial health of these institutions.

Secondly, a number of institutions delayed in filling the questionnaires during the data collection period. This was also a major setback as the researcher had to wait and receive all the data before commencing the data analysis procedure, which made the entire process very expensive and time-consuming.

Lastly, some institutions were reluctant to partake in the study, while some others who received the questionnaires never filled and returned them to the researcher.

1.7 Organisation of the study

The research is organised into five chapters. Chapter one is the introductory chapter. It deals with the background of the study, problem statement, the research objectives and questions, the justification, a brief methodology, the scope of the study, and the limitation of the study. Chapter two provides relevant literature on liquidity risk management. Chapter three, which is the methodology, discusses details such as the research design, the population of the study, sample and sampling, research instrument, data collection procedure and the method used for the analysis of the study. Chapter four focuses on the analysis and discussion of the data collected from the field. Chapter five summarises the study and goes further to offer recommendations as to what steps could be taken to improve risk management in the financial institutions used for the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

An essential step in the research process is to review literature. This research activity allows the researcher to appreciate the theoretical basis of the research topic. This chapter consists of literature on related theory and past studies on the topic under discussion.

2.1 The Concept of Liquidity Risk

Review of literature reveals several but parallel working definitions for liquidity. Rejda (2008) defines liquidity risk as the possibility that an institution will experience a loss as a result of its inability to meet obligations as they fall due. The International Monetary Fund (IMF) also defines funding liquidity as “the ability of a solvent institution to make agreed-upon payments in a timely fashion” (IMF, 2008, p. 10). Others like Holmstrom and Tirole (1998) also indicate that liquidity risk arises as a result of revenues and outlays not being synchronised.

The latter-named authors further go on to describe firms as ongoing entities whose project completion may require continued liquidity inputs (Holmstrom and Tirole, 2000). For this reason, it is imperative that firms learn to manage their liquidity (funds) so as to ensure a smooth flow of their businesses. The banking business involves the transformation of liquid liabilities (deposits) into illiquid claims (loans). This basic function, also known as financial intermediation, relies on a maturity mismatch between the bank’s assets and liabilities, making them exposed to bank runs, or more generally, to funding liquidity risk (Diamond and Dybvig, 1983; Bonfim and Kim, 2012). This research however takes the basic definition of liquidity as the capacity to fulfill all payment obligations as they fall due (Yan, 2013).

It is the tradition of banks to use a limited amount of their resources to grant loans to entrepreneurs and consumers, thus providing them with the needed liquidity to finance their

investment and consumption needs (Siaw, 2013). Much of these funds are however associated with liabilities to third parties (in the form of deposits). In simple terms, banks retain funds equal to a portion of the amount of their customers' deposits as readily available reserves (i.e. under the fractional reserve system, where banks keep currency on hand with them and also keep deposit accounts with the central bank). These retained funds are used to satisfy demands for payments to customers. The remainder of these customer-deposited funds are used to fund investments or loans which earn the banks profit. However if they lend out too many loans they may not be in good position to meet the withdrawal demands of customers or depositors. Now since there is no accurate way of predicting the volume of withdrawals on a particular day, banks have to maintain their liquidity strong and sound (Yan, 2013).

The process of transforming liquid liabilities into risky assets in the form of loans to their customers, leaves banks exposed to liquidity risk, as there is a maturity mismatch (Diamond and Dybvig 1983; Jenkinson 2008). Thus in order to reduce the maturity gap between assets and liabilities which is an inherent illiquidity, banks need to adequately manage their underlying balance sheet structure by holding a sufficient buffer of liquid assets (Saunders et al., 2008).

Nonetheless, the high opportunity cost of holding liquid assets as a buffer cannot be overemphasized, compared to the higher returns associated with the illiquid assets (loans), the reason being that this may give an indication that management is being inefficient, as the bank's ability to provide liquidity or funding to its clients becomes limited. The net effect now is that in as much as banks gain some amount of incentives in holding liquid assets as buffers, these are barely sufficient to insure against liquidity risk or an eventual bank run as expounded by Saunders et al. (2008) as well as Bonfim and Kim (2012).

Technically speaking, liquidity risk could be classified into two: funding liquidity risk and market liquidity risk (Decker, 2000). Decker (2000) explains funding liquidity risk as the risk that a bank faces as a result of its inability to meet its financial obligations as they fall due, because it is unable to liquidate assets (or is having insufficient funding sources). Market risk on the other hand is explained as the risk that a bank is unable to offset certain types of exposures without significantly reducing market prices as a result of market disruptions (ibid.). This view of market risk is also shared by Rejda (2008), who adds that market risk is usually caused by competitors (for example banks which are offering similar products).

A further clarification between funding liquidity and market liquidity risk is given by Gomes and Khan (2011). They indicate funding liquidity risk to be the risk that a firm is unable to generate funds by deploying assets held on its balance sheet to meet its financial obligations in the short term or on a short notice. It must be noted that a bank's liquidity position is determined largely by its cash holdings and other readily available marketable assets, and also by its funding structure and the amount and type of contingent liabilities that come due over a specified horizon. The same authors also explain market liquidity risk as the ability of banks to execute transactions in financial markets without causing a significant movement in prices (Gomes and Khan, 2011).

In linking funding liquidity and market liquidity risk, one interesting observation made by Brunnermeier (2009) on liquidity risk management is that in the absence of an inadequate practice of it, banks which are facing a liquidity shock usually engage in fire sale of assets, hoard liquidity and reduce their lending to the real economy. The after effect is that this leads to a potential increase in market disruptions and liquidity shocks faced by other institutions resulting in a prolonged deterioration in market liquidity that has a severe impact on real economic growth, as cited by Siaw (2013) in his paper.

Finally, liquidity risk should not be viewed in isolation as financial risks generally are not mutually exclusive. Liquidity risk for instance, is often triggered by other risks such as credit risk, market risk and operational risk, and vice versa (Rejda, 2008; Ismal, 2010), as these risks are very common in the operations of financial institutions.

2.2 Liquidity Risk Management Process

The liquidity management process first begins with the Board of Directors (BOD) of a firm establishing a liquidity management policy which will serve as a guideline for all the employees in the firm. The Basel Committee, as banking supervisory body, has provided at least three requirements for a BOD to carry out, which are summarised briefly below.

First of all, there is the need for the BOD to understand the liquidity risk profile of their organisation, bearing in mind their internal and external business environment, in order to be able to determine their tolerance limit. Again, there is the need for the BOD to determine and approve the appropriate strategies, policies and liquidity risk management practices which they intend to adopt for their operations. And finally, the BOD also needs to relate the content of this policy to the senior management and then guide them in order to implement it (Basel Committee, 2008). Policies are written statements which show an institution's commitment to pursue certain goals and objectives, by setting standards and courses of action. They are intended to clearly specify the institution's mission, values and principles, as well as defining how daily activities are to be carried out (Kimathi et al., 2015).

With the above requirements having been settled, the policies now must contain the specific goals and strategies of managing the liquidity of the firm (both in the short-term and long-term). As a matter of fact, these policies are meant to clearly define the roles and responsibilities of the entities involved the liquidity management process, which include asset and liability management policies as well as the firm's affiliation with other financial institutions and

regulators at large. Thus it behooves the BOD to collaborate with the appropriate expertise like the CEO, risk managers and regulators in order to formulate an effective policy which takes into account the business environment of the firm (ibid.).

Furthermore in the liquidity management process, an effective information system is key, in supporting the entire process. An effective information system allows institutions to monitor, report and control its liquidity risk exposure, thereby determining its funding needs. An effective information system, as explained by the Basel Committee, consists of two players, namely, the decision makers in charge of the liquidity management of the institution, and decision followers who are found at the operational level. Thus information on liquidity management passes from the decision makers, through the senior managers down to the subordinates who implement and also report to the superiors (ibid.).

To add to that, the Basel Committee also prescribes that banks (and other related institutions) ought to have an internal control system to help maintain the soundness of their liquidity management process. Internal control consists of the processes effected by an institution's board of trustees, and other relevant personnel, to achieve specific goals such as effectiveness and efficiency of operations, reliability of financial reporting, and compliance with regulations (University of Delaware, 2012). This internal control system could be assigned to an Asset-Liability Committee (ALCO), which is normally a risk management committee in a bank or lending institution comprising senior managers, and with the goal of evaluating, monitoring and approving risk management practices (Singh and Tandon, 2012), thus bridging the gap between the top and bottom hierarchy of the institution. The internal control system is primarily intended to audit or review the liquidity management process of the institution, evaluating its liquidity position as well as proposing new enhancements to the BOD when necessary (ICAEW, 1999; Council, F. R, 2014; Basel Committee, 2008).

2.3 Asset-Liability Imbalance and Maturity Mismatch

Helmen et al. (1994), identify the two main causes of liquidity risk as asset-liability imbalance and maturity mismatch. These are as a result of two conditions, namely: liquidity gap (a scenario where liquid assets available are relatively larger than volatile liabilities) or liquidity need (where the predicted amount of funds needed on the asset side of the balance sheet are higher than predicted funds available on the liability side). Thus Sharma (as cited in Ismal, 2010) stresses that identifying and mitigating these two scenarios or causes of liquidity risk, will help to eliminate funding and market liquidity risk.

Furthermore, the maturities of assets and liabilities could be matched if bank deposits are allocated to or invested in well-organised maturities. When that happens, these assets could easily be liquidated (upon their maturity) to meet the demand of depositors, thus avoiding both a liquidity gap and a liquidity need (Ismal, 2010).

2.3.1 Factors That Trigger Asset-Liability Imbalance and Maturity Mismatch Risks

A number of factors account for asset-liability imbalances as well as maturity mismatches in financial institutions, some of which are discussed below. It is worth noting that when management becomes aware of these factors, it goes a long way to help them manage their liquidity in such a way as to avoid future repercussions. Again these factors give an indication of the challenges that financial institutions face in managing their liquidity risk.

The first factor is when depositors prefer placing their funds in the short-term tenor of deposits. According to Sharma (as cited in Ismal, 2010), banks happen to use depositors funds in financing long-term investments. As such, an asset-liability mismatch is likely to occur because depositors' funds are liquid, whereas long-term investments are illiquid. Thus when depositors' funds become mature (that is when they come asking for their monies), the banks are compelled to terminate these long-term investments in order to make funds available for their clients in

the short-term, especially in the case where there are insufficient funds available in the short-term. In the nutshell, an over-reliance on short-term debts leaves banks and similar financial institutions without adequate protection from a financial distress (Ismael, 2010).

The second factor worth noting, is when there is a combination of a high interest rate on deposits (with the aim of attracting more funds from depositors) with a high credit rate on loans given out. This places banks in a very delicate situation because when creditors (e.g. entrepreneurs) are unable to repay their loans as a result of their businesses not doing well, coupled with the high credit rate, the banks also find it difficult to repay the deposits. Furthermore in the case where the banks do not have a continued access to the money market, this asset-liability mismatch could actually lead to a liquidity run (Ismael, 2010).

Another common factor is when large corporate entities or big companies become the main depositors for banks. From the outset, it may be profitable to the banks. However, as these deposits are mostly short-term, the risk arises when the withdrawal patterns of these companies are unpredictable, or when most of them seek to withdraw their funds at the same time. In that case, the banks need to seek liquid funds immediately to meet these demands (Ismael, 2010).

Finally, the business cycle also plays a role in asset-liability imbalance. For example, when the economic situation of the day does not support business growth and development, it tends to affect the value of assets on the market, and the asset side of banks' balance sheet is not left out. These and many other factors, if not contained properly, could lead to insolvency, government takeover (bailout) or reputation risk (ibid.).

