



**Liquidity Risk Management: A Comparative
Study between Islamic and Conventional banks of United Kingdom**

إدارة مخاطر السيولة: دراسة مقارنة بين البنوك التقليدية والبنوك الإسلامية

في المملكة المتحدة

BUID University

22 May 2013



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By

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Dissertation submitted in partial fulfillment of the requirements for the degree of MSc

Finance & Banking

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Academic year 2013

الموجز

وفقا لصندوق النقد الدولي (IMF)، فإن الخدمات المصرفية الإسلامية تعتبر واحدة من أسرع القطاعات نموا في الصناعة المالية وتشهد نموا من 10-15٪ على مدى العقد الماضي وتعتبر المملكة المتحدة (UK) من أهم الدول في مجال تنمية الصيرفة والتمويل الإسلامي. وبشكل مماثل لنظيراتها التقليدية، فإن البنوك الإسلامية تواجه عدد من المناطق المعرضة للخطر، والتي قد تؤثر على عملها وأدائها. إن مخاطر السيولة هي مثال واحد من القلق المتزايد بالنسبة للبنوك الإسلامية. ومع ذلك، وبالمقارنة مع نظيرها التقليدي، فإن إدارة وقياس إدارة مخاطر السيولة (LRM) هي عملية أكثر تحديا وفريدة من نوعها بالنسبة للبنوك الإسلامية، ويرجع ذلك إلى حقيقة أن معظم الادوات التقليدية المتاحة المستخدمة لإدارة مخاطر السيولة (LRM) تقوم على الفائدة، وكنتيجة لذلك، فهي تخالف الشريعة. وعليه، فإن الغرض الأساسي من هذا البحث هو النظر إلى إدارة مخاطر السيولة ومعرفة العوامل التي تؤثر في مخاطر السيولة من خلال دراسة مقارنة بين البنوك الإسلامية والتقليدية في المملكة المتحدة. واعتمد البحث على بيانات ثانوية للفترة 2007-2011

ويركز البحث على صافي رأس المال العامل (NWC)، العوائد على حقوق المساهمين (ROE)، وحجم البنك، والعوائد على الأصول (ROA) ونسبة كفاية رأس المال (CAR). ووجدت الدراسة أن مخاطر السيولة (المتغيرة التابعة) تعود بشكل إيجابي إلى (1) العائد على الأصول (ROA) والعائد على الأصول (ROE) و (2) يعود بشكل سلبي إلى حجم البنك، ونسبة كفاية رأس المال (CAR) و صافي رأس المال العامل (NWC) للبنوك التقليدية. في حين، تعود مخاطر السيولة بشكل إيجابي إلى (1) حجم البنك، ونسبة كفاية رأس المال (CAR) وصافي رأس المال العامل (NWC) وسلبا تعود إلى (2) العائد على الأصول (ROA) والعائد على الأصول (ROE) بالنسبة للبنوك الإسلامية. وفي العملية فإن البحث (1) يعرف تعريفات السيولة ومخاطر السيولة في المؤسسات متعددة الجنسيات، (2) إدارة مخاطر السيولة في البنوك التقليدية والإسلامية، وأخيرا، (3) يختبر الكشف عن إدارة مخاطر السيولة في التقارير السنوية في بنوك إسلامية مختارة في المملكة المتحدة.

كلمات دلالية: إدارة مخاطر السيولة والبنوك التقليدية والبنوك الإسلامية، المملكة المتحدة

ABSTRACT

According to the International Monetary Fund (IMF), Islamic banking is one of the fastest growing segments in the financial industry tracking a 10-15% growth over the past decade. One of the most important countries to development Islamic banking and finance is the United Kingdom (UK). Like their conventional counterpart, Islamic banks face a number of risk areas, which may affect their operation and performance. Liquidity risk is one example of increasing concern for the Islamic banks. However; compared to the conventional counterpart, managing and measuring liquidity risk management (LRM) is more challenging and unique for Islamic banks, due to the fact that most available conventional instruments used for liquidity risk management (LRM) are interest-based, and as a result, not sharia'ah compatible. Therefore, the core purpose of this research is to look into the liquidity risk management and to find out the factors that influence liquidity risk through a comparative study between Islamic and Conventional Banks of UK. The research is based on secondary data for the period 2007 - 2011.

The research investigated net working capital (NWC), returns on equity (ROE), and the size of the bank, return on assets (ROA) and the capital adequacy ratio (CAR). The study found that liquidity risk (dependent variable) is positively related to (1) return on assets (ROA), return on assets (ROE) and (2) negatively related to the size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) for Conventional banks. Whereas, liquidity risk is positively related to (1) the size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE) for Islamic banks. In the process the research (1) identify the definitions of liquidity and liquidity risk from multinational institutions, (2) Liquidity risk management in Conventional and Islamic bank and finally, (3) examined the liquidity risk management disclosure in the annual reports of selected Islamic banks in UK.

Keywords: Liquidity risk management, Conventional banks, Islamic banks, UK

Acknowledgment

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of Allah, the Beneficent, the Merciful!

First of all, all thanks and praises are due to Allah SWT, the Most Gracious and the Most Merciful. Secondly, I would like to express my sincere gratitude and thanks to specially my respectable supervisor, Dr Elango Rengasamy for his valuable advices and valued comments and suggestions has added enormous value to the quality of preparing this dissertation. Thirdly, I also extend my deepest gratitude and appreciation to my family for their patience, prayers and dua, particularly my lovely father (Mohamed Mahamud) and mother (Safiya Yusuf), my lovely husband (Mohamed Abdi) and my sisters (Sacdiya and Faisa) and Lastly, My beautiful daughter (Aaliyah). I hope this work and degree would pay all of your sacrifices and understanding.

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LIST OF ABBREVIATIONS

ALCO:	Assets and Liabilities Committee
BIS:	Bank for International Settlement
BCBS:	Basel Committee on Banking Supervision
CAR:	Capital Adequacy Ratio
CBS:	Conventional Banks
IBs:	Islamic Banks
FSF:	Financial Stability Forum
LCR:	Liquidity Coverage Ratio
LRM:	Liquidity risk Management
NWC:	Net Working Capital
ROA:	Return on Assets
ROE:	Return on Equity

CHAPTER 1

INTRODUCTION

1.1 Background

The global financial crisis in 2007 and 2008 has navigated towards the most severe financial crisis since the great depression and threatened to have great consequences on the real economy and raising fundamental questions about liquidity risk (Brunnermeier (2008)). The set off for the liquidity crisis was an increase in sub-prime mortgage defaults whereby the financial system has experienced with urgent demands for cash from a variety of sources, including counterparties, short-term creditors, and, particularly, existing borrowers. Despite having sufficient capital levels many conventional banks throughout the financial crisis still experienced problems because they did not manage their liquidity in a prudent manner and episodes of failure of many conventional banks from the past and the nearby provide the testimony to this claim such as the collapse of Bear Stearns, Lehman Brothers, and Merrill Lynch's takeover by Bank of American. However, at the same time it is observed that Islamic banks were almost unaffected from this crisis due to their nature of being more liquid.

Liquidity risk occurs when bank do not have adequate resources to meet its financial obligations as they come due, or to fund increases in assets as they fall due without incurring unacceptable costs or losses (Smith, 2010). Until the financial crises, monitoring, managing and measuring liquidity risk was barely ever seen as a high priority by most banks and financial institutions and therefore in response, regulators are examining the existing liquidity risk position and trying to devise new liquidity risk standards with the aim of making the financial system more stable and resilient. The international banking standards recommended that banks are required to have robust liquidity risk management policies, a responsive asset and liability committee, effective information, internal control systems and methods for managing deposits to reduce on demand liquidity, in order to manage liquidity risk (BIS, 2006). In general, to manage and measure liquidity risk successfully, there is a need for good forecasting, visibility of cash positions, a way to concentrate funds, and the aptitude to negotiate foreign exchange (Halim, 1986).

Therefore, the most common area of risk with Conventional and Islamic banks is liquidity risk management and like their Conventional counterparts, Islamic banks need to control liquidity risk management in order to be solvent. Nevertheless, compared to the conventional counterpart, managing and measuring liquidity risk management (LRM) is more challenging

and unique for Islamic banks, due to the fact that most available conventional instruments used for liquidity risk management (LRM) are interest-based, and therefore, not sharia'ah compatible (Alkhalifa, 2012).

Islamic banking and finance has spread all over the world both in Muslim and non-Muslim countries; according to International Monetary Fund (IMF), Islamic banking, is one of the fastest growing segments in the financial industry tracking a 10-15% growth over the past decade and has been growing constantly ever since the first institutions started operating during the early Seventies. At the present, there are 300-450 Islamic financial institutions spread over 75-90 Muslim and non-Muslim countries, and its assets as estimated by the UK Islamic Finance Secretariat (UKIFS) have reached \$1,130bn at end-2010, 21% up on \$933bn in 2009 (City-UK- Charts). More significantly, the relative flexibility of Islamic banks (IBs) during the first phase of the post-Lehman crisis has brought increased interest in their banking, financial services and products (IMF 2011). Global financial players like America Express bank, Citibank, ABN AMRO, HSBC, etc. are also practicing in Islamic banking and financial industry. Nonetheless, regardless of these encouraging developments the Islamic banking industry still needs to address fundamentally important considerations if it is to continue to grow; the potential problem of liquidity risk management must not be ignored as liquidity risk management (LRM) is just as important to the Islamic banks as it is to the conventional banks but it is more challenging and unique for Islamic banks, because most available conventional instruments used for liquidity risk management (LRM) are interest-based, and therefore, not sharia'ah compatible.

One of the important countries to development Islamic banking and finance is the United Kingdom (UK), and currently the country ranks 9th in the world with Shari'a-compliant asset base of about US\$20bn (The City UK, 2011) making UK the key Western centre for Islamic Finance . The city of London is the world leading financial services centre due to the facts that London is known to the majority of investors in the Middle East region and there are thought to be about 2.8 million Muslims in the UK. Also about half a million regular Muslim visitors to the UK and 50% of these are estimated to reside in the London area. Therefore, given the importances of liquidity risk management in Islamic banks and the status of London as the international hub for Islamic banking, the core purpose of this research is to investigate the factors that influence the liquidity risk management (LRM) of Islamic and Conventional banks of UK for the period of 2006-2007. In the process, this research (1) identify the

definitions of liquidity and liquidity risk from multinational institutions, (2) what causes Liquidity risk management in Conventional and Islamic bank in and in addition, (3) examines the liquidity risk management disclosure in the annual reports of selected Islamic banks in UK. This dissertation is expected to add value to the limited numbers of existing literatures on liquidity risk management in Islamic banking of UK. So far, there is no prior dissertation that evaluates liquidity risk management of Islamic banks in UK through a comparative analysis between Conventional and Islamic banks.