2.4 Techniques to Mitigate Liquidity Risk

Traditionally, banks are mandated to maintain a certain level of liquidity in order to serve both regular and irregular demand for liquidity from depositors (Basel Committee, 2008). Regular demands for liquidity are those coming from the daily transaction activities of depositors,

whereas the irregular demand (which could be predictable or unpredictable), normally consist of issues such as government withdrawals for fiscal operations and contagious banking crisis, leading to runs (Ismael, 2010).

In the area of satisfying regular demand for liquidity, banks are required to maintain a standby account on the asset side of their balance sheet from which a pool of funds can be drawn from when needed. Commercial banks will obviously need more funds in this pool compared to Savings and Loans Companies and Microfinance Institutions. Helmen et al. (as cited in Ismael, 2010) describes this standby account to consist of the following:

- a. Currencies (cash in vault): These are the funds held by the banks to meet daily transactions. The surplus is sent to the central bank.
- b. Central bank certificates: These certificates are the safe and liquid deposits kept at the central bank.
- c. Other commercial bank deposits: These are the short-term deposits of banks with other commercial banks. For e.g. many smaller institutions like the Savings and Loans Companies and Microfinance Institutions have deposits with the larger commercial banks, both for transaction purposes and as a backup.
- d. Cash items in the process of collection: These consist of cheques deposited with the central bank or other commercial banks, for which credits have not yet been received.

Greenbaum and Thakor (as cited in Ismael, 2010) also propose some techniques to help mitigate the regular demand for liquidity. These include investing more funds in liquid loans and/or keeping more cash in hand. Again, they make mention of the diversification of the sources of funds and finally, the use of the central bank as a lender of last resort where possible.

Now as already mentioned, irregular demand for liquidity is in two folds: predictable and unpredictable. Managing predictable irregular demand for liquidity involves banks using their past experiences or historical data to estimate their short-term liquidity demand, and with the assumption that this demand could be seasonal, cyclical or trend. At best, banks could even establish cordial relationships with their clients, and with that, use it to find out their withdrawal schedules or pattern (Ismal, 2010).

Forecasting unpredictable irregular demand for liquidity however, is more difficult to do so, as the name even suggests. Thus for this case, various proactive measures could be undertaken, which include having a contingency funding plan, having a prudential allocation of assets, having a combination of cash flow matching and liquid assets, using deposit insurance, etc., some of which are enlightened below.

2.4.1 Contingency Funding Plan (CFP)

A contingency funding plan is used to set out the strategies which are used to help deal with stress situations or emergencies when they arise. This includes the responsibilities of management and the procedures to follow in case of a crisis, and indicates potential sources of funding to be tapped into when the need arises (Basel Committee, 2008). This is done in order to ensure that firms are in a position to efficiently manage any unpredicted or sudden fluctuation in their liquidity, both in the short and long term. Thus a contingency fund for example, may be set aside (in a reserve) so that it could be fallen upon in a time when other funding sources have failed. In this way, the firm is able to prevent a possible loss of their significant assets. In sum, a contingency funding plan provides a sound budget that caters for emergencies when they arise (QFinance, 2015).

In the past, many banks and other financial institutions have failed mostly because they had no meaningful contingency plan. In fact, those with a good and unassailable plan are considered

to be more likely to stand a funding crisis than those without one (QFinance, 2015). The process of creating a CFP is however conducted by the management of the firm properly estimating their liquidity needs given an extraordinary scenario. It however becomes more sophisticated, depending on the size, nature, complexity, risk exposures and other factors within the firm (Ismal, 2010).

The Basel Committee (2008), specifically show how a contingency funding plan can be used to anticipate the liquidity needs of firm. First, this involves the analysis and quantitative projections of all funds in both on and off-balance sheets. By this way, the CPF identifies, quantifies and ranks all funding sources in their order of preference. Secondly, there is the need to match the potential sources of cash flow with the usage of funds. That is to say that CPF determines the strategies to be used to manage both assets and liabilities when a liquidity crisis arises. These strategies include selling securities on the money market. Managing the assets includes the selling of longer-term assets, whereas the liability management includes the use of discount windows. Finally, the strategy also involves having warning indicators which alert the management with respect to the predetermined level of an impending liquidity risk problem.

2.4.2 A combination of Cash Flow Matching and Liquid Assets (Mixed Approach)

The mixed approach is combination of the cash flow matching approach and the liquid assets approach, where firms attempt to match cash outflows in each time period with or against a combination of contractual cash inflows and other inflows such as the from the sale of assets, repurchase agreements or other secured borrowings. In using this approach, the most liquid assets are counted in the earliest time period, before the less liquid assets follow (Basel Committee, 2006).

Nonetheless, taking into consideration the current global economy with its dynamics and high level of economic activities, it becomes quite difficult, if not complicated, to analyse the cash flows of firms. Thus in order to arrive at more accurate and robust conclusions, firms (including banks) need to for example, develop systems such as databases to capture the types of depositors, types of deposits as well as their geographic diversification, to enhance this process (Ismal, 2010).

2.4.3 Prudential Allocation of Assets

This is a very effective approach for potentially reducing refinancing risk, redemption risk, as well as repurchasing a bank's borrowing prior to their contracted maturities. However this requires certain conditions to be met before it can be implemented. A few of them are:

- i. A substantial amount of depositors' funds should be placed in highly liquid and secured short-term investment, which could be repurchased or liquidated before maturity to cater for customers' needs.
- ii. Debtors should be required to provide collateral in order to secure long-term investments.
- iii. Syndicated loans should also be joined so that the parties involved could bear the credit risk together.
- iv. Banks should also endeavour to avoid over-concentration of credit on certain categories of placements, such as debtors (Basel Committee, 2008).

2.4.4 Deposit Insurance

This is also another important approach for mitigating liquidity risk, though it does not come without moral hazard problems, Zhu (as cited in Ismal, 2010). Deposit insurance is basically a measure that is used to protect depositors (partly or wholly) from losses that arise because of a

bank's inability to pay deposits when due. Deposit insurance benefits depositors because they are guaranteed of repayment even if banks go into default. It only comes at an extra cost to these depositors. On the other hand, deposit insurance helps banks to reduce the probability of a liquidity risk, as there is now an external body (i.e. a deposit insurance company) to redeem them in case of a default (Ismal, 2010).

In conclusion however, deposit insurance though a beneficial tool, may bring about moral hazard on the part of banks because banks may face less liquidity exposure on their liability side due to the insurance taken and may become less cautious with respect to their financing activities, which could lead to business losses. Thus in order for this tool to be highly effective, Batunaggar (2002) stresses the need for deposit insurance to be accompanied with careful banking supervision and market discipline (as cited in Ismal, 2010).

2.5 Liquidity risk and prudential regulation

To begin with, it must be understood that every business entails risk, but these risks must be curtailed to ensure that the maximum profits are realized. Against this backdrop, every field of business ought to have a set of guidelines, which serve to pilot their operations, and streamline them with the acceptable standards as well as safeguarding them from risks involved in that field.

2.5.1 Development and Implementation of Prudential Regulations and Requirements

According to Vital de Azevedo (2008), risks inherent in banking institutions must first of all be recognised, monitored and controlled, therefore supervisors play a critical role in ensuring that bank management does this. He continues to argue that an important part of the supervisory process is the authority of supervisors to develop and utilize prudential regulations and requirements to control these risks, including those covering capital adequacy, loan loss reserves, asset concentrations, liquidity, risk management and internal controls. These may be

qualitative and/or quantitative requirements. Their purpose, he says, is to limit imprudent risk-taking by banks.

Thus, these requirements should not supplant management decisions but rather impose minimum prudential standards to ensure that banks conduct their activities in an appropriate manner. In other words, it must be noted that the dynamic nature of banking requires that supervisors periodically assess their prudential requirements and evaluate the continued relevance of existing requirements as well as the need for new requirements.

2.5.2 International regulations and opinions

One major need to regulate liquidity risk in banks is related to the fact that banks do not take into account the social optimum when they optimize the relationship between risk and return. However, it must be seriously noted that a bank failure may constitute a huge externality on other banks and ultimately, on the whole economy (Bonfim and Kim, 2012). Furthermore, this risk could be aggravated when considering the fact that liquidity shocks are mostly events with very low probabilities, though they could also have very high impacts upon realisation, as remarked by Bonfim and Kim in their in paper. This illusion makes it easy for banks to overlook the probability of liquidity risks during good periods.

This view is supported by the Basel Committee in their publication on “Liquidity Risk Management and Supervisory Challenges” in 2008. In it, they outlined the omission made by many banks, in failing to take into account a number of basic principles of liquidity risk management when liquidity was plentiful. For example, the paper accounts how that many of the most exposed banks (during the financial crisis of 2008), did not have an adequate framework that satisfactorily accounted for the liquidity risks posed by individual products and business lines. This therefore resulted in incentives at the business level being misaligned with the overall risk tolerance of the banks. Their findings further revealed that many of these 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 (Basel Committee, 2008).

In a similar submission by Rochet (2004), he argues that in the anticipation that there could be a bail-out in a time of distress, banks take excessive risk, which could prove fatal if the expectation turns otherwise. Thus Allen and Gale (2004a, 2004b) show that liquidity risk regulation is necessary when financial markets are incomplete, though emphasising that all interventions inevitably create distortions. Ex-ante regulation of bank's liquidity is the way forward, which is shared by authors like Acharya et al. (2011); Brunnermeier and Pedersen (2009); Cao and Illing (2010); Holmstrom and Tirole (1998); and Tirole (2011).

Traditionally, (liquidity) reserve requirements on bank deposits were the main tool for liquidity risk management (Robitaille, 2011), though now a remarkable progress has been achieved during the last few years, with respect to reaching an optimal regulatory framework to mitigate liquidity risk. For example, deposit insurance is now being seen as an important tool in preventing depositors' bank run in many countries, with the belief that it can sustain runs on bank deposits, as shown by Diamond and Dybvig (1983), though it has had its own criticisms due to its limitations (Ioannidou and Penas, 2010; Martin 2006). Now given the fact that banks have a more diversified sources of funds (Stratan, 2008), other regulatory mechanisms or instruments must be envisaged, in order to ensure the correct alignment of incentives.

More recent attention and discussions have shifted to the suggestion of further increasing the capital requirements of banks to also include liquidity risks ((Brunnermeier and Pedersen, 2009; Diamond and Rajan 2001), but this has also had its fair of criticism. Ratnovski (2007), argues that funding liquidity risk is partly related to asymmetric information on bank solvency,

thus increasing solvency without decreasing the problem of asymmetric information would not have a significant reduction on refinancing risk.

A number of literature also discuss the importance of holding a liquidity buffer as a way of mitigating liquidity risk. In 2009, Ratnovski published a paper in which he demonstrated the trade-offs between the imposition of quantitative requirements on banks' liquidity holdings and the improvement of the incentive scheme in lender of last resort policies. He explained how quantitative requirements could actually achieve the optimal liquidity level, but not without imposing costs, and also argued that comparatively, a lender of last resort policy which factors in bank capital information could reduce distortionary rents, which allow for a more efficient solution. However, transparency seems to play a critical role, with respect to the lender of last resort policy, as discussed in his previous paper (Ratnovski, 2007). Numerous studies have also suggested the possibility of imposing minimum requirements in terms of liquid assets. (For example Acharya et al., 2011; Allen and Gale, 2004a and 2004b; Farhi et al., 2009; Tirole, 2011 and Vives, 2011). On the contrary too, Wagner (2007) shows that holding more liquid assets could rather weaken the risk position of banks.

Further contributions in this field indicate that central banks can manage interest rates so as to cause banks to hold more liquid assets (Freixas et al., 2011), whereas Cao and Illing (2011) also indicate that the imposition of minimum liquidity standards for banks (ex-ante), is key, if we want prudential lender of last resort policies.

The general consensus now has been to develop a new international regulatory framework based on an imposition of minimum holdings of liquid assets. Prior to the financial crisis, it appears that liquidity risk regulation was overlooked, as established by the Basel Committee (2008) as well as Rochet (2008). For example, Basel shows many banks had made an omission by failing to take into account a number of basic principles of liquidity risk management when

liquidity was plentiful. The outcome of their investigations, as well as that of others made it clear how that a new and internationally-recognised regulatory framework was needed. Thus this same Basel Committee in 2010, released the final version of the international framework for liquidity risk regulation (Basel committee 2010).

2.5.4 Lender of last resort

Now in the case when regulation fails to address liquidity risks preemptively, the lender of last resort comes in. From earlier discussions, it could be seen that the general consensus has been for central banks to lend to banks (though at penalty rates), to solvent but illiquid banks. The problem however is distinguishing between solvency and liquidity problems (Bonfim and Kim, 2012). Again there is the issue of moral hazard, on the part of the borrowing banks, as shown by Freixas et al. (2004) and Ratnovski (2009). That is to say that if the banks know that their central banks will come to their aid in times of crisis, there is the tendency to engage in more risky ventures or behaviours (Gonzales-Eiras, 2004). Thus while the banks usually hold liquid buffers to handle unanticipated outflows, they may not hold enough, given the above preamble (Yan, 2013).

The absence of a central bank intervention could lead banks into the fire-sales of illiquid assets (that is a sale of goods or property at low prices) and bank failures in more severe cases (Yan, 2013). These events as also seen, could have a spillover effect (contagion) on other banks and even the economy largely (Muguomba et al., 2013). As a result, banks which find themselves in such conditions are compelled to turn to the central bank to restore their lost short term funding.

Yan (2013) also discusses two broad types of policy tools which are used to deal with liquidity-based market failure. The first he mentions, is the after-the-fact intervention, which involves a deposit insurer (who guarantees some of a bank's liabilities) or a central bank, which acts a

lender of last resort. The second method he mentions is liquidity regulation, where banks are required to maintain an adequate level of liquidity resources at all times.

The central bank certainly has the role of providing market liquidity during times of financial stress, however Yan is of the view that an overgenerous provision of liquidity (as in the case of the Bank of England), could lead to a problem of moral hazard and an excessive exposure to liquidity risk.

2.5.5 Liquidity Regulation of Financial Institutions in Ghana

Some central banks prescribe the level of liquidity ratio, while others do not. Many countries set minimum liquid asset reserve requirements, in order to strengthen their monetary policy. Setting a minimum ratio of liquid reserve assets to deposits actually limits the ability of depository institutions (such as banks), to expand their lending, whereas it serves as a tool for controlling money supply by the central bank (Saunders and Cornett, 2008).

In Ghana, the Central Bank (Bank of Ghana) prescribes that a bank should hold liquid assets of a specified amount and composition, either as a percentage of all the bank's deposits liabilities or in any other manner and different percentages for different classes of deposits or assets, as the bank may determine. Thus liquidity requirement for banks in Ghana is not standardised (Incoom, 2010).

However, the Banking Act, 2004, sought to refine the earlier regulations, with particular reference to bank licensing, capital adequacy and bank liquidity. The afore-mentioned issues had gained preeminence over time because prior to that, and in the early 2000's, a number of individuals and companies flooded the financial market to open banks and non-financial institutions. Thus there was the need to deal with the regulation of the banking system, to ensure compliance with standards as well as stability in the market (ibid.).

The Central Bank of Ghana is responsible for the regulation and supervision of all the commercial banks and non-banking financial institutions in the country, to help achieve a sound efficient banking system in the interest of depositors and other customers of these institutions and the economy as a whole.

Banks, non-bank financial institutions, and forex bureaus in Ghana operate under certain legislatures. These include:

- The Bank of Ghana Act 2002, Act 612
- The Banking Act 2004, Act 673
- The Banking (Amendment) Act 2007, Act 738
- The Companies Act 1963 (Act 179)
- Financial Institutions (Non-Bank) Law 1993, PNDC Law 328

Finally, to enhance the legal and regulatory framework of the Central Bank, the supervisory Bank of Ghana are aligned with the Basel Core Principles for effective Banking.

2.6 Empirical Review of Liquidity Risk Management in Financial Institutions

This sub-section presents some empirical findings on liquidity risk management in different financial institutions, thus emphasising the need for proper liquidity risk management.

Ismael (2010) conducted a research on the management of liquidity risk in Islamic Banks in Indonesia. Using a triangulation method together with a combination of quantitative and qualitative research approaches, the study sought to analyse liquidity risk management in these banks as well as gain information on the perception of banking depositors and Islamic bankers. Industry performance analysis and econometric time series analysis were conducted to analyse liquidity risk management for Islamic banking. Furthermore, primary data collection was done through questionnaire surveys, targeted at Islamic bankers and depositors. The findings

indicated that conventional Islamic banks are exposed to several risks, which affects their operations and performance. Paramount among these risks was liquidity risk, which indicated that the need for a comprehensive liquidity risk management program, especially one based on Sharia guidance and international banking practices.

Asongu (2013) also conducted a research on post-crisis bank liquidity risk management disclosure. The research was aimed at investigating the post-crisis measures banks had taken after the recent global financial crisis, in order to manage their liquidity risk. As already seen, liquidity risk management disclosure became critical for sustaining the confidence of the stakeholders of the economy at that time. Specifically, the study sought to examine the extent to which the Basel II pillar 3 disclosure on liquidity risk management was being applied by 20 of the top 33 world banks. Sampling of the banks was based on the availability information, the ease with which the information provided could be understood as well as ensuring balance geographically. The outcome of the study revealed that only 25% of the sampled banks provided information on liquidity risk management to the public, signaling that majority of the top ranking banks were still not fully complying with the Basel disclosure.

Kimathi et al. (2015), conducted a survey of 96 employees drawn from 6 Microfinance Institutions in Kenya, in order to access the factors affecting liquidity risk management practices in the MFI's in Kenya. The study concluded that internal controls, institutional policies, board oversight and risk monitoring significantly affect the liquidity risk management practices of these MFI's. However, the study also recommended that there was the need for established MFI's to document their local strategies used in managing their liquidity risk, as well as introduce computerized financial management systems in order to make their internal control systems more effective, as these have a positive impact on their liquidity risk management practices.

Finally, Kabamba (2012), conducted a research on liquidity management and growth of microfinance institutions in Uganda, mainly targeted at how liquidity management strategies and growth of these MFI's are related. Using both primary and secondary data, the study revealed that a proper a proper management of liquidity leads to a reduction in associated costs such as loss of public confidence and high operational and administrative costs. Thus, the research concluded that liquidity management and growth of MFI's had a positive relationship

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the type of design that was used in carrying out the study and also describes the processes and procedures that were adopted to collect and analyse data for the study. The study was conducted to assess the liquidity risk management practices in selected financial institutions, specifically in the Kumasi metropolis. It delved into the current liquid risk management practices of these institutions; identifying the factors that affect liquidity risk management practices as well as the strategies that are instituted to monitor and control liquidity risk in banks. It further went to examine the benefits of proper liquidity risk management practices to the growth of these institutions and then the challenges they face in doing so.

Branch managers, operations managers and risk managers of the respective institutions were chosen as the key respondents as they had the technical and practical knowledge and skills to help in the assessment.

3.2 Research Design

For the purpose of this research, the case study approach was adopted. The case study strategy was relevant as the researcher sought to gain an understanding of the ‘what’, ‘why’ and ‘how’ of the research problem (Eisenhardt and Greabner, 2007). Precisely, a multiple case study was carried out, involving twelve (12) financial institutions, to allow for comparison and also determine whether the findings could be replicated across the institutions (Yin, 2009).

Again, the research was designed to be both quantitative and qualitative in nature. Saunders et al. (2012) describe a qualitative study as one in which the data collection technique or data analysis procedure generates non-numerical data. They also explain a quantitative study as one

in which the data collection technique and so on use numerical data. Given the nature of the study to be carried out, it was imperative that both qualitative and quantitative approaches be used to gather and analyse the data required for the study.

Furthermore, the study relied on exploratory research methodologies to help in adequately finding out the current liquidity risk management practices undertaken by the various institutions. Explorative studies are valuable when one wants to ask open questions in order to find out what is happening and thereby gain helpful insights about the problem under study (Saunders et al., 2012). In this situation, the branch managers were interviewed to solicit the necessary data.

3.3 Population

Isaac et al. (1990) also stress the need for a researcher to describe the population so well in order not to leave readers in doubt as to who is qualified or not qualified to be a part of the study.

For the purpose of this research, the population was chosen to be all financial institutions in the Kumasi Metropolis, excluding the mainstream commercial/universal banks. Thus, the institutions under study may be referred to as '*non-universal banking*' financial institutions. The researcher particularly focused on Rural and Community Banks, Savings and Loans Companies, as well as Microfinance Institutions (specifically, deposit- taking institutions) in the Kumasi metropolis.

3.4 Sample Size and Sampling Techniques

For many studies conducted, it may be impossible to collect and analyse all the potential data available due to restrictions of time, money and even access. For this reason, sampling techniques are employed to allow the researcher reduce the amount of data needed to be collected, by considering only the data from a sample rather than a population (Saunders et al.

2012). Becker (1998) also emphasises that in selecting a sample to study, it should represent the full set of cases in a meaningful and justifiable way.

For the purpose of this research, non-probability sampling was adopted. Non-probability sampling is more concerned with the relationship between the sample selection technique and the purpose or focus of the research. Consequently, the sample size is dependent on the research questions or objectives, particularly the data needed, what will be useful and credible, as well as what can be done with the available resources (Patton 2002), particularly when one intends collecting qualitative data using semi or unstructured interviews.

To be more precise, two sampling techniques were employed in this study. First, in considering which financial institutions to include in the study, a convenient sampling technique was used. This technique was employed to help the researcher concentrate on financial institutions that were willing to be used as cases for the study. In all, twelve (12) of these institutions were used. These included four (4) Rural and Community Banks, four (4) Savings and Loans Companies, and four (4) Microfinance Institutions, which are listed in table 3.1 below.

Table 3.1: List of Financial Institutions used in the study

Rural and Community Banks	Savings and Loans Companies	Microfinance Institutions
Atwima Kwanwoma Rural Bank Ltd.	Union Savings and Loans	Secure Capital Microfinance Ltd.
Asokore Rural Bank Ltd.	First Trust Savings and Loans	Melbond Microfinance Ltd.
Amanano Rural Bank Ltd.	First African Savings and Loans	Dwadifo Adanfo Microfinance Ltd.
Juaben Rural Bank Ltd.	Beige Capital	VOA Microfinance Ltd.

Source: Field Study (2015)

In selecting the informants however, a purposive sampling technique was employed. As explained by Neuman (2005), this sampling method is often used when working with a small sample size (e.g. case study) and especially when the researcher wants to select cases which are particularly informative. For this reason the researcher chose the branch managers (for

interview purposes), and then the branch managers again, operations managers and risk managers, as well as other knowledgeable staff of the selected institutions to help fill the questionnaires. For each, institution, three (3) respondents were chosen, making a total of thirty-six (36) respondents from the twelve institutions.

3.5 Sources of Data

The research involved the use of only primary data. Access to secondary data in the form of financial statements, from the institutions for the purpose of analysis proved unsuccessful. The reason for this was that the institutions used for this study were mostly private institutions and were reluctant to give out their financial statements. Therefore the researcher relied basically on primary data for analysis.

The primary data was obtained by using questionnaires as well as conducting interviews with the branch managers of the selected financial institutions. As key respondents, branch managers are in the best position to explain the reason for the choice of certain liquidity risk management practices as well as certain strategies that are instituted to monitor and control liquidity risk their respective institutions. Privy to such information could only be obtained from the branch managers (though some information was confidential, and as such, the managers could not disclose them to the researcher).