1.2 Problem Statement

For many years liquidity risk management has always been important for banking, however due to the growth and profitable market of money lending business the liquidity risk management frequently develop into a secondary concern for the managers of banks. Aggressive increase of lending operations that have become potential through securitization of loan portfolios helped the banks to further ignore liquidity risk and expand the asset portfolios even on thin capital base. However, the global financial crisis in 2007 and 2008 has arises the important of liquidity risk and taught many important lessons to banks, their regulators and also the society in general. Despite have adequate capital levels many banks during the financial crisis still experienced problems because they did not manage their liquidity in a sensible manner. Episodes of failures of many conventional banks from the past and the present provided the demonstration to this claim such as the collapse of Bear Stearns, Lehman Brothers, and Merrill Lynch's takeover by Bank of American. The significance of liquidity risk management is one of these lessons that have forced the banks to re-evaluate and re-think again about their practices and more so their regulators are keen to keep a vigil on liquidity position of banks. A survey conducted by Ernst & Young of 62 large banks in 2010 on behalf of International institute of finance found that:

- 92 % of banks have made changes to their approaches to managing liquidity risk
- Liquidity risk management has turn out to be the most single important area for bank to

According to Smith (2010), Liquidity risk occurs when banks do not have sufficient funds to meet the financial obligations and fail increases in assets as they fall due without incurring unacceptable costs or losses. In general, to manage and measure liquidity risk successfully, there is a need for good forecasting, visibility of cash positions, a way to concentrate funds,

and the aptitude to negotiate foreign exchange (Halim, 1986). Liquidity risk management (LRM) is just as important to the Islamic banks as it is to the conventional banks but it is more challenging and unique for Islamic banks, because most available conventional instruments used for liquidity risk management (LRM) are interest-based, and therefore, not sharia'ah compatible. For years it has been have argued that liquidity risk problem is a major risk facing the Islamic banks (Ray, 1995), and key barrier to the growth of Islamic banks (Vogel and Hayes 1998). Therefore, given that liquidity risk is one of the most significant risks facing Islamic banks and given the complexities of banking activities and economic conditions; it is necessary to investigate the factors that influence liquidity risk Islamic and Conventional banks and the causes of liquidity risk management for both Banks.

1.3 Research aims and objectives

Given the importance of liquidity risk management to the growth and survival of the Islamic banking industry and the status of London as the international hub for Islamic banking,

This aim of this research is to analysis the LRM in Islamic banks and Conventional of UK; it aims to analyse this topic from a new perspective by investigating the factors that influence liquidity risk in Islamic banks of UK. To give a clear picture of liquidity risk management in Islamic banks to the stakeholders, directors and managements it has been compared with conventional banks in UK. The study investigates the significance of Networking Capital (NWC), Return on Equity (ROE), Size of the firm, Capital Adequacy (CAR) and Return on Assets (ROA). The study uses secondary data for the period of 2007 to 2011.

In the process the study hopes to identify (1) the definitions of liquidity and liquidity risk from multinational institutions, (2) what causes Liquidity risk management in Conventional and Islamic bank in and in addition, (3) examines the liquidity risk management disclosure in the annual reports of selected Islamic banks in UK. The outcome of the research will fill a gap in knowledge and understanding with regard to liquidity risk management of UK banks.

1.4 Research questions

Following on from the research aims and objectives, this dissertation targets to answer the following research questions:

1. What is liquidity and Liquidity Risk?

2. What causes Liquidity risk management in Islamic bank?
3. What factors influence liquidity risk in Conventional and Islamic banks in UK?

The hypotheses of this research paper are:

1. H1: There is a negative relationship between net working capital and liquidity risk.
2. H2: There is a positive relationship between the size of the bank and liquidity risk.
3. H3: There is a positive relationship between return of equity and liquidity risk.
4. H4: There is a positive relationship between capital adequacy ratio and liquidity risk.
5. H5: There is a positive relationship between return on assets and liquidity risk.

Table 1.3 summarises the research objectives and research questions for this paper:

1.5 Research Methodology

In order to accomplish the aim and objectives, the study uses secondary data of financial bank's reports, published journals and books relating to liquidity risk for the period from 2007 to 2011. This research uses a sample of 6 banks; 3 Islamic banks and 3 Conventional banks. The Islamic banks are; Bank of London and Middle East (BLME), Islamic bank of Britain (IBB) and Europe Islamic Investment Bank (EIIB) and the Conventional banks are HSBC, Lloyds and Barclays. The banks were selected on the basis of the available of the data. Data was collected from the annual reports for each bank over the period 2007-2011, and then financial data from these annual reports is used to investigate the liquidity risk management in Islamic and Conventional banks of UK.

The independent variable is measuring of five factors. They are size of the bank, return on equity, capital adequacy ratio, return on assets and net working capital, whilst the dependent variable is the Liquidity risk. For the better comparison, each year the average ratios for Islamic and conventional banks are considered and then mean of each ratio for each variable is calculated.

1.6 Development of Islamic banks in the UK

As stated before, in current years, Islamic finance has grown rapidly across the world. However, London has been providing Islamic financial services for over 30 years, although most of the growth has taken place in the past five years, making London as the international hub for Islamic banking (FSA 2007). Currently, in the UK, there are five banks which are

fully Shari'ah compliant banks and were established between 2004 and 2008, ranking the UK the 9th in the world with Shari'ah compliant base of \$20bn (The city UK 2011) (see Table 2.1). Furthermore there are an estimated 22 conventional banks that have set up windows in the UK to provide Islamic financial services. Such banks in the UK that opened Islamic banking windows are; Barclays bank, Standard Chartered, HSBC, Lloyd TSB and Royal bank of Scotland. HSBC has made an enormous contribution in Islamic banking sector; it is the only conventional bank with an Islamic window which has reported assets of \$16.7bn account for 88% of the UK's identified assets (Table 2.3).

The main reasons for the rapid development has been from two key policy objectives: firstly, the government of the UK has been supporting the operation of Islamic banks in its region and has wanted to make sure that the UK's Muslim community had right to financial services consistent with their religious beliefs. Secondly; the Financial Services Authority (FSA) and the Bank of England have been strongly involved in these developments to maintain London as Europe's gateway to international Islamic finance. In addition, in 2003, the UK Government embarked on a programme which has introduced tax and legislative reforms to enhance the use of Islamic Finance in the UK¹.

Size of the market in the UK and globally

Islam is the world's second largest religious faith and there are thought to be about 1.5-2.4 billions Muslims with 2.7 millions Muslims of the UK's population (Census 2011) 50% of these are estimated to reside in the London area. Furthermore, another half million Muslims regularly visits the UK.

1.7 The outline of the research paper

The overall objective of this research is to examine the factors that influence LRM in Conventional and Islamic banks of UK and in order to achieve this; the dissertation is organised in different sections whereby each section covers some areas of the study. Before carrying on any further, it is essential to understand these sections and structure of the research.

Chapter 1 Introduction: This chapter briefly describes the background content of the research. It states the aims and objectives of the research, problem statements, research questions, research methodology and contribution to the research.

Chapter 2 Theoretical Background Information: Lays the base of the theoretical analysis of the research. It highlights the development of Islamic banking in UK, indentifies some definitions of Liquidity and Liquidity risk from multinational financial institutions, and describes the potential causes of liquidity risk management in Conventional and Islamic bank.

Chapter 3 Literature Review: This section presents several previous studies in the area of liquidity risk, liquidity risk management in Islamic and conventional banks.

Chapter 4 Research Methodology: Describes the complete process of the dissertation, it provides details regarding the research methodology; starting with how the data is collected and how is carried out; how the empirical investigation was coordinated and how the finishing output of the dissertation is proposed and created.

Chapter 5 Results & Discussion: Carry out the results and discussions of chapter 4 and finally present the outcomes: first the chapter elaborates on the ratios performance of the UK Conventional and Islamic banking industry, starting with liquidity ratios followed by the independent variables. Analysis of the descriptive statistic is done for the collected variables, which consist of maximum, minimum, mean and standard deviation. Pearson correlation is used to find the relationship between variables and regression to find the coefficients

Chapter 6 Conclusion: It is all about conclusions of the research finding, and Limitations to Methodology; Firstly, the research summary highlights the aim and objectives, followed by a brief overview of the results and outcomes of the literature review chapters and empirical research chapter. Also, recommendation and about future study of Islamic banking area.

Following the research conclusion, the study suggests that future research is needed to find the drivers of liquidity risk in Islamic banking and how different it is from conventional banking.

Chapter 7 bibliography

A framework for the research has been organised to assist in completing the different parts and chapters. This is displayed in table 1.1

1.8 Contribution of the Research

This research makes two contributions to the liquidity risk management (LRM) literature. Firstly, this research add further weight to recent research focusing on the LRM in Conventional and Islamic banks such as, (Akhtar 2012) Iqbal (2012), Sayedul (2012), and Ahmed (2011) by enriching the literature on the liquidity risk management of the Islamic banks and providing deeper understanding on issues relating to liquidity risk management in selected Islamic banks of United Kingdom. Second, unlike previous researches which have merely concentrated on empirical tests, this dissertation also focuses on the theoretical analysis of LRM? In respect, the various measures and models are assessed with both a theoretical evaluation and empirical tests.

CHAPTER 2

THEORETICAL BACKGROUND INFORMATION

2.1 The definition of Liquidity and Liquidity risk from Multinational Financial Institutions

Liquidity in financial markets and intermediaries has many different meanings. Firstly, liquidity symbolizes the capacity of a financial firm to uphold continually the stability between the financial inflow and outflow over time (Vento 2009). Secondly, liquidity is the evaluation of the ability of a financial firm to sell assets quickly without incurring huge losses. This means that the asset's side of the balance sheet is focussed on. Thirdly, liquidity is sometimes understood as the ability of a bank to increase funds on the wholesale financial markets by ever-increasing its liabilities. Overall, in reflection of the meanings above, liquidity risk can be concluded as the risk that a financial firm either does not have an adequate amount of financial funds to allow it to meet its obligations as they fall due, or can obtain such funds only at extreme cost. Furthermore, different authors and institutions, in diverse moments, highlighted a number of different features in identifying and defining liquidity and liquidity risk.

Since 1992 the Basel Committee on Banking Supervision (BCBS) has been focussing on developing a greater perspective and understanding the technique in which international banks manage their liquidity on a global basis. With this paper the BCBS made the effort to define 'The Framework for Measuring and Managing Liquidity', by bringing together a practice and technique. This is employed by international banks in a single analytical framework, to establish sound management practice and to provide useful guidance to all banks. The paper emphasises that managing and measuring liquidity should be among the most fundamental performance of commercial banks by agreeing that a bank is able to meet its liabilities as they come due. The paper also stresses that the supervisory authorities have to distinguish between the different approaches that are used for domestic and large international banks, in addition to proposing different methodologies based alternatively on a maturity ladder or scenario analysis in order to implement an effective liquidity management. Overall, this paper focused on the use of the framework for large banks.

Eight years later, the Basel Committee on Banking Supervision (2000) defined liquidity as ‘the ability to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses’ (BCBS 2000). The international financial crisis has produced new challenges for liquidity management; due to these developments the paper outlines a set of sound practices for managing liquidity in banking organisations. In this framework, the paper drew attention to the several banks which were unsuccessful to take account the basic principles of liquidity risk management when liquidity was ample. The main reason is that the majority of exposed banks did not have an adequate framework that acceptably accounted for the liquidity risks which were posed by business lines and individual products. The BCBS Committee also display the developments in liquidity management and supervision which is organised around a set of fourteen principles. In particular, more detailed guidance has been provided on; the necessity of allocating liquidity costs, benefits and risks to all important business activities; the significances of establishing a liquidity risk tolerance; the identification and measurement of the full range of liquidity risks, including contingent liquidity risks; the management of intraday liquidity, risk and collateral; and the maintenance of an adequate level of liquidity, including through a cushion of liquid assets. On the other hand, this second paper did not classify a main methodology that needs to be used in order to manage, measure and assess liquidity risk. Nonetheless, this paper had the establishment to clearly link liquidity risk to other risks of business banking such as market risk, credit risk and operational risk for the first time.