3.6 Data Collection Instruments and Techniques

The main data collection instrument employed for collecting the primary data was the questionnaire guide. The questionnaire was made up mostly of closed-ended items, which were assessed on a five-point Likert scale, ranging from 1=strongly disagree, through 3=neutral, to 5=strongly agree. The only item which included an open-ended option was the position of the respondent in the institution. The items on the questionnaire were categorised under three main sections, to measure the following objectives: (1) the factors that affect liquidity risk

management practices, (2) strategies that are instituted to monitor and control liquidity risk in these institutions, and (3) the benefits of proper liquidity risk management practices. The last section was used to measure some demographics. Moreover, the questionnaire was inspired by the works of previous authors which measured similar constructs in their studies, as well as other related literature. These included ICAEW (1999), Basel Committee (2008), Council, F. R (2014), Kabamba (2012) and Kimathi et al. (2015).

To aid in the data collection process however, an interview guide was developed. This was mainly targeted at meeting the last research objective, which was on the challenges faced by the institutions in managing their liquidity risk. The researcher conducted interview sessions with branch managers who were willing and had the time to do so. Those who could not grant the researcher an interview were nonetheless given an open-ended questionnaire which contained the same questions as captured in the interview guide. By so doing, the researcher was able to fetch equivalent qualitative data at the convenience of the respondents. The questionnaires and interviews guides upon completion, were then retrieved by the researcher.

3.7 Data Analysis

Given the nature of the study, both qualitative and quantitative data analytical tools and procedures were employed. Data collected with the questionnaire was analysed quantitatively, using the Statistical Package for Social Sciences (SPSS) IBM version 20. In all, two broad steps were followed in this respect: descriptive and exploratory data techniques. Specifically, frequencies and percentages were used to describe the demographic data taken, whereas other descriptive statistics such as the means and standard deviations were used in addressing the first three objectives of the study. Furthermore, a one-way analysis of variance (ANOVA), together with means plots were used to explore the data to ascertain if there exists any significant difference in the results obtained, across the three groups of institutions studied.

Data collected through the interviews on the other hand were analysed qualitatively. In doing this, thematic issues raised by the respondents were identified and categorised. The necessary discussions were then made around these themes.

3.8 Quality of the Study and Ethical Considerations

In enhancing the quality of the study, adequate efforts were made to ensure that the data collection instruments identified and developed for the study actually help in collecting data that address the needs of the study. Further, the researcher relied on only key informants who possess information that were relevant to the study.

In ensuring that research standards were adhered to, the researcher only included institutions that were willing to participate in the study. Prior to the field study, introductory letters explaining the purpose of the study were sent to the identified institutions seeking their consents for the study. In the case of those who gave the approval, the researcher had talks with the management to help in identifying and seeking for the willingness of the key informants to help cooperate in the study. Lastly, the management of these firms were assured that the study was only academic-oriented and as such the data collected would be used in addressing the needs of the study. Accordingly, these data collected were used as such.

3.9 Brief Profile of the Microfinance Industry in Ghana

History has it that the first credit union in Ghana was established in 1955, in the north. This also happens to be the first in Africa, and was established by the Canadian Catholic Missions (Asiama and Osei, 2007). From that point onwards, the microfinance industry has evolved tremendously to its current state, via various financial sector reforms undertaken by successive governments.

These reforms have included the following: for example, in the 1950's the government began making subsidised credits available, whereas in the 1965, the Agricultural Development Bank

was established, with the sole aim of helping the fisheries and agricultural sector at large with the needed finances. Moving on, Rural and Community Banks began to be established, alongside the introduction of regulations on commercial banks to set aside portions of their portfolio to cater for the lending needs of the agriculture and small scale industries. These transformations occurred in the 1970's and 1980's. In addition to that, the country shifted from a more restrictive financial regime to a more liberalized one, as well the endorsing the PNDC Law 328 in 1991, which gave way for the formation of the now-existing diverse categories in the non-bank financial sector. These categories included the Savings and Loans Companies and Credit Unions (Asiama and Osei, 2007).

Three broad categories of microfinance institutions have over the years emerged in our economy. These categories are as follows:

- i. Formal suppliers of microfinance: These include Rural and Community Banks, Savings and Loans Companies and some commercial banks. This group is also classified as Tier 1 activities, and are regulated under the Banking Act, 2004 (Act 673). Other tiers include Tier 2, 3 and 4.
- ii. Semi-formal suppliers of microfinance: These include credit unions, financial non-governmental organisations and cooperatives.
- iii. Informal suppliers: Examples of these are “susu” collectors and clubs, rotating and accumulating savings and credit associations (ROSCA's and ASCA's), traders and moneylenders. (ibid.).

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

The study sought to mainly explore the current liquidity risk management practices being followed and exercised by selected financial institutions in the Kumasi metropolis. The previous chapter dealt with the methodology used in carrying out the research. This chapter on the other hand, focusses on the data analysis techniques employed in analysing the data collected as well as presenting the results and findings. The discussions on the findings herein were done in relation to the research objectives as well as reviewed literature.

4.2 Summary of Data Collected and Firms Background Information

As already mentioned in the previous chapter, the study used a total of twelve (12) financial institutions, comprising four (4) Rural and Community Banks, four (4) Savings and Loans Companies, and four (4) Microfinance Institutions. By using a purposive sampling technique, three (3) respondents were selected from each institution, making a total of thirty-six (36) respondents in all. The profile of the respondents used in the study are provided in the tables below.

Table 4.1a: Number of respondents from each institution

Institution type	No. of respondents	Percent
Rural and Community Bank	12	33.3
Savings and Loans Company	12	33.3
Microfinance Institution	12	33.3
Total	36	100.0

Table 4.1b: Summary of the positions of respondents

Position	Frequency	Percent
Branch manager	6	16.7
Operations manager	9	25.0
Risk manager	0	0.0
Other	21	58.3
Total	36	100.0

Table 4.1c: Length of service of respondents in institution

Length of service	Frequency	Percent
Less than 1 year	7	19.4
1-3 years	18	50.0
4-6 years	8	22.2
7-9 years	2	5.6
Total	35	97.2
Missing	1	2.8
Total	36	100.0

Source: Field study (2015)

Table 4.1a - c show that of the 36 respondents who participated in the study (by helping fill the questionnaires), 6 of them were branch managers, 9 were operations managers, and the remaining 21 (58.3%) held other positions such as credit officers, investment and portfolio managers or tellers. However, it is interesting to note that none of the respondents were risk managers. That is, none of the institutions visited had a risk manager at post at that particular branch. A more detailed description of the respondents from each of the institution types and their positions are given in the figure below.

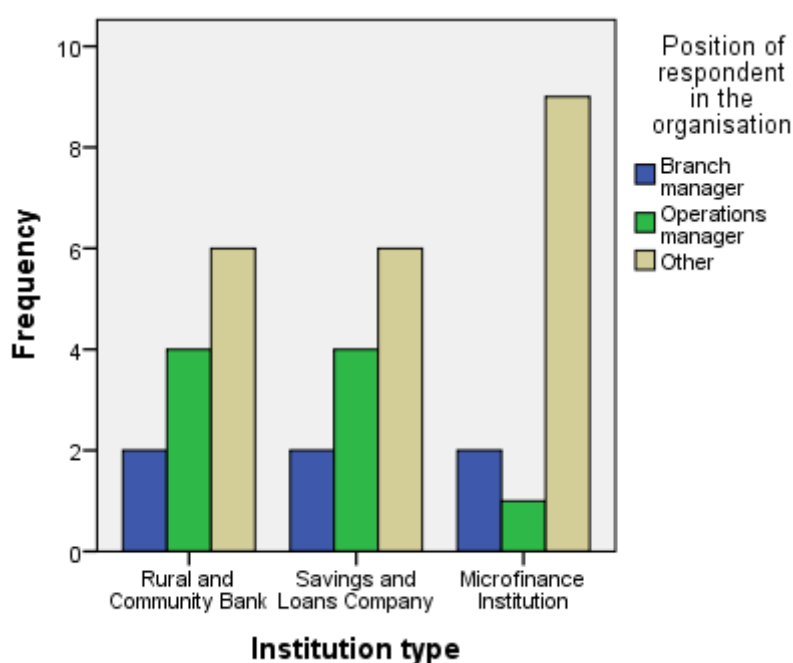


Figure 4.1: Respondents in each institution

Source: Field study (2015)

Again, data collected on the length of service of the respondents in their respective institutions indicated that 7 (19.4%) of them had been with their institution for less than a year, with 18 (50%), having had 1-3 years' experience, and the remaining 10 (27.8%) having had at least 4 years' experience with their respective institution.

4.3 Factors that Affect Liquidity Risk Management Practices

In relation to the general objective of the study, the first objective of the research was to assess the factors which affect liquidity risk management practices in the selected financial institutions. Such factors were considered and analysed from broad perspectives (ICAEW, 1999; Council, F. R, 2014; Basel Committee, 2008). For the purpose of this research however, two of these factors were considered, namely: internal control systems and institutional policies.

In examining these factors, the researcher employed a 5-point Likert scale, ranging from 1=strongly disagree, through 3=neutral, to 5=strongly agree, to measure each item. The results from this assessment are shown below. It should be noted that all means in the tables are arranged in descending order.

4.3.1 Internal Control Systems

As part of the first objective, the researcher sought to assess the internal control systems in place in these institutions, which help them manage their liquidity risk. The findings on the internal controls applied are as shown in Table 4.2a. Given the scale employed in measuring the items, the results indicate that generally, the institutions agree that their internal control systems affect their liquidity risk management practices (given that the mean scores for three out of the four items assessed were above 4.00, which represents 'agree').

Specifically, the means greater than 4.00 were obtained on items such as: the adequacy of internal control systems (M=4.53; SD=0.654), periodic reviews to ensure compliance (M=4.53; SD=0.609), conducive working environment (M=4.39; SD=0.838). However, on the

item of whether internal controls affect the amount of money available for customers' needs, the mean was 3.31 (SD=1.431), which presupposes that these institutions are near neutral or indifferent with respect to this item. To confirm this notion, it can be observed from the standard deviation (SD=1.431), which is relatively the highest in the group, that there was a greater variability in the responses among the institutions, with respect to whether internal controls affect the amount of money available for customers' needs. On the overall however, the average financial institution used for the study provided a mean of 4.19, with a standard deviation of 0.565, for all the four items measuring internal control systems, which imply that liquidity risk management practices of these institutions are to a large extent affected by their internal control systems.

Table 4.2a: Internal Control Systems

Measures	N	Min	Max	Mean	Std. Dev.
1. There are adequate internal control systems (e.g. Accounting records, Information systems) in place to identify and control the amount of money available for customers' needs	36	3	5	4.53	.654
2. There are periodic reviews (including internal audits) to ensure that staff are complying with these systems	36	3	5	4.53	.609
3. The working environment is conducive to ensure that staff abide by these systems	36	2	5	4.39	.838
4. Internal controls affect the amount of money available for customers' needs	36	1	5	3.31	1.431
OVERALL	36	2.5	5.0	4.19	.565

Source: Field study (2015)

A further comparison of these results to the work of Kimathi et al. (2015), shows similarities, where majority of the respondents in that study also agreed that internal controls affected their liquidity risk management practices. Internal controls involve periodic reviews of the liquidity risk management processes of the institutions by their internal audit department, as well as an Asset-Liability Committee (ALCO), in order to identify any problems or weaknesses in their system. This is in line with the requirements of the Basel Committee (2008), as well as the

Financial Reporting Council (2014). Thus any indications or positions which transcend established limits should be addressed immediately according to the stipulations of the policies. To add to that, it is worth noting that internal controls are effective when there is a conducive working environment, which ensures that there is a strict adherence to the liquidity risk management policies in place. To this, it can be seen from the findings in Table 4.2a that majority of these institutions ($M=4.39$; $SD=0.838$) agree that it is so in their respective institutions.