In 2006, the Joint Forum of the Basel Committee had integrated and brought forward an ‘integrate liquidity risk management in financial groups; in addition, the paper also considered the impact on liquidity of the on and off-balance sheet instruments and contracts with implanted options. Most importantly, the Joint Forum identified the liquidity risk into two elements; (1) the funding liquidity risk and (2) market liquidity risk. Alternatively, this differentiating has previously been implemented by the European Central Bank (2002). The funding liquidity risk is defined as, the risk that the firm is not be able to economically meet both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm². Market liquidity is the

² source: BIS, The management of liquidity risk in financial groups, May 2006)

risk that a firm will not be easily able to offset or eliminate a position without considerably affecting the market price because of inadequate market depth or market disruption³.

Market liquidity can be considered along several different dimensions such as: breadth, immediacy and resilience and depth (BIS 1999). From this paper onwards, the differences between funding liquidity risk and market liquidity risk has been established and became an important element in all the literature on liquidity risk management.

In February 2008, the Basel Committee published an updated draft for consultation of the 'Principles for Sound Liquidity Risk Management and Supervision challenges'. In which, the paper stresses many of the banks did not adopt an adequate framework that satisfactorily accounted for the liquidity risk posed by some businesses. The BCBS also updated the key principles for the management and supervision of liquidity risk. The paper highlights the magnitude of the necessity of distributing liquidity costs, benefits and risks to all significant business activities; the requirement to classify and evaluate the full range of liquidity risk, comprising contingent liquidity risk' and the need for designing and using 'severe stress test scenarios'. Furthermore, the paper has also setup guidance for supervisors which emphasise on the importance of supervisors evaluating the adequacy of a bank's liquidity risk management, framework and its level of liquidity.

Alongside the Basel Committee, other institutions in the years had investigated the liquidity risk is well, such as the Financial Stability Forum (2008). The Financial Stability Forum (FSF) report makes recommendations for enhancing the resilience of markets and financial institutions. The report has setup a detailed section which is devoted and considered to liquidity risk, stressing the fact that central banks and supervisors have 'to promote more robust and internationally consistent liquidity approaches for cross-border banks'. In response to the request, the EU Commission is conversing with the public for potential improvements of the Capital Requirements Directive (Directive 2006) so that specific requirements can be included for liquidity risk in Europe. Simultaneously, in the last two years, the European Union (EU) has also been closely investigating liquidity risk. However, on March 2007, the European Commission had asked Committee of European Banking Supervisors (CEBS) to offer technical advice on liquidity risk management at credit

³ source: BIS, The management of liquidity risk in financial groups, May 2006)

institutions and investment firms. As a result, several updates of the regulatory regimes across the EEA have been published and deeply analysed of the variables that may significantly affect liquidity management. In 2008, the second part of its advice on liquidity risk management had been published by the CEBS which includes 30 recommendations on liquidity risk management and supervision. The paper identified liquidity risk that it 'can be seen as the potential threat to this cash generating capacity at fair costs, which is needed as a counterbalancing capacity at liquidity demands'. This explanation implies a dynamic point of view of liquidity risk since the key element in order to face such risk is the perception of the cash generating capacity, which has to be sufficient for counterbalancing the unforeseen demand of liquidity.

Systematically, with existing approaches and policies for the in progress supervision of banking institutions the Basel Committee of Banking Supervision (BCBS), and The Financial Stability Forum (FSF), the Financial Services Authority (FSA) in the UK has as well published policy statement in liquidity risk; Strengthening Liquidity Standards, which includes feedback on CP08/22 CP09/13 and CP09/14 and formally finalizes the liquidity regulation within the UK. The Policy Statement is the sixth formal liquidity publication established by FSA. The paper set out an outlook on the future liquidity regulation in the UK. It requires UK firms to maintain adequate liquidity resources and manage their liquidity risks. In CP09/13 FSA has published a Policy Statement setting out the finalised liquidity regime and reporting rules together with the transitional arrangements? Overall, the new policy requires that UK banks should monitor the liquidity risk profile at least weekly and in cases it should be in daily basis. The FSA paper clearly showed that the UK banking system has already strengthened liquidity standards especially in short-term position significantly. The tough policy has required business model to be changed.

In December 2010, the Committee on Banking Supervision (BCBS) issued Basel III: BCBS has come up with new recommendations for liquidity risk management in Basel III, issuing International framework for liquidity risk measurement, standards and monitoring. The new Basel III liquidity rules mark the first time that specific global quantitative minimum standards for liquidity have been introduced. Among them they are two quantitative measures: (1) liquidity Coverage Ratio (LCR) and (2) Net Stable Funding Ratio (NSFR). LCR is to ensure that the banks have enough liquid assets to cover for 30 days of net cash out flows. NSFR is to encourage more medium to long funding. Monitoring of the new standards

commenced as of year-end 2010. The LCR is expected to take effect in 2015, although some banks will be given more time to meet the requirements. Under Basel III, individual banks are instructed to maintain higher and better quality liquid assets and better liquidity risk management. However, since Basel III only targets individual banks, liquidity risk rules can only play a limited role in addressing systemic liquidity risk concerns. In terms of larger liquidity bumpers, each bank is required to lower the risk that multiple institutions.

2.2 Liquidity risk management in conventional Banks

Upon identifying the definitions of liquidity and liquidity risk, the next issue is to examine liquidity risk management in conventional banking briefly so it can be compared to Islamic banks liquidity risk management. Unlike Islamic banks; Conventional banking has a range of opportunities to manage and mitigate liquidity risk, for example; investment in short term interest based instruments issued by corporate and government sector, helped from the central bank and the opportunity to invest in equities through the stock exchange and earn return in the form of price appreciation and dividend. However, since 2007 the U.S sub-prime mortgage crisis has not only affected the U.S. economy, but it has also affected the global financial system, which had a huge challenge to long-term and short-term growth for the global banking system. For the reason, the crisis has caused banks and other financial institutions became anxious about lending to other banks because in general banks lack liquidity following the sub-prime mortgage crisis. Particularly, banks that have been depending deeply on the short-term money market or purchased funds market has suffered liquidity problem the most and the Northern Rock is an example.

For Conventional banks, liquidity risk arises from when banks are not able either to meet the obligations of the depositors when they come due or to fund increases in assets as they fell due without incurring unacceptable costs or losses. From the risk viewpoint, two explanations can be made; (1) deposits on the liability side of the balance sheet creates the instantaneous liabilities irrespective of the outcome of the usage of the funds on the asset side and as a result if the best possible operation is not made a mismatch occurs on the asset and liability side; (2) medium to short term assets are funded by the stream of short term liabilities including the dues of the other banks. Furthermore, liquidity risk problem arises from the depositors because if a decision is made to redeem their deposits and the bank has not enough

cash in hand it creates liquidity problem. In real, banks find imbalances in the asset and liability side on the regular basis and must need to manage accurately else they would face solvency risks.

2.3 Liquidity Risk Management in Islamic Banks

Islamic banking in the UK is having a growth spurt, especially in the last five years, where by Islamic commercial banks have grown more rapidly than their conventional equivalents. However, despite the growth, Liquidity risk management is a challenge for UK Islamic banks. Balancing between too much and too little liquidity is one of the key challenges for anyone running a bank. After explaining the basic liquidity risk issue for conventional banks and how they manage, the dissertation now outlines why liquidity risk management is even more challenging for Islamic banks.

The financial crisis that began in 2007 and the recent financial developments have highlighted the significant of liquidity risk problems to all financial institutions, including Islamic banks. However, at the same time it is observed that Islamic banks were almost unaffected due to this crisis and that was due to their nature of being more liquid. Meanwhile, Islamic banks need to control liquidity in order to be solvent like their conventional counterparts. In particular, it's important for Islamic banks to have a rigorous liquidity risk assessment and mechanism, if they want to be more engaged in any business activity. Islamic banks do not pay interest or charge interest. However, somewhat their business model is primarily the same as that of conventional banks: they take money from customers on a short term basis, and use that to finance individuals and businesses on a longer term foundation. As a result they face the same liquidity management risks as conventional banks, but can find it tougher and more challenging to manage those risks. According to Islamic financial services board (IFSB) Guiding Principles of Risk Management (2012), liquidity risk to Islamic banks arises from their inability to meet their obligations to depositors or to fund increases in assets as they fall without incurring unacceptable losses or costs. In addition, Liquidity risk accrues from maturity mismatches whereby the liability's side has a shorter tenor than assets side. An unexpected increase in the borrowers' demands above the expected level could result to shortages of cash or liquid marketable assets (Oldfield and Santamero, 1997). Therefore, reducing the liquidity risk is one of the most important characteristics of banks' asset and

liability management, especially Islamic banks due to their unique challenge and Shari'ah laws.

In general, liquidity is tricky and complicated to define and even more difficult to measure' (Persaud, 2007). In addition, managing and monitoring liquidity risk can be even more challenging, particularly in episodes of difficult scenarios like the financial crisis, primarily because the underlying variables driving the exposures can be unpredictable and dynamic (Simplice 2010). For Islamic banks, monitoring, managing and measuring liquidity risk is an even more challenging due to liquidity shortfalls, as Islamic banks cannot ask for the help of money market or other instruments because as per the Shariah law, Islamic banks cannot collect fund for interest (Sole, 2007). Furthermore, because of the Shari'ah standard it is somewhat difficult for the Islamic banks to invest the excess liquidity for a shorter period of time (Ahmad and Humayoun2010). For years it has been have argued that liquidity risk problem is a major risk facing the Islamic banks (Ray, 1995), and key barrier to the growth of Islamic banks (Vogel and Hayes 1998). Other reasons for Liquidity risk problem facing Islamic banks are as followed:

1. One of the causes for liquidity risk in Islamic banks is that; currently, the Islamic banking industry is in its period of rapid growth, and therefore it has to be accompanied by a robust liquidity risk management program; and at the moment such program is not being prepared successfully by banking regulators. Despite that in the recent year, the Liquidity Management Centre (LMC), International Islamic Financial Market (IIFM) and International Islamic Liquidity Management Corporation (IILM) in Bahrain and others have done some excellent work and new Islamic liquid instruments such as the sukuk issued by Malaysia. However, without a robust liquidity risk management program to operate within, Islamic banks in the UK and around the world will not continue to grow meaningfully.
2. Like their conventional counterparts, Islamic banks too have to meet their liquidity requirements and obligations to ensure the smooth running of their business. For conventional banks, secondary market for debt instruments, the interbank market, and discount windows from the central bank as the lender of last resort (LOLR) are available to manage liquidity risk. However in Islamic banks all of them are not accepted by Shari'ah scholars, meaning that Islamic banks almost have no access to LOLR facilities, and as a result there are not authorized to deal in conventional money markets because transactions in these market do not fulfil a number of

Shari'ah requirements and their options to manage their liquidity positions efficiently. Consequently, IBs find themselves holding huge amounts of liquidity in comparison to their conventional counterparts. Conventional banks have access to borrowing with overnight to extended short-term maturity through well-developed and efficient interbank markets. This access is very important for meeting the institution's need for short-term cash flow. In the UK, Islamic banks place their surplus funds with conventional banks by means of murabaha transactions based on commodities.

3. In addition, certain characteristics of some Islamic instruments/ contracts give rise to liquidity risks for Islamic banks. These factors include: cancellation risks in murabahah or the inability to trade murabahah or bay' al-salaam contracts, which can only be traded at par, and as a result limiting the scope for secondary markets for sale based contracts, the illiquidity of commodity markets, and prohibition of secondary trading of salam or istisna contracts. (Syed Ali 2004).
4. The next potential sources of LRM are from the facts that Islamic banks hold a huge capacity of funds as demand deposits in current accounts, which means that it can be withdrawn at any time. Banks guarantee repayment of the main deposited, and account holders do not have rights to a share in the profits. Some Islamic banks invest only a small fraction of the current account holders' funds and, in the nonappearance of liquid short-term instruments, maintain a high level of idle cash.
5. The least potential liquidity problem is that the future development of the Islamic banking industry demands a proper liquidity management, given the complexities of banking activities and economic conditions.

These factors have outlined that Islamic banking industry is still struggling to manage liquidity risk management (LRM) and the significance of having a robust liquidity risk management program to anticipate future liquidity risk problems is even more needed. Whereas, Conventional banks have nowadays established numerous tools for managing liquidity risk management.

2.4 Liquidity risk management disclosure in Islamic banks

A bank is required to have efficient systems for monitoring adherence to established guidelines. This can best be carried out throughout reporting system and an internal review

that informs the board of directors and senior management of how policies are being carried out and that offers them with adequate information to assess the performance of lower-echelon officers and the condition of the portfolio. Table 4.5 delivers a summary of the items disclosed in the Islamic banks' the annual report for the year ended 31 December 2011. All Islamic banks in the dissertation disclose the definition of liquidity risk in the annual reports and use the Liquidity Framework approved by FSA to manage its liquidity. The liquidity framework establishes the liquidity situation based on the contractual, liabilities and off-balance sheet commitments, and off-balance sheet commitments, taking into consideration the realisable cash value of the eligible liquefiable assets.

Table 2.4 Liquidity risk disclosure in Islamic Banks

	BLME	EIIB	IBB
Definition of liquidity risk	Yes	Yes	Yes
Frequency of meeting	Monthly	Monthly	Monthly
Risk Management	Liquidity Framework	Liquidity Framework	Liquidity Framework
Monitoring frequency	Daily basis	Daily basis	Daily basis
Risk Measurement	Not available	Not available	Not available
Responsibility	Asset Liability Committee (ALCO)	Asset Liability Committee (ALCO)	Asset Liability Management and Group Treasury

Note: Not available means that the information on the items are not revealed in the financial annual reports of the selected Islamic banks.

According to IIFS, a bank is required to have in place a sound and comprehensive liquidity risk management framework, incorporated into its enterprise risk process, in order to retain sufficient liquidity to meet its daily funding, banks are required and to cover both expected and unexpected deviations from normal operations for a reasonable time. The IIFS states that IBs are required to have an appropriate governance process, which includes both board and senior management oversight, in order to identify, monitor, measure, control and report the

liquidity risk in compliance with Shari`ah principles and rules within the context of available Shari`ah-compliant instruments and markets (IIFS).

The Risk Management Committee in these banks, have the responsibility of managing the liquidity risk management in the selected Islamic banks are where this committee provides oversight and management of all risks. All the selected Islamic banks in the dissertation did provide disclosure on the frequency of the meetings for the liquidity risk management and also the monitoring frequency. Within the selected Islamic banks the responsibility of monitoring the liquidity risk does not always necessarily reside with one section of a development but several developments are also involved. The main contribution is that the Risk office is getting more responsible for managing liquidity risk in the banks. The other departments who have the responsible for managing liquidity risk are treasury department and asset-liability management units. Nonetheless, in the annual reports there are no disclosures with respect to quantitative information on the management of the liquidity risk, such as the techniques used to manage the liquidity risks, which is crucial to the market participants. The main reason for this that liquidity stress is not unknown in fully fledged Islamic banks; Islamic banks investment, Islamic banking divisions' well subsidiaries of conventional banks.

CHAPTER 3

LITERATURE REVIEW

3.1 Literature review liquidity risk management

The events of 2007–2008 underline the importance of liquidity risk management for the proper functioning of the banking sector and financial markets. Regardless of having high capital levels, several banks experienced complications because they had not managed their liquidity properly (Gomes & Khan 2011). Consequently, in response, regulator are assessing the existing liquidity position and attempting to develop new liquidity standards with the hope of making the financial system more stable and resilient. There is a general sense that banks are not fully grateful to the importance of liquidity risk management (BCBS 2010)⁴. This is one of the main reasons why Basel Committee on Banking Supervision (BCBS 2012) and other multinational institutions are trying to fix common measure and standards for facing liquidity risk by banks.

Liquidity risk management is complex and requires careful analysis from bank management to identify any problems. Monitoring, managing and measuring go hand-in-glove; meaning that good liquidity monitoring and measurement policy is more or less required by bank management to make judgments on bank liquidity positions on an on-going basis; particularly in episodes of difficult scenarios like the financial crisis. However, ‘liquidity is tricky and complicated to define and even more difficult to measure’ (Persaud, 2007). In addition, managing and monitoring liquidity risk can be even more challenging, particularly in episodes of difficult scenarios like the financial crisis, primarily because the underlying variables driving the exposures can be unpredictable and dynamic Simplice (2010).

Relating to the use of market positions, Dinger (2009), paper tests a resulting from the works of Detregiache and Gupta (2004), which supports the paper founds that, foreign owned banks do have a stabilizing impact because they have more access to diversified sources of liquidity. The study consists in two parts. The first part highlights the importance of holding liquid assets of transnational banks and show that they’re considerably lower than those of single-market banks. In the second part, the study is able to document that foreign bank presence notably condense the risk of aggregate liquidity shortages in emerging economies.

⁴ BCBS (2010): “Basel III: International framework for liquidity risk measurement, standards and monitoring”, the Bank for International Settlements. December 2010.

The result indicated that there is no empirical evidence that transnational banks' liquidity behaviour differs from that of single-market banks. Qian et al. (2004), paper observe the dilemma from the outlook of a financial system design by comparing banks in a dynamic economy. The paper found out that, both the market and banking system can provide partial liquidity insurance to investors. However, Gabbi (2004) focused on liquidity risk and stresses that any changes in financial markets have played a role in the payment system and the banking processes directly devoted to short term forecasting. The result demonstrated that that liquidity risk can be optimised through cash flow managing, bond and stock selection in particular components and through the management of short term financial items economies of scale can be achieved. The data was collected from authoritarian area of the yellow, red and green zone.

As regards to some form of liquidity shock, Sawada (2010) examines the impact of liquidity shock on bank portfolio management in the time of financial crises in a system lacking deposit insurance from the time period of 1926 to 1932 and used the panel data with regression test. The study concludes that the security market development shall be simultaneously treated in particular with respect to those states with weak financial structures. Furthermore, banks exposed to local financial infection adjusted the liquidity of their portfolio for the most part by actively selling and buying their securities in the financial market. It also concludes that there is no evidence of the existence of the lender of last resort mitigated the liquidity constraints in bank portfolio adjustments. The study recommends that banks should increase their cash holdings rather than liquidating their loans by selling their securities in the financial markets. Investigations to identify the relationship between return of the stock and its liquidity was studied by Uddin (2009) who examined the connection between the return of stock and its liquidity by using a relative measure that links the individual stock liquidity with market-wide liquidity. The paper employs multivariate regressions to investigate the effects of relative market liquidity on the stock return while controlling the effects of other factors. The paper identified a negative relationship between the return of a stock and its liquidity, as stock become more illiquid the liquidity risk rises more than the relative rate, also indicate that fluctuation in relative stock liquidity does not positively affect the return. In conclusion, it suggests that the illiquid stocks are riskier than liquid stocks. As for liquidity pricing, Vaihekoskia (2009) studied the pricing of liquidity risk in the stock market using conditional pricing models (APMs) in the period of systematic liquidity risk. The study employed the generalised method of moment framework with a

price of risk specification. The main aim of the study is to analyse whether liquidity is priced as a systematic source of risk or as an assets specific characteristic from period of 1987 to 2004. The result showed that systematic liquidity risk is not priced as an asset-specific risk but as market-wide systematic risk as it is enough to occupy all liquidity related risks.

The financial market turmoil was caused by the sub-prime mortgage and since then several research had been done such as Vento et al. (2009) who investigated the liquidity risk management techniques and supervisory approaches, in order to improve the financial market turmoil that was caused by the sub-prime crisis and potential sources of instability directly connected with the 'originate-to-distribute' business model. The paper first proposes an effective liquidity risk management and integrated supervisory framework for global financial markets. Second, it analyses some lessons from the financial crisis regarding liquidity management. The study is based on secondary data from the time period of 2004 to 2008 with a sample of the majority Italian banks. The results indicated that order to implementing an efficient liquidity risk management, a more integrated decision making structure for global financial markets is needed. In addition since the financial crisis, analysing and measuring the risk associated with liquidity risk has gained more important, so did the use of Value at Risk (VaR) and conditional value at risk (CaR) for measure liquidity such as Zheng and Shen (2008) observe the problem with liquidity from different perspective by studying lump liquidity risk and its impact on risk measure, such as conditional value at risk (CVaR) and value at risk (VaR) to measures the potential loss in liquidity risk. The paper proposes an integrated and comprehensive framework where by the liquidity discount factor is modelled with mean revision jump diffusion processes and the liquidity risk is integrated in the framework of Value at Risk (VaR) and conditional value at risk CaR. The result first, indicated that the liquidity adjusted VaR and the standard VaR & CVaR can dangerously undervalue the potential loss over a short holding period for rare jump liquidity events. Second, concluded that a better risk measure is the liquidity adjusted CVaR which gives more realistic loss estimation in the presence of the liquidity risk. Also it suggested that an efficient Monte Carlo method can be applied to estimate that conditional value at risk and risk at value of all percentiles from the loss distribution with in single set of samples.

3.2 Liquidity risk management in Islamic Banks

The most familiar region of risk with Conventional and Islamic banks is liquidity risk management and like their Conventional counterparts, Islamic banks need to control liquidity risk management in order to be solvent. Nevertheless, compared to the conventional counterpart, managing and measuring liquidity risk management (LRM) is more challenging and unique for Islamic banks, due to the fact that most available conventional instruments used for liquidity risk management (LRM) are interest-based, and therefore, Alkhalifa (2012). For Islamic banks, monitoring, managing and measuring liquidity risk is an even more challenging due to liquidity shortfalls, as Islamic banks cannot ask for the help of money market or other instruments because as per the Shariah law, Islamic banks cannot collect fund for interest (Sole, 2007). Furthermore, because of the Shari'ah standard it is somewhat difficult for the Islamic banks to invest the excess liquidity for a shorter period of time (Ahmad and Humayoun2010). For years it has been have argued that liquidity risk problem is a major risk facing the Islamic banks (Ray, 1995), and key barrier to the growth of Islamic banks (Vogel and Hayes 1998). In order to be manage liquidity risk management and to be solvent, Islamic banks needs to strengthen their liquidity risk management practices because without an efficient capital market to operate within, Islamic banking will not continue to grow significantly and the market requires liquidity and price transparency to enhance a secondary market Anas and Mounira (2008).

In contract, Abdul Majid (2003) conducted study on the development of liquidity management instruments; the paper investigates the main aspects of liquidity management in Islamic banks. The finding indicates that despite the fact that several successful attempts have been made so far to address the problem of liquidity in Islamic banks much need to be done for an effective way in solving the liquidity issues in Islamic banks. Hassan (2009) argues that Islamic banks in Brunei Darussalam are faced by three types of risk; foreign-exchange risk, credit risk and operating risk. The research established that the three risks are managed very efficiently with the help of risk management practices, which consist of risk assessment and analysis (RAA) and risk identification. In addition, Ghannadian al et (2004) paper observed on the performance of an Islamic banks and how Islamic banking scheme can provide liquidity and aid in the process of money creation through offering transactions

accounts. The paper established that in all developing economies investing funds on basis of profits and losses is an attractive choice for the banks.