Finally, an analysis of internal controls with respect to the positions of the respondents indicates that the branch managers (especially in the Rural and Community Banks) generally agree the most, that internal controls affect the liquidity risk management practices of their institutions, as shown on the figure below.

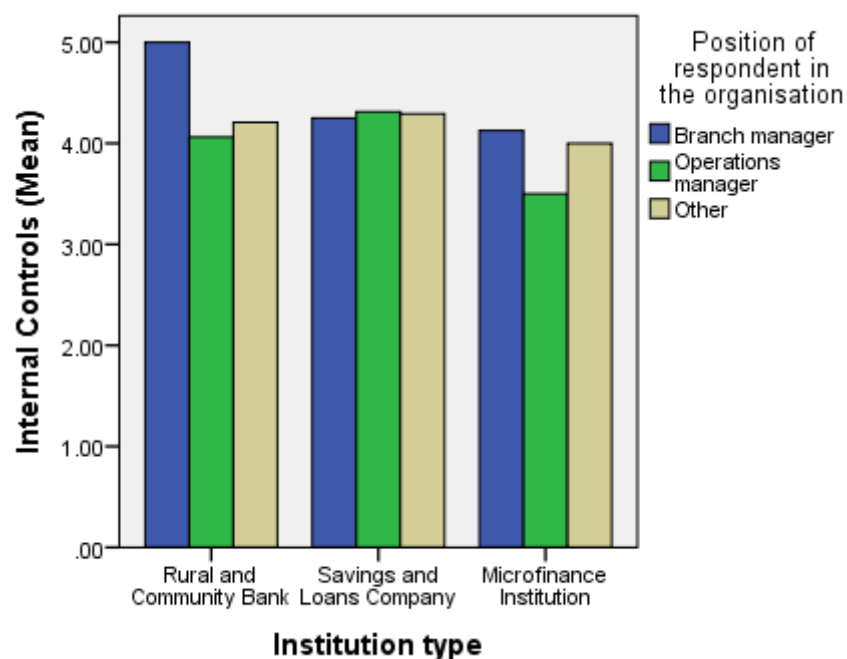


Figure 4.2: Internal controls vs. position of respondents
Source: Field study (2015)

In conclusion, it can be said that the liquidity risk management practices of these institutions are to a large extent affected by their internal control systems.

4.3.2 Institutional Policies

The second factor considered in this study was institutional policies. This is one of the factors the Basel Committee (2008) requires firms to relate their liquidity risk management to. Policies are written statements which show an institution's commitment to pursue certain goals and objectives, by setting standards and courses of action. They are intended to clearly specify the institution's mission, values and principles, as well as defining how daily activities are to be carried out (Kimathi et al., 2015). The findings on institutional policies are presented in the ensuing discussions and in Table 4.2b.

Per the results shown in Table 4.2b, it can be said that the average institution which participated in the study agrees to the presence of institutional policies which guide them in the management of their liquidity. The items examined include: the presence of specific policies on liquidity management (M=4.53; SD=0.736), adequacy of policy to cater for cash shortages (M=4.39; SD=0.766), presence of Asset-Liability Committee (M=4.36; SD=0.867), clarity of staff roles (M=4.00; SD=0.926). The overall mean score (M=4.32; SD=0.572), which was obtained for the four items was above 4.00 and indicate that generally there are institutional policies in place to help manage liquidity risk in the selected financial institutions.

Table 4.2b: Institutional Policies

Measures	N	Min	Max	Mean	Std. Dev.
1. There are specific policies on how to manage your cash in order to meet customers' needs	36	2	5	4.53	.736
2. The policy ensures that there is access to adequate cash to meet customers' needs in times of a shortage	36	3	5	4.39	.766
3. There is a team that evaluates, monitors and approves practices relating to risk (Asset-Liability Committee)	36	2	5	4.36	.867
4. The policy clearly indicates the role of every staff involved in managing customers' deposits/cash	36	1	5	4.00	.926
OVERALL	36	2.5	5.0	4.32	.572

Source: Field study (2015)

The findings of this section are no different from the study of Kimathi et al. (2015), which was conducted on selected Microfinance Institutions in Kenya. With respect to institutional

policies, majority (81.9%) of the respondents in that study also agreed to the presence of institutional policies which guide their liquidity risk management. A further analysis showed a mean of 4.28 with respect to the presence of an Asset-Liability Committee (ALCO), which is normally a risk management committee in a bank or lending institution comprising senior managers, and with the goal of evaluating, monitoring and approving risk management practices (Singh and Tandon, 2012), whose duties are clearly outlined. The overall finding gave a moderate rating on the liquidity risk management policies (institutional policies) available, which is similar to the findings of this study.

Again, an analysis of institutional policies with respect to the positions of the respondents revealed that irrespective of their positions, most of them largely agree that institutional policies affect the liquidity risk management practices of their institutions.

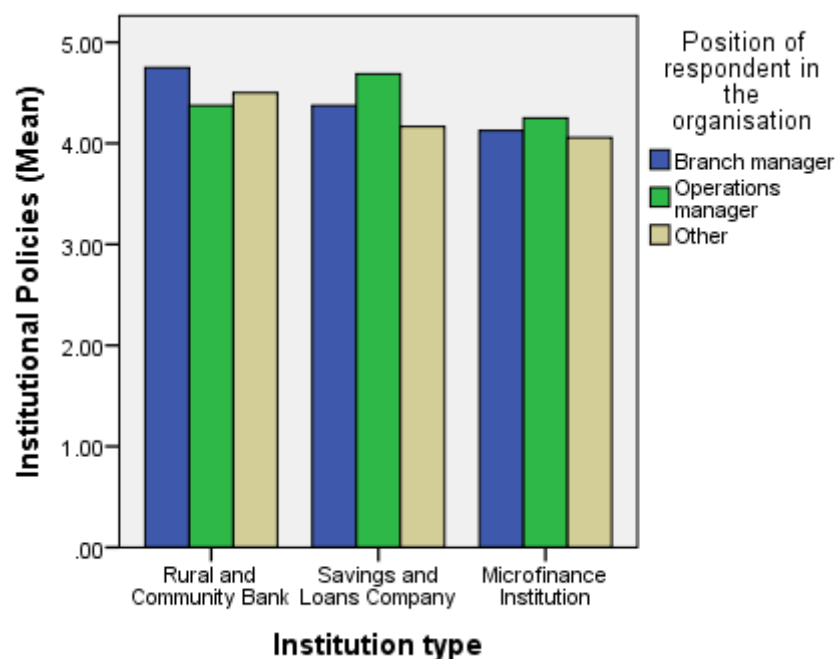


Figure 4.3: Institutional policies vs. position of respondents
Source: Field study (2015)

Thus in conclusion, it could be perceived that institutional policies play a major role in the liquidity risk management practices of these financial institutions used for this study.

4.4 Strategies that are instituted to Monitor and Control Liquidity Risk

The second objective of the study was to identify the strategies that are instituted to monitor and control liquidity risk in these institutions. Traditionally, banks (and similar financial deposit-taking institutions) are mandated to maintain a certain level of liquidity in order to serve both regular and irregular demand for liquidity from depositors (Basel Committee, 2008; Ismal, 2010). This and many other strategies are implemented in order to mitigate the possibility of a liquidity risk.

Here again, the researcher employed a 5-point Likert scale, ranging from 1=strongly disagree, through 3=neutral, to 5=strongly agree, to measure each item. The findings on some of these strategies (which to these institutions are also their practices) are presented in the discussions and Table 4.3.

Per the results from the table, four items had a mean greater than 4.00, with the remaining two items having a mean less than 4.00. Specifically, it was found that the average financial institution which participated in the study agrees to a large extent that there are proper strategies in place for managing the cash available for customers ($M=4.50$; $SD=0.811$). As already seen, it is required of these institutions to have proper policies in place which must also include guidelines on liquidity risk management (Basel Committee, 2008). The other results are maintaining a minimum cash balance as core ($M=4.33$; $SD=0.926$), preparing cash flow projections ($M=4.28$; $SD=0.566$), clarity of strategies for staff to understand ($M=4.08$; $SD=0.604$), use of customers' savings as a source of funding ($M=3.56$; $SD=1.081$), and setting limits on savings withdrawals ($M=3.26$; $SD=1.597$). The overall mean score for these set of items was 4.00 ($SD=0.5363$), implying that the institutions generally agreed that they were implementing the strategies which were examined.

Table 4.3: Strategies to monitor and control liquidity risk

Measures	N	Min	Max	Mean	Std. Dev.
1. There are proper strategies for managing cash available for customers	36	1	5	4.50	.811
2. We maintain a minimum cash balance as a core	36	1	5	4.33	.926
3. We prepare cash flow projections	36	3	5	4.28	.566
4. These management strategies are good/clear enough for staff to understand	36	2	5	4.08	.604
5. Savings of customers are also used as a source of funding	36	1	5	3.56	1.081
6. We set limits on savings withdrawals	35	1	5	3.26	1.597
OVERALL	35	2.50	5.00	4.00	.5363

Source: Field study (2015)

The results from the table show a high agreement to the presence of proper liquidity management strategies, which are necessary, in order to prevent or reduce the possibility of liquidity risk. Liquidity risk occurs when an institution is unable to meet financial obligations as they fall due (Rejda, 2008; Yan, 2013). In the case of the institutions considered in this study (Rural and Community Banks, Savings and Loans Companies, Microfinance Institutions), a liquidity risk could occur for example, when they are unable to meet their customers' demand for their deposits when due. This could be a bit problematic in the Ghanaian economy, as people mostly prefer to carry and use physical cash for their transactions, unlike the economies of some foreign countries. Thus the inability of such institutions to meet the withdrawal demands of customers immediately, could send negative signals through the populace, which could lead to panic withdrawals (runs).

The strategies include maintaining a minimum cash balance as a core (which had the highest mean of 4.33). This strategy, together with setting limits on savings withdrawals (which had the lowest mean of 3.26), focusses on the availability of cash and limiting the frequency of withdrawals by clients respectively. However, setting limits on savings withdrawals and the use of customers' savings as a source of funding (which had the second lowest mean score of 3.56), were found to be the least used strategies across the three different groups of financial institutions.

Relating these findings to other empirical studies elsewhere reveals interesting perspectives. For example, Kabamba (2012), conducted a similar study on microfinance institutions in Uganda. In assessing the liquidity risk management strategies in place, the results also indicated that the MFI's there practiced similar strategies. However, it is interesting to note that in Kabamba's study, 100% of the respondents agreed (strongly agree=75; agree=25%) that they set limits on savings withdrawals, and 95% of the respondents also agreed that customers' savings were used as a source of funding. Thus the empirical findings of Kabamba happen to be contrary to the findings of this study (with respect to these two items).

One reason for this disparity, was the explanation given by the branch manager of one Microfinance Institution. In an interview session with him, he disclosed to the researcher that gone are the days when banks used to set limits on the savings withdrawals of customers. He continued to say that the present intense competition within the banking sector has made it necessary for a lot of these institutions to become flexible with the frequency of withdrawal by their customers. This he said, has also compelled a number of Microfinance Institutions to adopt this strategy, in order to stay within the competition and not lose their customers to the mainstream universal/commercial banks. This however also raises issues on the sustainability of such a strategy on the part of Microfinance Institutions (MFI's), in view of their liquidity position. Per the requirements of the Bank of Ghana, MFI's are not as capitally adequate as the mainstream universal/commercial banks, which implies they need to more careful in managing the little funds available to them in order to meet their operational demands. Therefore the approach of not placing limits on customers' withdrawals may put them under undue liquidity stress, leading to untold consequences (researcher's opinion). Then again, most of these institutions were having the challenge of irregular and unpredictable withdrawals from their clients, thus the reason for their refraining from the use of customers' savings as a source of funding.

Finally, a further analysis of these strategies with respect to the positions of the respondents revealed that branch managers of the Savings and Loans Companies strongly agreed to the use of the strategies discussed above whereas the rest of the respondents were in agreement, but not to a very large extent as seen from the discussions above.

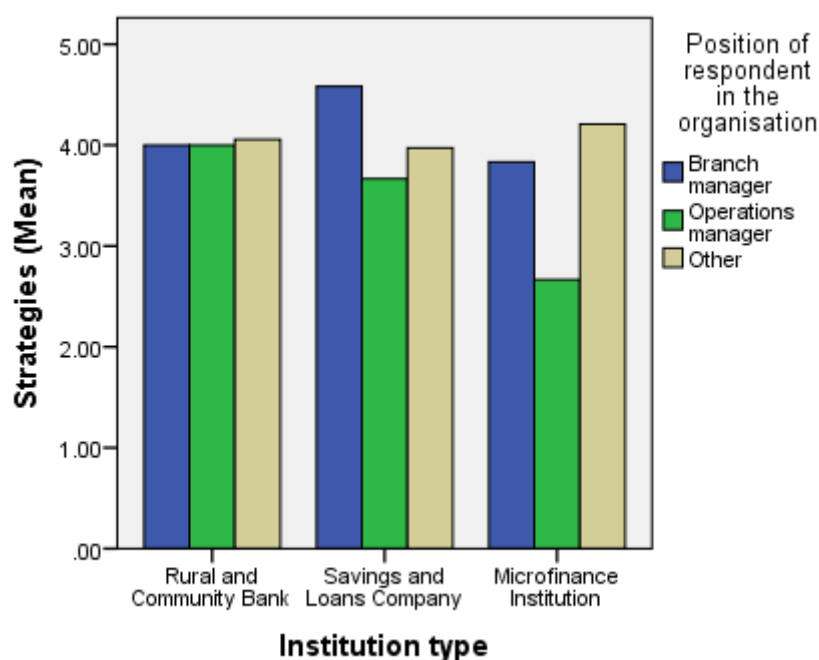


Figure 4.4: Strategies vs. position of respondents
Source: Field study (2015)

However in general, it can be seen that a number of strategies examined in this study are being employed by the institutions, but to different degrees.

4.5 The benefits of proper liquidity risk management on the growth of these institutions

The third objective of the study was to examine the benefits of proper liquidity risk management practices to the growth of these institutions. Holmstrom and Tirole (2000), describe firms as ongoing entities whose project completion may require continued liquidity inputs. For this reason, it is imperative that firms learn to manage their liquidity (funds) properly, by employing the appropriate strategies, in order to ensure a smooth flow of their businesses. This among other factors, contributes to the growth of financial institutions. The findings are presented in the discussions and Table 4.5a.

From the results, three items had a mean above 4.00. These were: an increase in the number of clients (M=4.36; SD=0.723), ability to cover operational costs (M=4.18; SD=0.459) and ability to charge competitive interest rates (M=4.14; SD=0.961). The others were: high employee-motivation (M=3.75; SD=0.906) and sourcing funds internally (M=3.32; SD=0.976), which had the lowest mean. The overall mean score obtained was 3.89 (SD=0.383), which generally indicates that liquidity risk management (to these institutions) has had not so much an impact on the growth of the institutions.

Table 4.4: The benefit of LRM to the growth of these institutions

Measures	N	Min	Max	Mean	Std. Dev.
1.Number of clients have increased	36	2	5	4.36	.723
2. We can cover our operational costs	34	3	5	4.18	.459
3. Interest rate charged is competitive sector-wise	36	1	5	4.14	.961
4. Employee-motivation is high, as operations run smoothly	36	1	5	3.75	.906
5. Major source of funding is obtained internally	34	1	4	3.32	.976
OVERALL	32	3.00	4.60	3.89	.383

Source: Field study (2015)

From table, it can also be observed that the measure on “major source of funding obtained internally” recorded the lowest mean (M=3.32), implying this is the least of the benefits to the institutions. This also goes to confirm the results obtained under the strategies (see 4.4), where the use of customers’ savings as a source of funding ranked among the lowest used strategies. That notwithstanding, the institutions used for the study also mentioned that they undertake various investment ventures as a source of funding; for example, investment in treasury bills, fixed deposits and loans, as well as other money and capital market funds. Thus they are not only dependent on customers’ funds which are highly volatile (liquid). This is very much in line with the opinion of Ismal (2010) who purports that an over-reliance on short-term debts (e.g. customers’ deposits) leaves banks and similar financial institutions without adequate protection from a financial distress, given that depositors could come for their monies at any time. This therefore calls for a proper asset-liability management on the part of the institutions.

In addition to that, 81.1% of the respondents (agree= 47.2%; strongly agree = 38.9%), acknowledged that a proper management of their liquidity has led to an improvement in the amount of funds available as loans for clients. This has furthermore enabled them to charge relatively lower but competitive interest rates on their loans. These and other benefits show that a proper management of liquidity has brought some benefit to the institutions, but not without challenges.

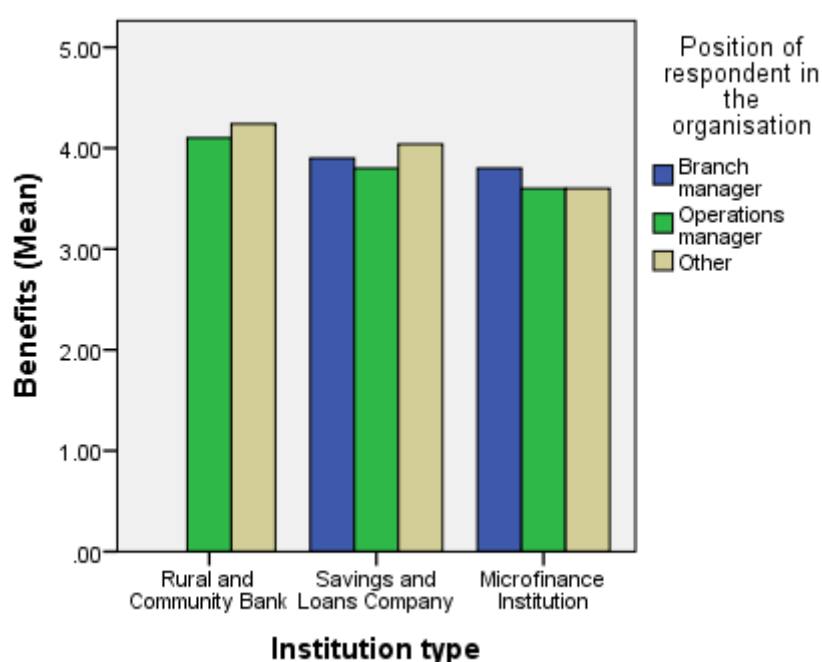


Figure 4.5: Benefits vs. position of respondents
Source: Field study (2015)

Similarly, the perceptions of the benefits of proper liquidity risk management to the institutions do not differ significantly with respect to the position of the respondents, as can be seen from figure 4.5 above.

4.6 Exploratory Data Analysis

For further analysis of the results obtained above, exploratory data analytical techniques were employed to explore the data to ascertain if there exists any significant difference in the results across the three groups (or types) of financial institutions used in this study (i.e. Rural and Community Banks, Savings and Loans Companies, and Microfinance Institutions). The aim of

this is to reveal helpful and unique insights about the pattern of practices across these groups of institutions. A one-way between group analysis of variance (ANOVA) and means plots were used in this wise.

In terms of internal controls across institution type, the means plot shown in figure 4.6 reveals that internal controls were highest in the Rural and Community Banks and the Savings and Loan Companies, with the Microfinance Institutions ranking least. However, at the significance level of 5%, the ANOVA test performed showed that there was no significant difference in internal controls across the three groups, given $F(2, 33) = 1.241$; $p = 0.302$.

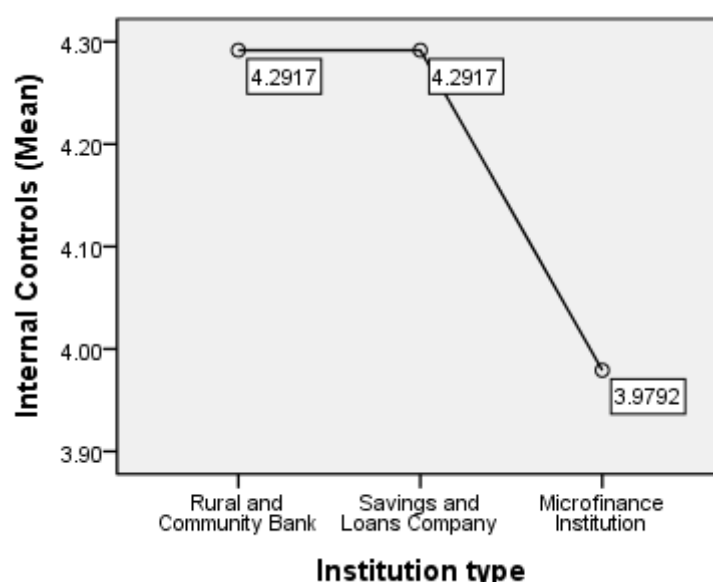


Figure 4.6: Internal controls across institution type
Source: Field study (2015)

The same analysis was done for institutional policies, where the means plot shown in figure 4.7 reveals that among the three groups, institutional policies affected the liquidity risk management of Rural and Community Banks the most ($M = 4.5$), followed by Savings and Loans Companies and then Microfinance Institutions. However, at the significance level of 5%, the ANOVA test performed again showed that there was no significant difference in terms of institutional policies across the three groups, given $F(2, 33) = 1.748$; $p = 0.190$.

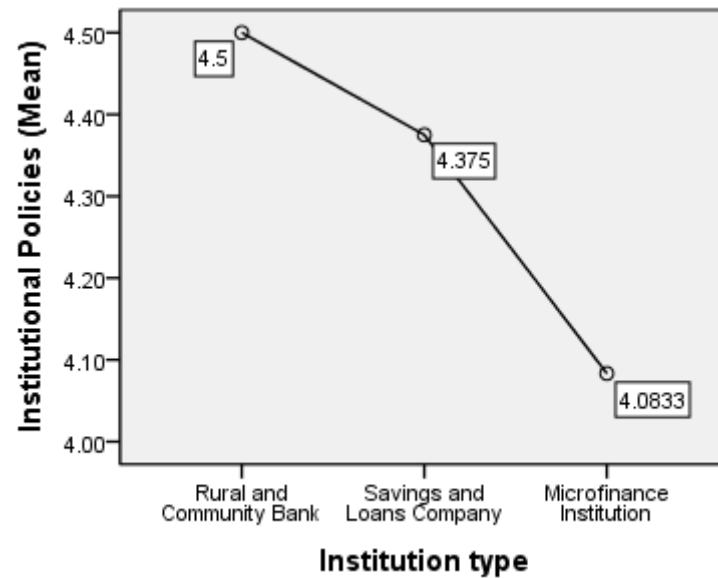


Figure 4.7: Institutional policies across institution type
Source: Field study (2015)

Also given in figure 4.8 is an evaluation of the liquidity risk management (LRM) strategies across the institution types, which revealed that the mean differences were not statistically significant at 5% [$F(2, 32) = 0.030$; $p = 0.970$]. The means plot is as shown, with Rural and Community Banks recording the highest mean, and the Savings and Loans Companies recording the least.