3.3 liquidity risk management in Conventional and Islamic banks:

Several researches in the past and present have analysed the liquidity risk management and the differences in financial performance in Conventional and Islamic banks such as Onakoya et al (2013) whose research paper examines the differences in financial performance of conventional and Islamic banks in the United Kingdom between 2007 and 2011 in terms of liquidity, risk, profitability, solvency, and efficiency. The result indicated, in terms of business orientation and performance in the areas of liquidity, risk, profitability, solvency and efficiency there are a few significant differences between them. The paper also indicates that the conventional banks are more profitable in addition to being better able to effectively and timely meet up with financial obligations. On the other hand, Islamic banks are less exposed to liquidity risk and appear to be more cost-effective. According to Iqbal (2012) the concept of liquidity risk in finance first and foremost lies in two areas; (1) the market liquidity risk and (2) the funding liquidity risk. The study focused on the second area of liquidity risk i.e. funding liquidity risk. The objective of study is to compare the liquidity risk of Islamic and conventional banks in Pakistan for the period 2007 to 2010. Pearson correlation was used to find the relationship between variables and regression was used to find the coefficients. The study investigated return on assets (ROA), the size of the bank, return on equity (ROE), capital adequacy ratio (CAR) and non-performing loan ratio (NPL) with the liquidity risk of conventional and Islamic banks of Pakistan. The study found the significant and positive relation of ROE, CAR, ROA and size of the bank with the liquidity risk in both the models, while the NPL is observed negative and significant relation in both the models.

On the other hand, Hidayat et al (2012) evaluated the perceptions of the depositors and employees of the banks on the level of effectiveness of liquidity risk management of Islamic Banks in Bahrain using the descriptive-survey approach to collect primary data from the depositors and bank employees of Islamic banks in Bahrain to describe and understand the effectiveness of liquidity risk management. The results indicate that the respondents are not sure of the effectiveness of the deposit management of Islamic banks in Bahrain. However, the respondents have positive perception on the status of equity based financing which they believed as “effective” part of liquidity risk management. Furthermore, the results also reveal that there is no significant difference perception between the employees and depositors on the

level of effectiveness of liquidity risk management in terms of deposit portfolio and equity financing. On the other hand, there is a significant difference of perceptions on liquidity demands between the two sets of respondents.

From a financial intermediary perspective, Akhtar et al (2011), look into the liquidity risk associated with the solvency of a financial institution, with a purpose to analysis liquidity risk management through a comparative study between Conventional and Islamic banks of Pakistan from a period of four years (2006-2009). The data was based on secondary and had employed 12 banks from conventional and Islamic banks of Pakistan. The paper investigates the significance of size of the firm, capital adequacy (CAR), networking capital (NWC), return on assets (ROA), and return on equity (ROE), with liquidity risk management. Pearson correlation was used to find the relationship between variables and regression was used to find the coefficients. The study found positive but insignificant relationship of size of the banks and networking capital to net assets with liquidity risk. While the capital adequacy ratio in conventional banks and return on asset in Islamic banks is found to be positive and significant relationship with liquidity risk. In addition the study establishes that better performance in essentials of assets and return confirmed that conventional banks had enhanced profitability and liquidity risk managing as compared to Islamic banks.

Meanwhile, Ahmed et al (2011) also studied liquidity risk management of Islamic banks in Pakistan for the period of 2000 to 2007 with a sample of 6 banks. The paper acknowledged two basic reasons for liquidity problem in Islamic banks. First, the lack of liquidity in the market and lack of access to funding, meaning that compared to conventional banks, Islamic banks lack funding because of limited number of acceptable Islamic financial instruments. Second, the difference between Islamic and central bank when state bank refuse to offer the interest free funds to Islamic banks. In the second, the institution is unable to borrow or raise funds at a reasonable cost, when needed. For the purpose of the research, the study selects credit, operational and liquidity risks as dependent variables to evaluate the risk management practices of Islamic banks in Pakistan. The data was collected through secondary sources and used Pearson correlation to find the relationship between variables and regression to find the coefficients. The results show that size of Islamic banks have a positive and statistically significant relationship with financial risks (credit and liquidity risk), while its relation with operational risk is found to be negative and insignificant. The gearing ratio and Non Performing Loans ratio have a negative and significant association with both liquidity and

operational risk while these have directly linked with credit risk. What's more, capital adequacy has negative relationship with operational and credit, while it is found to be positive and with liquidity risk.

According, to Ismal (2010) the potential of liquidity risk should not be ignored especially in the case of Islamic banks in Indonesian. Ismal (2010) analysed the liquidity risk management in the Indonesian Islamic banking industry with a sample of 17 Islamic banks and 409 individuals. The study proposes an integrated and comprehensive program of liquidity risk management, which captures and assimilates the whole aspects of the issue and brings the industry into a better way of managing liquidity risk based on sharia principles. Firstly, this paper investigates the organizational structure of Islamic windows and Islamic banking in managing liquidity. Secondly, it also examines the characteristics of the depositors and their investment behaviours followed by the banks policies and efforts to manage the liquidity. It then distinguishes the potential liquidity problems and Islamic liquid instruments. Lastly, the paper proposes a comprehensive and an integrated program for managing liquidity. The results found that organizations expanding reform the liquidity managing on both the asset and liability and stimulating the practice of the Islamic liquid appliances in the integrated plan. The paper suggests institutional deepening; restructuring the liquidity management on the liability and asset sides; and revitalizing the usage of the Islamic liquid instruments, in the integrated program to improve liquidity management of Indonesian Islamic banking.

The development and the liquidity risk management of domestic and foreign banks were studies by Abdullah at al. (2010). The study founds negative and significant relationship of debt to equity ratio with liquidity risk in domestic and foreign banks. Augmented Dickey Fuller test is used and Johansson's Co-integration is used for long run relationship. The result indicated that the relationship of investment to assets ratio with liquidity risk is negative and insignificant both in domestic and foreign banks. In both domestic and foreign banks the relationship of Return on equity with liquidity risk is negative and insignificant, the relationship of liquid assets with liquidity risk is negative and insignificant in domestic banks and positive and significant in foreign banks. As the result of the findings the study recommended to establish more branches of domestic and enhance debt to equity ratio in order to liquidity risk.

The above presented literature review on Liquidity risk in Islamic and conventional banks data has directed the researcher to build a hypothesis and the variables that has impact and influences liquidity risk. Furthermore it has provided the researcher with the knowledge and data that is needed to carry on with this research. All above studies in the literature view conducted in different countries deal with common problem. Majority of them were conducted to investigate the liquidity risk and liquidity risk management of Islamic and conventional banks. All studies have not concluded the same outcomes because of the studies were done in different in time periods, analytical tools and cultural perspective. The literature also concludes that there have been a fairly small number of academic studies available on Islamic banks about liquidity risk management in UK.

In summary, the literature view indicates that, the of bank size, Net working capital (NWC), return on assets (ROA), return on equity(ROE) and capital ratio (CAR) have effect on liquidity risk. In UK, little work has been done to outline the problems of Liquidity Risk Management in Islamic banks. To the best of my knowledge, no single research in the UK has focused on the factors that influence the liquidity risk managements of Islamic banks of United Kingdom. Therefore, the current study investigates the factors that influence the liquidity risk Management of UK Islamic banks over the period of five years from 2007 to 2011. Therefore, this study aims to fill the gap.

CHAPTER 4

METHODOLOGY

This chapter is one of the most important chapters of the research in order to achieve the objectives of this research and answer the research questions. It outlines the complete process of the research; starting with the research approach, how the data is collected and how is carried out, the research model and hypotheses and how the finishing output of the research is proposed and created.

4.1 Research design:

One of the first steps in research design is to prepare a formation. A research design is the preparation conditions, for analysing and collecting of data in a manner that aims to combined relevance to the research purpose with economy in procedures. The main objective of the research design is to guarantee that any evidence that has been carried out permits the researcher to answer questions. The research design should clarify the nature of evidence needed to answer the research question (Gimblett 2006).

4.1 Objective of the research

The objective of the research is to investigate the factors that influence liquidity risk in UK banks, with a purpose to examine liquidity risk management through a comparative analysis between Islamic and conventional banks of UK for the period of 2007 to 2011. The research examines the following dependent and independent variables:

4.1.1 Dependent variable

Liquidity risk: The liquidity risk of the Islamic and conventional banks is measured using the cash and cash equivalent as well deposits to other banks over total assets. Liquidity ratios are used to determine a company's ability to pay off its short-term debts obligations, for banks or companies the high figures of the ratio show the better liquidity position. Also the ratios are used to determine whether a company will be able to continue as a going concern.

4.1.2 Independent variables

Net working capital (NWC): NWC ratio shows whether a company has adequate short term assets to cover its short term debt. NWC is mostly used in order to help measure the cash and operating liquidity position of the business firm. Anything below 1 indicates negative NWC,

at the same time anything over 2 means that the company is not investing excess assets. Most analysts believe that a ratio between 1.2 and 2.0 is sufficient. The net working capital is calculated as;

$$\text{NWC} = \text{Current liabilities} / \text{current Assets}$$

The Size of the bank is measured by taking the logarithm of total assets for each both Islamic and Conventional Banks.

Return on Assets (ROA): ROA is ratio of net profit of the banks to total assets. The return on assets ratio is a measure of how well much a business is using its assets to produce more income. Net income is the amount earned by banks after deducting out the expenses incurred, including tax and depreciation. High return on assets can be attributed to a rapid turnover of assets, a high profit margin, or a combination of both. ROA is calculated as:

$$\text{ROA} = \text{Net Income after tax} / \text{Total Assets}$$

Return on Equity (ROE): ROE is measured as the ratio of net income to total equity. The high ratios indicate the better return to the investments of the shareholders. ROE shows what the company earned on its investment in the business during the accounting period. ROE is calculated as:

$$\text{ROE} = \text{Net Income after tax} / \text{Total Equity}$$

A Capital Adequacy Ratio: CAR is a measure of a bank's capital. Capital ratios express a bank's capital as a percentage of its risk weighted assets. This ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world. Capital requirements are part of the regulatory framework governing how banks and depository institutions are managed. Regulatory capital is analysed into two tiers: Tier 1 capital, which includes ordinary share capital, share premium and retained earnings, less intangible assets. Tier 2 capital, which includes collective impairment allowances, restricted to a maximum amount. Both Tier 1 and Tier 2 capital resources are defined by the UK FSA. CAR is calculated as:

$$\text{CAR} = \text{Tier 1 capital} + \text{Tier 2 capital} / \text{Total weighted risk}$$

4.3 Hypothesis Question

The following hypothesis questions were conducted from the literature review on liquidity risk management in Conventional and Islamic banks to find the factors that influence the liquidity risk. These hypotheses are base on the studies from (Akhta el (2011) and Iqbal (2012) in their research study.

1. H1: There is a negative relationship between net working capital and liquidity risk.
2. H2: There is a positive relationship between the size of the bank and liquidity risk.
3. H3: There is a positive relationship between return of equity and liquidity risk.
4. H4: There is a positive relationship between capital adequacy ratio and liquidity risk.
5. H5: There is a positive relationship between return on assets and liquidity risk.

4.4 Research Methods

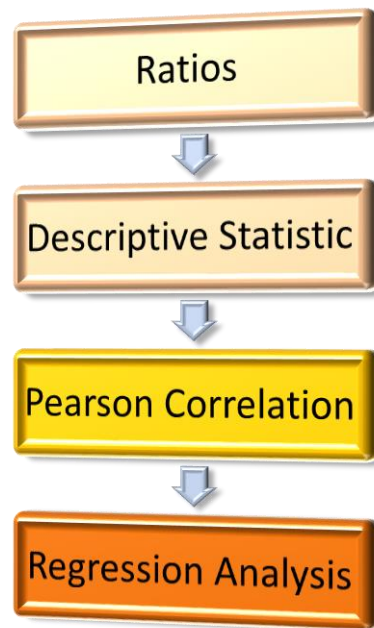
Secondary data is existing information that has been collected from different sources and made publically available such as, websites, published research journals, published books, websites, bank's financial reports, including the financial statements, management's discussion, and footnote, which have all been used as research methods in this research.

4.5 Collection of data

In the UK, currently there are 22 banks, of which 5 are full Shari'ah compliant. However, this dissertation uses a sample of 6 banks, of which 3 are Islamic and 3 from Conventional banks. A list of Islamic and conventional banks that are considered for this research is detailed in (Table 4.3.1). Data was collected from the bank's annual reports directly from the banks website including the financial statements, management's discussion, and footnotes and other various journals and articles from a variety of publishers. All variables were calculated using income statement and balance sheet values. The balance (book) value was used because some of the banks did not provide any market values related to the variables that were used in this research. Moreover, when market values are considered in such studies there is always a certain extent legitimate question of the data for which the market values refer to.

4.6 Data Analysis Tools

Data analysis tool means which tools the research used for present and analysed the data. The main tools of analysis are mathematical and statistical tools. In this research, financial ratio and statistical tools are used to examine the factors that affect liquidity risk. Descriptive statistics, correlation and regression are used in the following order.



4.6.1 Ratios

An arithmetical connection that links two figures is called ratio. This is one of the most useful analytical tools to assess and evaluate in respect to one variable over another. The stage one of the researches is to analysis the ratios performance of Islamic and Conventional banks because ratio analysis is the first tool of financial analysis and financial analysis itself is an important tool for analysing the company's financial performance. It is used by banker, investors, management and finance people to understand the financial position of the company and the ratios can be compared with the industry sector as a whole, competition threats and currency problems. Furthermore, depending on the ratio used, it can assess a company whether it has enough cash to meet its short term obligations (liquidity/quick). In another words, ratio analysis is very important part of whole business strategic planning. For this research, the ratio analysis is done on the historical data from the period 2007-2011 of the Islamic and Conventional banks of UK. To calculate the ratios financial data from the bank's annual reports is used and to evaluate the liquidity risk that is associated with in conventional and Islamic banks of UK. Description of dependent and independent variables along with their proxies are specified in (Table 4.4.1)

Table 4.2.1 Variables and their proxies						
Symbol	Variable	Proxies				
A	Value of the Intercept					
Y1	Liquidity Risk	Total liquid Assets/ liabilities				
X1	Size of the Bank	Logarithm of total assets				
X2	Networking capital	Current Assests less current Liabilities				
X3	Return on Equity	Earnings Available for common stockholders/Common Stock Equity				
X4	Capital Adequacy Ratio	Tier 1 Capital + Tier 2 Capital/ Risk Weighted Assets				
X5	Return on Assets	Asset Utilization Ratio = Operating Income/Total Assets				

4.6.2 Descriptive Statistics

After the ratios are calculated, the research uses descriptive statistics because most analysis requires a summary of data in the form of descriptive statistics which helps to describe and show the data in a meaningful way. For this dissertation the use of descriptive statistics is important because if the research simply presents the data without summering, it would be hard to visualise what the data was showing and therefore descriptive statistics of dependent and independent variables of the research displays the Standard Deviation, mean, minimum and maximum values of Conventional and Islamic banks is carried out. Excel is used to prepare, investigate, measure and compare the liquidity risk for conventional and Islamic banks according to their diverse individuality.

4.6.3 Pearson correlation Analysis

The third stage of the research would be using the Pearson Correlation Coefficients to measure the correlation of independent variable to dependent variables in Islamic and Conventional banking during the period of 2007-2011. The yearly average for all ratios for Conventional and Islamic banks is taken for comparison. The Pearson correlation Coefficients determines whether the correlation between variables is positive or negative, whereby a zero shows no relationship between the two measures variables, $r = 1.00$ shows a positive relationships and $r = -1.00$ reveals a negative relationship between independent and dependent variables. Pearson Correlation would be calculated with the following equation where:

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2} \sqrt{n(\sum y^2) - (\sum y)^2}}$$

5

6 n= is the sample size

7 r= linear correlation coefficient

8 x=efficiency score

9 y=risks

4.6.4 Regression Analysis

Stage four of the research uses regression analysis in order to validate the hypotheses. In order to test the hypotheses liquidity risk is dependent variable and the independent variables are: the size of the banks, return on assets (ROA), capital adequacy ratio (CAR), return on equity (ROE) and net working capital (NWC).

CHAPTER 5

RESULTS AND DISCUSSIONS

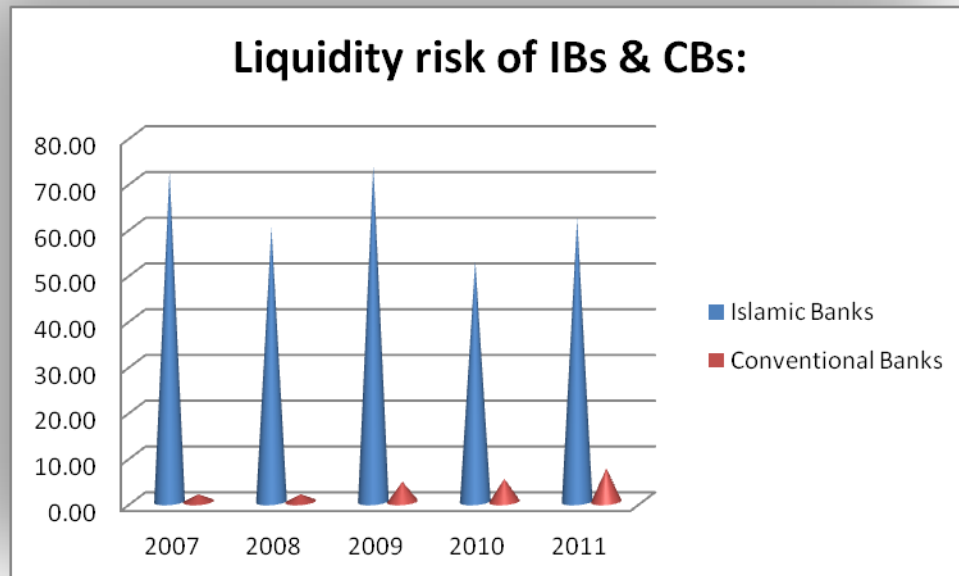
The main objective of this chapter is to analysis and to present the results and discussions of the data that has been analysed. First, the results of the ratios are presented from the dependent (Liquidity risk) and independent variables (the size of the bank, NWC, ROE, CAR, and ROE). For a better comparison and judgment of the ratios for Islamic banks with conventional banks some control over the other divergent factors between the two types of banks has been consisted. For example, comparing Islamic banks with major international conventional banking operating at global level will not make sense because of sheer differences in their size, market, operations, influence and regulatory environment. To control for these differences and yet keeping the comparison with well performing conventional banks following methodology used. Three large banks were selected in UK. This is followed by carrying out descriptive statistics, the results of the Pearson correlation to find out the relationships between the dependent and independent variables and finally the use of regression to test the hypotheses.

5.1 Ratios Analysis

5.1.1 Liquidity risk for Islamic and Conventional Banks

Maintaining the sound liquidity risk position is one of the important signs of how well the bank is performing because without ensuring the adequate liquidity the banking segment will not be able to hold its present leading position in mobilizing resources and allocating funds in profitable ends in the economy. Furthermore, the failure of the bank to meet its obligations will result in poor loss of creditors, credit worthiness and confidence. To analysis the state of liquidity (pass, present and during the crisis) the liquid assets to total assets ratio is used, where the liquid assets are defined as cash and cash equivalents as well as deposits with other banks.

Graph 5.1.1 displays the liquidity risk of Islamic and Conventional banks



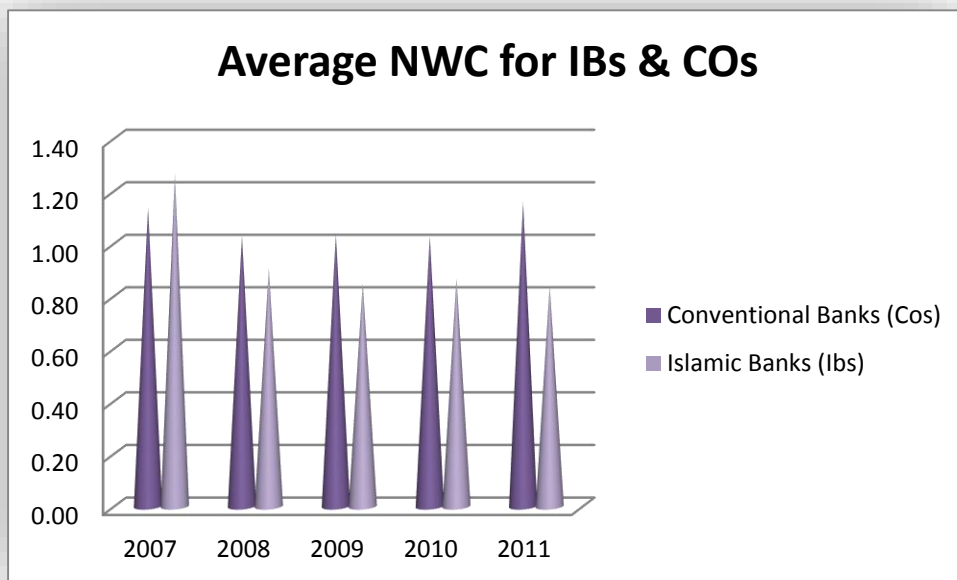
According to graph 5.1.1, for the five years from 2007 to 2011 the range of liquidity ratio in conventional banks is 4.25 percent in comparison to the liquidity ratio of average Islamic bank of 61.91 percent. This comparison undoubtedly provides that Islamic Bank in UK are holding high proportion of liquid assets than conventional banks. Even during the financial crisis, which occurred for the period of 2007 to 2008, the liquidity of Islamic banks was more than three times higher than conventional banks. Overall, on average Islamic banks shows very high liquidity ratio, which indicates a drag on the earnings of the banks as more liquid assets generally bring in low or no return. In general Islamic banking is new in UK and where new Islamic bank are coming into being very fast, we can expect to see erratic movements in the liquidity ratios. The main for this is due to the fact that the newly established banks have most of their assets in liquid form in the beginning. Based on this trend analysis, it is found that the crisis has a very little impact on the extent of liquidity risk in the Islamic banks.