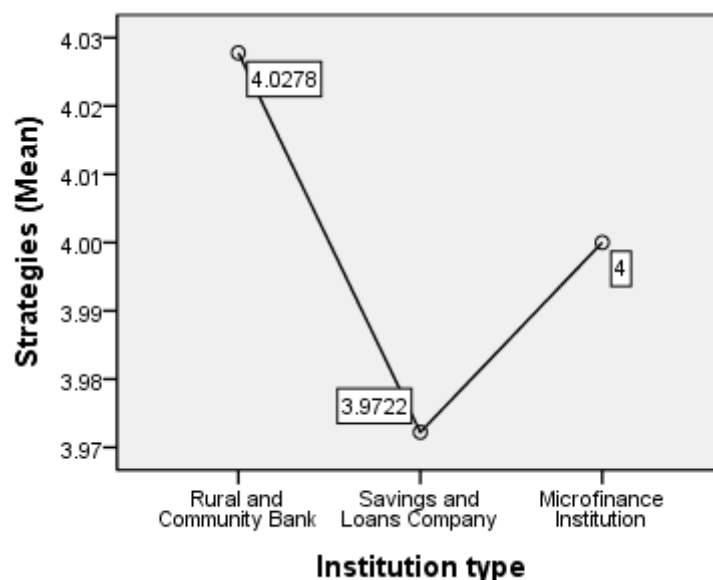


Figure 4.8: LRM strategies across institution type
Source: Field study (2015)

Finally, an assessment of the benefits of proper liquidity risk management (LRM) across the institution types (figure 4.9) showed that the mean difference between the Rural and Community Banks and the Savings and Loans Companies was not statistically significant at 5%. However the mean difference between the Rural and Community Banks and the Microfinance Institutions was found to be statistically significant at 5%, given $F(2, 29) = 7.486$; $p = 0.002$, which implies that proper liquidity risk management practices have brought more benefit to the Rural and Community Banks than the Microfinance Institutions.

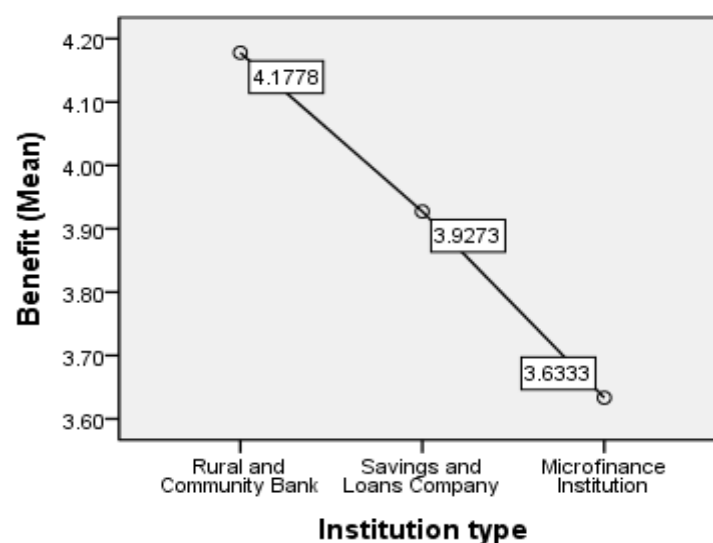


Figure 4.9: Benefits of proper LRM practices across institution type
Source: Field study (2015)

In conclusion, it can be said from the ANOVA tests that there exists no significant differences in the results obtained across the three groups of institutions. The only exception occurred between the Rural and Community Banks and the Microfinance Institutions with respect to the benefits of proper liquidity risk management, where the Rural and Community Banks had experienced more benefits.

4.7 Challenges faced by the institutions in managing their liquidity risk

The last objective of the study was to examine the challenges faced by the institutions in managing their liquidity risk. As already mentioned, liquidity risk occurs when an institution is unable to meet financial obligations as they fall due (Rejda, 2008; Yan, 2013), for example,

meeting customers' withdrawal needs. Holmstrom and Tirole (1998) also indicate that liquidity risk arises as a result of revenues and outlays not being synchronised. For this reason, it is imperative that firms learn to manage their liquidity (funds) so as to ensure a smooth flow of their businesses, but this though, does not come without challenges. Some of these challenges as encountered by the institutions studied, were uncovered through the interview sessions and are discussed below.

One extreme but very significant consequence of a poor liquidity management is a run on the institution (the situation where all the customers are seeking to withdraw their deposits for fear of the fact that the bank would not be able to meet their withdrawal demands in the future). A quick overview of the institutions used for this study revealed that 4 out of the 12 institutions had experienced a run since they began operations. These included two (2) Savings and Loans Companies and two (2) Microfinance Institutions. An interview with the branch managers of these institutions interestingly revealed that by coincidence, the runs they had all experienced had been as a result of runs on (or collapse of) similar institutions that had occurred in that same period. That is to say, runs on similar institutions across the country had caused a panic withdrawals in the four institutions made mention of above. This comes as no surprise considering the collapse of several microfinance institutions in the past few years (Ghana Business News, 2013; MicroCapital, 2013 and the City and Business Guide, as cited in Ghanaweb, 2013).

One respondent commenting on a run on their MFI cited, "...the collapse of some reputable banking institution caused a lot of panic and fear. We made cash available for customers who still wanted to withdraw, whilst we addressed and educated others who really understand the banking processes." A similar view was shared by another branch manager, who reported, "...the run was caused by the collapse of some financial institutions. The situation was however addressed through damage control as a crisis management practice or strategy." Thus a pattern

could be traced, which bores down to the fact that the failure/collapse/run on some financial institutions was the predominant cause of the panic withdrawals or run on the institutions under study here. This certainly is congruent with the assertion of Ismal (2010) that liquidity problems in one or few banks may lead to bank runs, and contagion to other banks, resulting in a serious loss of confidence in the banking system of the country (or more narrowly for this research, the '*non-universal banking sector*'). Muguomba et al. (2013) also shed light on this issue, by stressing that bank runs may lead otherwise solvent banks to experience large losses as they struggle to mobilize less liquid assets to meet liquidity risk. These losses could quickly erode the capital position of still weakly capitalized banks. These facts and findings furthermore go to show the interconnectedness of these financial institutions (thus the need for a more stringent supervision) and the need for a sound management of liquidity if banks are to continue to thrive and serve customers (Ismal, 2010), as well as give the average Ghanaian enough confidence in the banking system.

The second challenge a number of these institutions face has to do with their customers not informing them in advance before coming to make huge withdrawals. Most of these institutions reported that on countless occasions, some customers just walk in demanding to withdraw very huge sums of money, which to them has not been planned for in that day. As they keep vault limits for the day, based on predicted withdrawals, such unplanned demands from customers adversely affects their operations for the day, as well as their liquidity (i.e. how much cash is then available to serve other customers).

Ideally, in satisfying regular demand for liquidity, banks are required to maintain a standby account on the asset side of their balance sheet from which a pool of funds can be drawn from when needed (Ismal, 2010). However, in the case where there are unplanned for or unpredictable demands, there have to be innovative ways of going about it. In an interview with the branch manager of one Savings and Loans Company, he indicated that the challenge

comes when the institution is unable to immediately meet the demand of such clients. To the clients, this is an indication of a liquidity problem in the institution (as the customer's demand for funds is not being met out rightly), and could send a negative signal across to other customers. As a remedy to this challenge, the manager disclosed that it was crucial for them to know their customers very well (from the KYC - '*know your customer*' principle), which includes establishing very close and cordial relationships with key customers. In that way, customers who usually make huge withdrawals are encouraged to inform the bank in advance, so the necessary arrangements are made before hand, ensuring a smooth run of the business.

The third challenge, which was found peculiar to the Microfinance Institutions was that their customer base is mostly made up of illiterates. Most traders and other informal sector workers prefer to save their monies and deal with Microfinance Institutions than the mainstream commercial/universal banks. Most of these customers or clients are mobilized through the mobile banking system, where agents from the MFI's go round seeking customers to patronize their products. However, the main challenge in dealing with this category of clients is that due to their poor educational background for example, communication with and their understanding of some basic principles becomes a bit problematic.

For many of these clients, a branch manager interviewed reported that some of them right after they have given their monies to the mobile bankers, they come trooping into the office for their monies (on that same day, claiming they are in need of it), even before the mobile bankers reach the office with their mobilised funds for the day. This the manager said, makes operations very difficult. In another scenario, many of these clients also tend to withdraw their fixed deposits before the maturity date, especially in the microfinance institutions. This is likely to create an asset-liability imbalance as most of the depositors' funds are put into investments (both short and long-term) awaiting maturity (Ismal, 2010). Thus a demand by these customers for their fixed deposits before the maturity period compels the institutions to liquidity some of

their investments in order to meet their customers' demand. Failure to do so, as already seen could also send negative signals to the clients, as though the firm is unable to meet their demands.

Lastly, a quick survey of the three groups of institutions used for the study revealed a pattern of certain risks which were predominant in each. Interestingly, it was found out that for the majority of the Rural and Community Banks as well as the Savings and Loans Companies, credit risk was the major risk they faced. However, in the case of the Microfinance Institutions, majority of them were battling with liquidity risk. The implication of this finding could be that the rate of default of loans in the Rural and Community Banks as well as the Savings and Loans Companies is very high, as they deal mostly with the informal sector which comprises mainly of the people who are of weak economic standing, and as such, the probability of loan default is very high. By extension, this goes to affect their liquidity position in the long term, as depositors' funds which are used as credit facilities cannot be recouped, leading to untold losses.

On the other hand, liquidity risk being the greatest risk faced by the Microfinance Institutions gives an indication that they may be having problems with their Asset-Liability Management at least in the short-term. Asset-Liability management involves several techniques which an institution can employ to coordinate the management of its assets and liabilities so as to ensure that adequate returns are earned. Again, unlike of the first two groups which are more highly regulated and need to send reports to the Bank of Ghana, the situation of the MFI's is not really so. These MFI's are mostly fond of disbursing a huge proportion of their funds and deposits as loans, and also at very high interest rates in order to make huge returns. As such, anytime there is a default, it leaves them exposed, and they are unable to meet their normal liquidity demands. Thus in conclusion, there is a need for a proper liquidity risk management (which includes a proper asset-liability management) on the part of the MFI's to ensure their growth,

sustainability and reputation as well. The following tables show a summary of the risk profile of the institutions used for this research, with respect to bank runs and their greatest risks. The names of the institutions are withheld for the purpose of confidentiality.

Table 4.5: Risk Profile of the Rural and Community Banks

Rural and Community Bank	Bank Run	Greatest risk
Firm 1	No	Credit
Firm 2	No	Credit
Firm 3	No	Credit
Firm 4	No	Credit

Table 4.6: Risk profile of the Savings and Loans Companies

Savings and Loans Company	Bank Run	Greatest risk
Firm 1	No	Liquidity
Firm 2	Yes	Credit
Firm 3	Yes	Credit
Firm 4	No	Credit

Table 4.7: Risk profile of the Microfinance Institutions

Microfinance Institution	Bank Run	Greatest risk
Firm 1	Yes	Liquidity
Firm 2	Yes	Liquidity
Firm 3	No	Liquidity
Firm 4	No	Market

Source: Field Study (2015)

In conclusion, it can be seen that a comparison of the above outcome with the benefits of proper liquidity risk management goes to confirm that an inadequate liquidity risk management on the part of the MFI's has led to little benefits for them, which has also culminated in liquidity risk being a major risk for them.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study sought to mainly explore the current liquidity risk management practices being followed and exercised by selected financial institutions in the Kumasi metropolis. Specifically, it delved into the factors that affect liquidity risk management practices as well as the strategies that are instituted to monitor and control liquidity risk in banks. It further went to examine the benefits of proper liquidity risk management practices to the growth of these institutions and then the challenges they face in doing so.

The previous chapter presented the results and findings of the research undertaken, together with relevant discussions. This chapter on the other hand gives a summary of the findings of this study, presenting conclusions on the findings with respect to liquidity risk management as well as recommendations.