5.1.2 Net Working Capital (NWC)

In this research the NWC is used in order to measure the cash and operating liquidity position of the banks. Anything below 1 indicates negative NWC and at the same time anything over

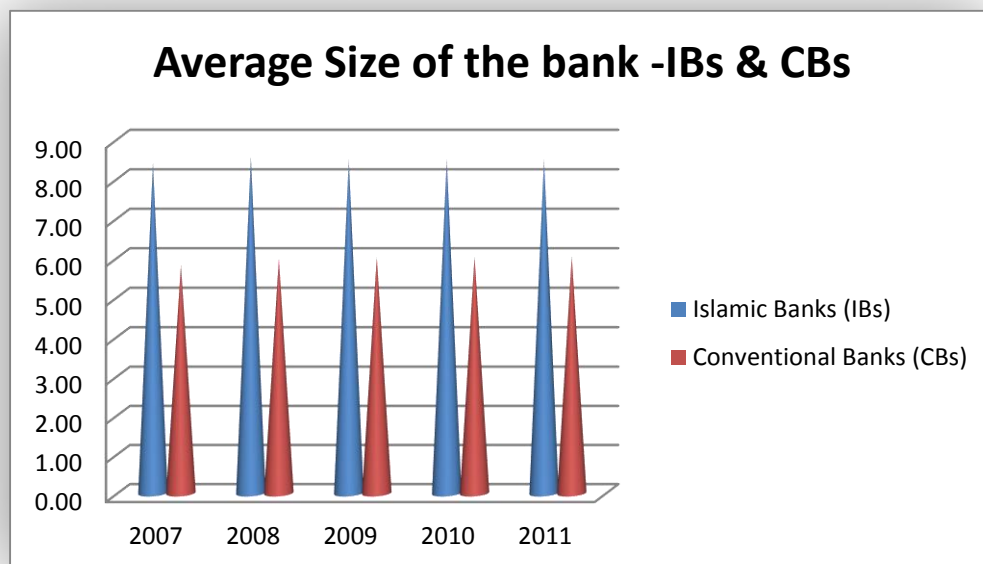
2 means that the company is not investing excess assets. Graph 5.2 reports the net working capital (NWC) for Conventional and Islamic banks. Conventional banks (CBs) indicate sufficient positive working capital throughout period as the NWC ratio is over 1; this means that the CBs has the cash on hand to pay for the items it needs. Islamic banks working capital has been positive in 2007 (1.20) to 2008 at 1.00. However, from 2008 to 2011 the results are negative meaning that the banks are not investing excess assets. Overall, conventional banks with positive working capital will always outperform Islamic banks with negative capital.

Graph 5.1.2: Net working capital (NWC)



5.1.3 The Size of the Bank ratio

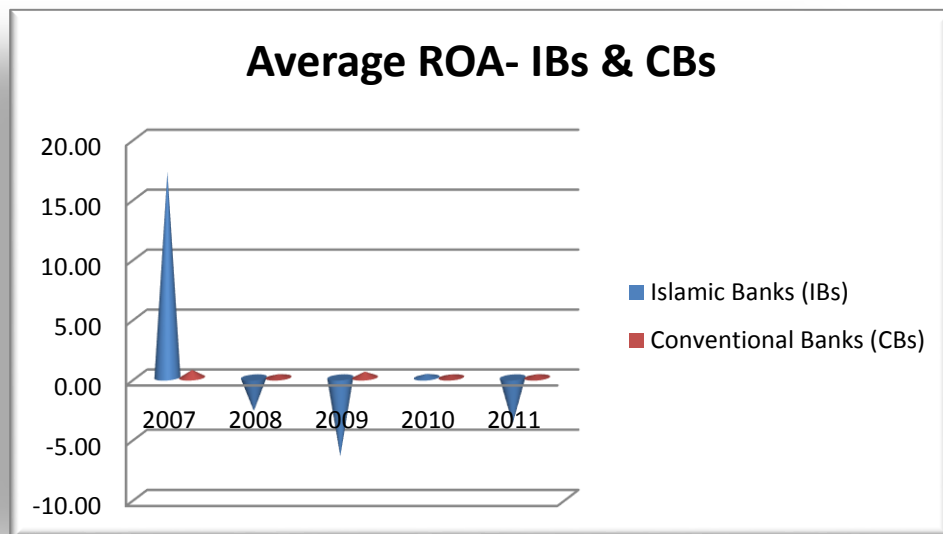
Graph 5.1.3: The size of the bank



Reporting to the graph 5.3, the size of Islamic banks is more than conventional banks because Islamic banks hold more assets than the Conventional, also this is due to the facts that Islamic banking in the UK is having a growth spurt at the moment. In the last five years, Islamic banks have grown more rapidly growth than their conventional equivalents. Nonetheless both banks are showing increase of size from the period 2007-2011.

5.1.3 Return on Assets (ROA)

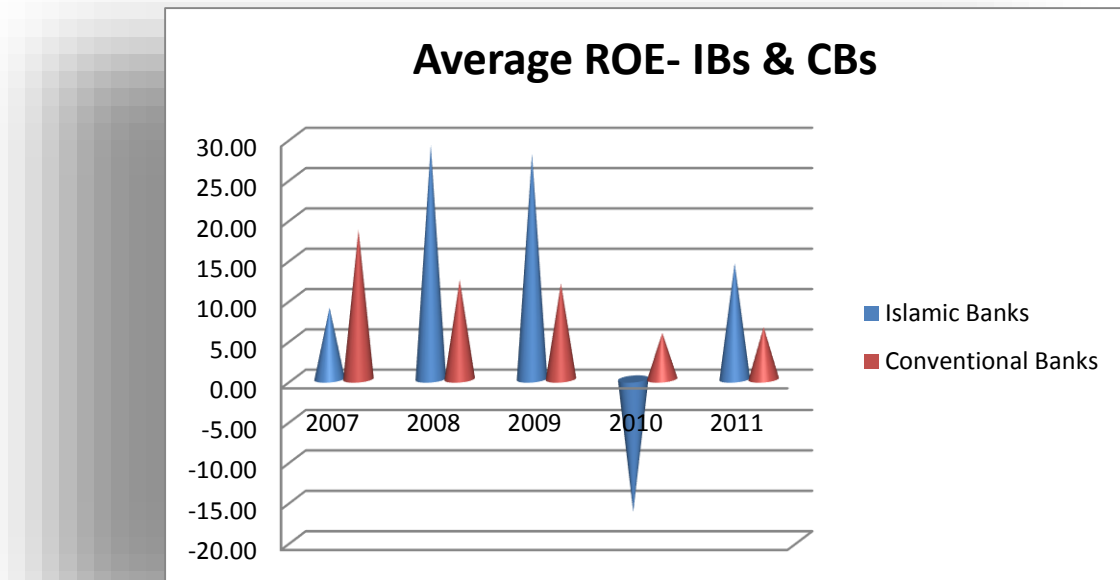
Graph 5.1.3: Return on Assets (ROA)



From the analysis of graph 5.1.4, it is fairly clear that from 2007 to 2011, the return on assets (ROA) of the conventional banks is presentation a diminishing trend. The ROA of the Islamic bank fell tremendously from 2007 to 2008, which shows the lack of management and that Islamic banks have not managed their assets affectively to generate profits. What's more, Islamic banks are focusing on development and growth strategies which deviates them from profit- oriented approaches, whereas Conventional banks are earning on their invested assets which establishes better investment decision, more profit for banks and shareholders. Generally, ROA figures of conventional banking sector are showing a unhealthy sign and further improvements in the coming years is needed.

5.1.4 Return on Equity (ROE)

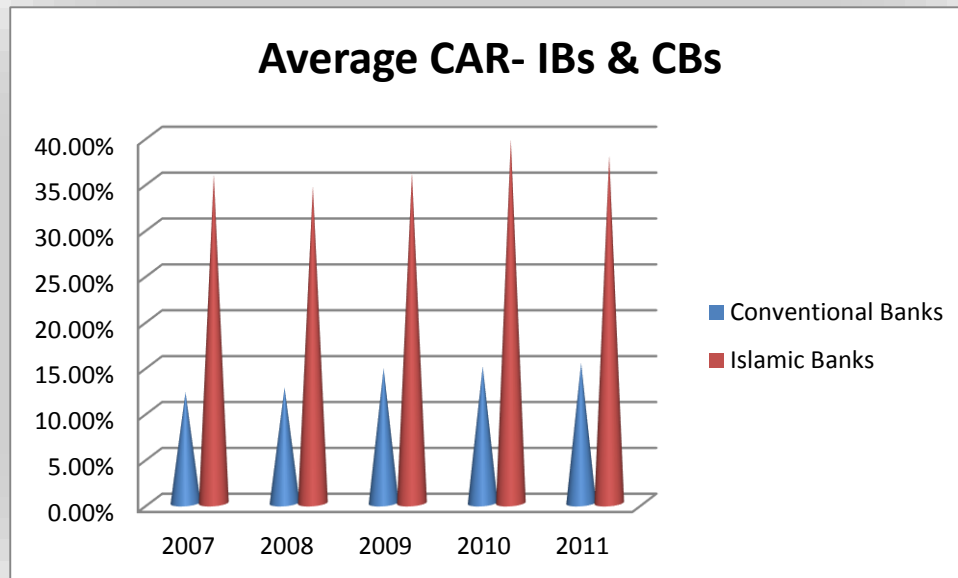
Graph 5.1.4: Return on Equity (ROE)



The result from graph 5.5 shows that the ROE of the conventional banks has gradually decreased since 2007-2009, whereas Islamic banks were at their heights during 2008 and 2009. Showing that a less excess to the market is seen where the Islamic banks are trying to expand initially. However, a decreasing trend is seen of the ROE in both banks throughout the years 2010-2011. Islamic banks have shown a tremendous improvement in year 2011 in comparison with conventional banks. This shows that slowly Islamic banks are moving towards a better ROE position which is in line with the conventional banks.

5.1.6 Capital Adequacy Ratio (CAR)

Graph 5.1.6: Capital Adequacy Ratio (CAR)



The capital adequacy ratios of the Islamic banks are observed to be a lot higher than the conventional banks. Islamic banks have constantly maintained a very high CAR over 35%. This means that they had plentiful capital to manage in case there is any shock to the balance sheet. Their high CAR indicates their capability to maintain confidence in the Islamic banking system and protect their depositors and lenders. In addition it shows their financial soundness. This comparison shows that in term of CAR, Islamic banks are many steps ahead of Conventional banks and have more capital than them. Overall, the bank's principle is to maintain a strong capital base so as to maintain creditor, investor and market confidence and to maintain the future development of the banks.

5.2 Descriptive Statistics

The research uses descriptive statistics because most analysis requires a summary of data in the form of descriptive statistics. Table 5.2.1 and table 5.2.2 demonstrate descriptive statistics of dependent and independent variables of the current research. The analysed statistics figure displays the Standard Deviation, mean, minimum and maximum values of Conventional and Islamic banks. The value of the mean reports the arithmetical average of the variable which are included in the dissertation. The statistics indicate that the mean for liquidity risk for Islamic banks is 64.06 compare to 3.98 for conventional banks. This indicates a massive portion of fixed assets in the total assets of Islamic banks. The maximum and minimum values explain the lower and the highest value of the variable. The standard deviation exhibits the diversity or variability in the data set of each variable. A lower standard deviation shows towards that the data points are inclined to be extremely close to the mean; at the same time as high values of standard deviation points that the data set is broaden out over a large range of values.

Table 5.2.1 Descriptive statistics of Islamic banks (IBs)

Descriptive Statistics for Islamic Bank				
Value of the Intercept	Mean	Minimum	Maximum	Std. Deviation
Liquidity Risk	64.06	52.64	73.55	8.77
Networking capital	0.96	0.84	1.25	0.17
Size of the Bank	8.48	8.40	8.55	0.05
Return on Equity	12.77	-16.46	29.06	18.50
Capital Adequacy Ratio	13.90	12.08	15.26	1.46
Return on Assets	5.00	-6.54	17.17	9.44

Table 5.2.2 Descriptive Statistic of Conventional banks (CBs)

Descriptive Statistics for Conventional Bank				
Value of the Intercept	Mean	Minimum	Maximum	Std. Deviation
Liquidity Risk	3.98	1.60	7.25	2.40
Networking capital	1.08	1.03	1.16	0.06
Size of the Bank	5.97	5.81	6.03	0.09
Return on Equity	10.98	5.72	18.53	5.19
Capital Adequacy Ratio	37.50	34.56	39.62	2.27
Return on Assets	0.38	0.24	0.63	0.17

5.3 Pearson Correlation Coefficients

For this research the Pearson correlation test was carried out to establish the relationship between the dependent and independent variables. Table 5.3.1 provides the result of Pearson correlation analysis for Islamic banks. The result indicates that net working capital (NWC) (0.700) shows a strong positive and significant relation with the liquidity risk. The correlation between liquidity risks and that the size of the bank has negative and significant relation with the liquidity risk at 94% level of significance. The Pearson value of the size is -0.552 which shows the weak relation between the liquidity risk and size of the Islamic banks. ROA shows a weak positive and significant relation. ROE indicates a strong positive and significant relation. The CAR shows a negative and significant relation with the liquidity risk. NWC is positively correlated with return on equity and has negative correlation with capital adequacy ratio (CAR). Size of the bank is negatively correlated with return on assets (ROA).