5.2 Summary of findings

In addressing the objectives of this study, a total of twelve (12) financial institutions, comprising four (4) Rural and Community Banks, four (4) Savings and Loans Companies, and four (4) Microfinance Institutions were used. By using a purposive sampling technique, three (3) respondents were selected from each institution, making a total of thirty-six (36) respondents in all. The key respondents for this study were the branch managers, operations managers and risk managers of the institutions. The data collection involved the use of questionnaires and interviews.

In relation to the general objective of the study, the first objective of the research was to assess the factors which affect liquidity risk management practices in the selected financial institutions. Two factors were considered, namely: internal controls and institutional policies.

The data collected and analysed revealed that liquidity risk management practices of these institutions are to a large extent affected by their internal control systems. This finding was consistent with theory and other existing empirical findings (Basel Committee, 2008; Kimathi et al., 2015). In addition, it was found that the extent to which internal controls affect liquidity risk management practices was highest in the Rural and Community Banks and the Savings and Loan Companies, with the Microfinance Institutions ranking least, though the differences were not statistically significant.

With respect to institutional policies, the data and results indicate that institutional policies play a major role in the liquidity risk management practices of the financial institutions used for this study. Furthermore, it was found that among the three groups, institutional policies affected the liquidity risk management practices of the Rural and Community Banks the most, followed by the Savings and Loans Companies and then the Microfinance Institutions, though the differences in the mean scores here too were not statistically significant. However, the findings of this section were also consistent with related literature.

The second objective of the study was to identify the strategies that are instituted to monitor and control liquidity risk in the financial institutions used for this study. The findings of the study revealed a high agreement to the presence of proper liquidity management strategies, which are necessary, in order to prevent or reduce the possibility of liquidity risk. The most used strategy among the three groups was the maintenance of a minimum cash balance as a core. However, setting limits on savings withdrawals and the use of customers' savings as a source of funding, were found to be the least used strategies across the three different groups of financial institutions. The findings with respect to the least used strategies happen to be contrary to the empirical findings of Kabamba (2012). The reason for this outcome was the fact that there had been an increased competition in the banking sector, thus to maintain their customer base, most of these institutions were now becoming liberal with setting limits on the

frequency of withdrawals by their customers. Again, most of these institutions were having the challenge of irregular and unpredictable withdrawals from their clients, thus the reason for their refraining from the use of customers' savings as a source of funding.

Also, an evaluation of the liquidity risk management strategies across the three groups of institutions showed that the mean differences were not statistically significant.

The third objective of the study was to examine the benefits of proper liquidity risk management practices to the growth of these institutions. The findings generally indicate that liquidity risk management (to these institutions) has had not so much an impact on their growth. A further observation of the results show that the major source of funding for these institutions was not obtained internally (i.e. from depositors/customers), which also goes to confirm the earlier finding that the use of customers' savings as a source of funding ranked among the lowest used strategies of these institutions. Other benefits include an improvement in the amount of funds available as loans for clients, which has furthermore enabled them to charge relatively lower but competitive interest rates on their loans.

Finally, an assessment of the benefits of proper liquidity risk management across the institution types showed a significant difference in the mean scores between the Rural and Community Banks, and the Microfinance Institutions, with the former obtaining a higher mean. This implies that proper liquidity risk management practices have brought more benefit to the Rural and Community Banks than the Microfinance Institutions.

The last objective of the study was to examine the challenges faced by the institutions in managing their liquidity risk. A number of challenges were found peculiar to some of the groups of institutions studied.

First of all, a quick overview of the institutions used for this study revealed that 4 out of the 12 institutions used for this study had experienced a run since they began operations. These included two (2) Savings and Loans Companies and two (2) Microfinance Institutions. The

pattern however was that the runs they had all experienced had been as a result of runs on (or collapse of) similar institutions that had occurred in that same period. That is to say, runs on similar institutions across the country had caused a panic withdrawals in the four institutions made mention of above. This observation shows the extent of interconnectedness of these financial institutions (thus the need for a more stringent supervision) and a serious lack of confidence of the populace in this section of the banking sector. Other challenges include customers not informing their bankers in advance before going to make huge withdrawals, which adversely affects their operations, and the difficulty of the MFI's in managing their mostly-illiterate customers who are fond of withdrawing their funds before maturity.

Finally, credit risk was found to be the greatest risk affecting the liquidity position of the Rural and Community Banks and the Savings and Loans Companies, whereas in the case of the Microfinance Companies it was liquidity risk.

5.3 Conclusion

On the basis of the findings, a number of conclusion can be drawn. First of all, there exists no significant differences in the liquidity risk management practices of Rural and Community Banks, Savings and Loans Companies and the Microfinance Companies.

Secondly, the runs on some of these institutions were not necessarily their making, but were as a result of panic withdrawals due to runs on/collapse of similar financial institutions, which reveals a serious lack of confidence in this section of the banking sector and the need for a more stringent supervision on this area of the banking sector. Finally, credit risk was found to be pertinent to the Rural and Community Banks as well as the Savings and Loans Companies, which in turn affected their liquidity position, while liquidity risk was a major problem for the Microfinance Institutions and thus affected their liquidity position and operations.

5.4 Recommendations

Based on the outcome of the study and conclusions drawn, the following recommendations are made to improve upon liquidity risk management in the financial institutions:

1. From the findings of the study, a major challenge encountered by these institutions in managing their liquidity risk is with their customers not informing them in advance before coming to make huge withdrawals, and customers who are fond of withdrawing their funds before maturity. To curb this situation, management of these institutions are encouraged to know their customers very well (from the KYC - '*know your customer*' principle) which includes establishing very close and cordial relationships with them, especially the key customers. In that way, customers who usually make huge withdrawals are encouraged to inform the bank in advance, so the necessary arrangements are made before hand, ensuring a smooth run of the business. Again, educational sessions could be organised for customers periodically, to enlighten them on the banking process and also boost their confidence in the sector's competence and reputation.
2. Again, findings from the study indicated that credit risk and liquidity risk greatly affects the liquidity position of the institutions studied. To this end, it is imperative that the institutions prudently manage their funds in order to be able to meet their customers' needs. These include the following:
 - i. A substantial amount of depositors' funds should be placed in highly liquid and secured short-term investments, which could be repurchased or liquidated before maturity to cater for customers' needs.
 - ii. Debtors should be required to provide collateral in order to secure long-term investments.

- iii. Syndicated loans should also be joined so that the parties involved could bear the credit risk together.
 - iv. There is the need to have a balanced portfolio of investments (both short and long-term) in order to avoid too much investment in long term assets which are illiquid.
3. The bank runs that occurred showed that systemic risk could be high in this category of financial institutions due to their interconnectedness. Therefore, stricter regulation and supervision (on the part of the mother associations and ultimately the Central Bank) are needed to avoid contagion of liquidity risks, which could further lead to other bank runs and ultimately a collapse of many financial institutions.

5.5 Suggested areas for further research

As a limitation to this study, the researcher could not have access to secondary data in the form of financial statements in order to carry out some ratio analysis, specifically on liquidity and profitability, as way of ascertaining the extent to which the institutions used in the study had been effective in managing their liquidity risk. As such, future researches could consider adding secondary data to the analysis.

Again, the study does not cover all the regions in Ghana. Thus, a replication of this study across other regions could help in generalising the findings as well as reaching more robust conclusions.

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APPENDIX ONE: QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BUSINESS

Questionnaire

Target respondent: Employees

Dear respondent,

Thank you for your willingness to participate in this study. The study focuses on liquidity risk management practices among financial institutions in the Kumasi Metropolis.

Your responses to this instrument will **only** be used for academic purposes. It is kindly requested that you provide responses that truly reflect the operations of your firm to help improve the quality of the study.

If you have any challenges concerning any item on the instrument, you can talk to the fieldworker for clarification.

Thank you once again.

Section A:

For each of the following statements, kindly use the scale below to indicate your level of agreement

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

<i>In this institution,</i>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. There are adequate internal control systems (e.g. Accounting records, Information systems) in place to identify and control the amount of money available for customers' needs	[]	[]	[]	[]	[]
2. The working environment is conducive to ensure that staff abide by these systems	[]	[]	[]	[]	[]
3. There are periodic reviews (including internal audits) to ensure that staff are complying with these systems	[]	[]	[]	[]	[]
4. Internal controls affect the amount of money available for customers' needs	[]	[]	[]	[]	[]
5. There are specific policies on how to manage your cash in order to meet customers' needs	[]	[]	[]	[]	[]
6. The policy ensures that there is access to adequate cash to meet customers' needs in times of a shortage	[]	[]	[]	[]	[]
7. The policy clearly indicates the role of every staff involved in managing customers' deposits/cash	[]	[]	[]	[]	[]
8. There is a team that evaluates, monitors and approves practices relating to risk (Asset-Liability Committee)	[]	[]	[]	[]	[]

Section B:

For each of the following statements, kindly use the scale below to indicate your level of agreement

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

<i>In this institution,</i>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. There are proper strategies for managing cash available for customers	[]	[]	[]	[]	[]
2. These management strategies are good/clear enough for staff to understand	[]	[]	[]	[]	[]
3. We maintain a minimum cash balance as a core	[]	[]	[]	[]	[]
4. Savings of customers are also used as a source of funding	[]	[]	[]	[]	[]
5. We prepare cash flow projections	[]	[]	[]	[]	[]
6. We set limits on savings withdrawals	[]	[]	[]	[]	[]

Section C:

Indicate your level of agreement to the following **benefits** experienced as a result of properly managing cash available for customer needs

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. Number of clients have increased	[]	[]	[]	[]	[]
2. Major source of funding is obtained internally	[]	[]	[]	[]	[]
3. We can cover our operational costs	[]	[]	[]	[]	[]
4. Interest rate charged is competitive sector-wise	[]	[]	[]	[]	[]
5. Employee-motivation is high, as operations run smoothly	[]	[]	[]	[]	[]

Section D: DEMOGRAPHIC CHARACTERISTICS

1. Your position

[] Branch manager [] Risk Manager [] Operations manager []
Other.....

2. How long have you held your current position?

[] Less than 1year [] 1 - 3years [] 4 - 6 years [] 7 - 9 years [] 10 years or more

3. Institution type

[] Rural and Community Bank [] Savings and Loans Company [] Microfinance Institution

APPENDIX TWO: INTERVIEW GUIDE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF BUSINESS

Interview Guide

This interview is designed to ascertain the challenges encountered by financial institutions in managing their liquidity risk. The purpose of this research is purely academic and your anonymity is assured.

1. Could you give a brief overview of how you manage your liquidity? (i.e. how you manage your customers' deposits in order to meet their withdrawal needs).

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.....
.....

2. What specific challenges do you face in doing so?

.....
.....
.....
.....

3. Are there peak periods in your operation where cash withdrawals are very high? Have such peak periods ever resulted in the shortage of cash over the counter?

.....
.....
.....

4. Have you ever experienced a bank run? (A situation where a lot of customers seek to withdraw their monies at the same time for fear that the bank will not be able to do so at some future date). If yes, when was it? And what caused it? How did you address the situation?

.....
.....
.....
.....

5. Which of the following risks is most pressing to your institution's operations? (operations, liquidity, credit, market)

.....

6. Does the Bank of Ghana regulate your operations? If yes, what guidelines do they provide to ensure you operate within their safe limits?

.....
.....

-
.....
7. Have you ever changed your liquidity risk management procedures over the years? If yes why?
Which aspects were changed?

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.....
.....
8. Do poor loan repayments affect your liquidity position? If they do, how do you manage the situation?

-
.....
.....
9. Do poor returns on your investments affect your liquidity position/ cash levels during your operations? And operational costs? If they do, how do you manage the situation?

-
.....
.....
10. How do you at any point in time measure how much money you have in order to be able to serve customers or deposits?

-
.....
.....
11. What recommendations will you make to mitigate challenges in managing liquidity risk in your institution?

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.....