Table 5.3.1 Pearson correlation coefficient of Islamic banks (IBs)

Correlation for Islamic banks (IBs)						
	<i>Liquidity Risk</i>	<i>Net working Capital</i>	<i>Size of the Bank</i>	<i>Return on Equity</i>	<i>Capital Adequacy Ratio</i>	<i>Return on Assets</i>
Liquidity Risk	1.000					
Net working Capital	0.700	1.000				
Size of the Bank	-0.552	-0.056	1.000			
Return on Equity	0.581	0.686	0.330	1.000		
Capital Adequacy Ratio	-0.320	-0.735	0.149	-0.271	1.000	
Return on Assets	0.283	0.245	-0.740	-0.324	-0.685	1.000

Table 5.3.1 Pearson correlation coefficient of Conventional banks (CBs)

Correlation for Conventional Bank (CBs)						
	<i>Liquidity Risk</i>	<i>Net working capital</i>	<i>Size of the Bank</i>	<i>Return on Equity</i>	<i>Capital Adequacy Ratio</i>	<i>Return on Assets</i>
Liquidity Risk	1.000					
Net working capital	0.281	1.000				
Size of the Bank	0.736	-0.374	1.000			
Return on Equity	-0.821	0.142	-0.901	1.000		
Capital Adequacy Ratio	0.697	-0.196	0.584	-0.586	1.000	
Return on Assets	-0.501	0.257	-0.791	0.872	-0.151	1.000

Table 5.3.1 shows the correlation for conventional banks. The correlation shows that the size of the bank has the positive and significant relation with the liquidity risk. The Pearson value of the size is 0.736 which shows the strong relation between the liquidity risk and size of the conventional banks. Net working capital shows a negative relation with the liquidity risk and the relation is significant. Both ROE and ROA shows a negative and significant relation. The capital Adequacy Ratio (CAR) is found to be strongly positively correlated with Return on Assets (ROA), and the Size of the bank has negative correlation relationship with ROA.

Overall, Pearson correlation analysis findings show that liquidity risk (dependent variable) is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE) for Conventional banks. In addition, regression analysis findings on Islamic banks show that liquidity risk is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE). The results support the previous researches of (Akhta el (2011), Abdullah at el (2010) Iqbal (2012), Isshaq at el (2009) and (Sawada (2010) in their research. Sawada (2010) found that of the bank is negatively and significantly related to the liquidity risk in the Islamic banks. However, more interestingly, the findings of the correlation shows negative relation of size of the bank, CAR with NWC and negative relation between ROA and size of the bank for both banks.

5.4 Regression Analysis

Regression analysis has been conducted in order to certify the hypotheses draw from the previous chapters of this research. Regression analysis uses statistical techniques to identify relationships (or correlation) between variables. Regression analysis is applied on both Islamic and conventional Banks separately and the results are compared, in order to explain

how any changes in dependent variables may affect the determinants of liquidity risk or the independent variables of these banks which are Return on Equity (ROE), Return On Asset (ROA) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC). Table 5.4.1 shows that results of regression analysis for four independent variables are regressed by the data of Conventional banks of UK from. The adjusted R- square value is 0.676 which indicates that 67.7% of the liquidity risk is explained by the independent variables. The R square value for the conventional bank is 0.747 which shows that 74.7% of the variability in the liquidity is explained by the independent variables. Here the F-statistics is more than 3.00 which shows that the conventional banks are statistically significant.

Table 5.4.1 Regression Analysis of Conventional Banks

Regression Analysis of Conventional banks				
R Square	Adjusted R Square	Standard Error	F Statistic	F-Sign
0.9094	0.6376	1.4454	3.3461	0.3774
Standardized Coefficients				
	Beta	Std. Error	t stat	P-Value
Intercept	-139.140	146.124	-0.952	0.516
Net working Capital	22.310	13.841	1.612	0.354
Size of the Bank	20.128	22.337	0.901	0.533
Return on Equity	-0.100	0.368	-0.273	0.830
Capital Adequacy Ratio	0.672	0.450	1.492	0.274
Return on Assets	-5.699	5.999	-0.950	0.442

For Islamic banks, the adjusted R- square value for Islamic banks is 0.836 which indicates that 83.6% of the liquidity risk is explained by the independent variables. The R square value for the conventional bank is 0.959 which shows that 95.9% of the variability in the liquidity is explained by the independent variables. The size of the bank has negative, capital adequacy ratio (CAR) and net working have all have negative relation with liquidity risk. Return on assets (ROA) and Return on equity (ROE), have positive relation with liquidity risk.

Table 6.4.4 Regression Analysis for Islamic banks

Regression results for liquidity risks- Islamic banks				
R Square	Adjusted R Squa	Standard Error	F Statistic	F-Sign
0.9592	0.8366	3.5455	7.8275	0.2556
Standardized Coefficients				
	Beta	Std. Error	t stat	P-value
Intercept	1300.1157	367.3866	3.5388	0.1753
Net working Capital	-4.1120	12.3851	-0.3320	0.7959
Size of the Bank	-145.9887	42.5535	-3.4307	0.1806
Return on Equity	0.4139	0.1010	4.0990	0.1523
Capital Adequacy Ratio	-1.4262	5.5074	-0.2590	0.8199
Return on Assets	0.1122	0.8508	0.1319	0.9071

Tables 5.4.1 and 5.4.2 show the analysed regression data for Conventional and Islamic banks, which was interpreted to answer the following hypothesis question as follows:

H1: There is a negative relationship between net working capital and liquidity risk.

H2: There is a positive relationship between the size of the bank and liquidity risk.

H3: There is a positive relationship between return of equity and liquidity risk.

H4: There is a positive relationship between capital adequacy ratio and liquidity risk.

H5: There is a positive relationship between return on assets and liquidity risk.

Hypothesis 1

The first hypothesis address that there is no correlation relationship between net working capital (NWC) and liquidity risk. Table 5.4.1 shows that there is correlation relationship between NWC and Liquidity risk for Islamic banks and H2 is accepted, whereas the relationship between liquidity risk and NWC is positive for Conventional banks as shown in table 5.4.2. Thus, this research rejects the first hypothesis for conventional banks.

Hypothesis 2

The second hypothesis addressed that there is a positive correlation between the size of the bank and liquidity risk. There is a positive correlation between the size of the bank and liquidity risk for conventional banks and there is no correlation relationship for Islamic bank. Consequently, this research rejects the second hypothesis for Islamic Banks.

Hypothesis 3

The third hypothesis states that there is a positive relationship between return of equity and liquidity risk; the result indicated there is a positive correlation between ROE and liquidity risk in conventional banks and positive correlation in Islamic banks. As a result, this research rejects the third hypothesis.

Hypothesis 4

The fourth hypothesis states that, here is a positive relationship between capital adequacy ratio and liquidity risk. The result revealed there is negative correlations between capital adequacy ratio (NWC) and liquidity risk in Islamic banks and positive correlation in Conventional banks. Therefore, this research rejects the fourth hypothesis for Islamic banks.

Hypothesis 5

The fifth hypothesis states that, here is a positive relationship between return on assets and liquidity risk. In conventional banks there is no correlation between ROA and liquidity risk, while in Islamic banks there is positive correlation. As a result, this research rejects the fifth hypothesis for Conventional banks.

Overall, regression analysis findings show that liquidity risk (dependent variable) is positively related to (1) return on assets (ROA), return on assets (ROE) and (2) negatively related size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) for Conventional banks. In addition, regression analysis findings on Islamic banks show that liquidity risk is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE). The results support the previous researches (Akhta el (2011), Abdullah at el (2010) Iqbal (2012), Isshaq at el (2009) and (Sawada (2010) in their research. Sawada (2010) found that of the bank is negatively and significantly related to the liquidity risk in the Islamic banks. The findings of this paper lend some support to the finding of Abdullah at el (2010) in which they found that the size of the bank with liquidity risk is negative. For Conventional banks the size of the bank is positive in this research and the same results are supported by (Iqbal (2012). In Addition, return on assets (ROA) in Islamic banks and capital adequacy ratio (CAR) in conventional banks is found to be positive. These results are supported by Akhta el (2011). Furthermore, the research founds positive relation of return of

equity (ROE) and return on assets with the liquidity risk in Conventional banks, these results are in line with results of Iqbal (2012) and supported by (Akhta el at 2011), However, more interestingly, the findings of this dissertation contradict the findings of Iqbal (2012) in which they found a positive relationship between liquidity risk, return on assets and return on equity in Islamic banks. Nevertheless, the present dissertation successfully tested the factors that influence in Islamic and Conventional banks of UK.

CHAPTER 6

SUMMARY, CONCLUSION AND RECOMMENDATION

To begin with, the research summary the aim and objective of the dissertation; followed by brief decision on the results and the findings of the two parts of the dissertation: Liquidity risk management in Islamic banks and the empirical research chapter. Then, the complete analyses and the overall outcome of the dissertation are concluded. After the research summary, this dissertation gives several recommendations not only to Islamic banks of the UK but also to other countries that have the same Islamic banking industry in order to mitigate the liquidity risk. In addition, the dissertation opens some suggestion for further researchers especially if Islamic banking industry changes in the further and reports the limitations of the dissertation.

6.1 Research summary

First the research starts off with indentifying some definitions for liquidity and liquidity risk from multinational institutions because Liquidity in financial markets and intermediaries has many different meanings. First of all, since 1992 the Basel Committee on Banking Supervision (BCBS) has been focussing on developing a greater perspective and understanding the technique in which international banks manage their liquidity on a global basis. In 1992 the (BCBS) made the effort to define ‘The Framework for Measuring and Managing Liquidity’, by bringing together a practice and technique. This paper emphasises that managing and measuring liquidity should be among the most fundamental performance of commercial banks by agreeing that a bank is able to meet its liabilities as they come due. Eight years later, the Basel Committee on Banking Supervision (2000) defined liquidity as ‘the ability to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses’ (BCBS 2000).

In 2006, the Joint Forum of the Basel Committee had integrated and brought forward an ‘integrate liquidity risk management in financial groups and importantly, the Joint Forum identified the liquidity risk into two elements; (1) the funding liquidity risk and (2) market liquidity risk. all the same, this differentiating has previously been implemented by the European Central Bank (2002). The funding liquidity risk is defined as, the risk that the firm is not be able to economically meet both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition

of the firm⁵. Market liquidity is the risk that a firm will not be easily able to offset or eliminate a position without considerably affecting the market price because of inadequate market depth or market disruption⁶. From this paper onwards, the differences between funding liquidity risk and market liquidity risk has been established and became an important element in all the literature on liquidity risk management. Alongside the Basel Committee, other institutions in the years had investigated the liquidity risk is well, such as the Financial Stability Forum (FSF) and Committee of European Banking Supervisors (CEBS).

Finally, In December 2010, the Committee on Banking Supervision (BCBS) issued Basel III: BCBS has come up with new recommendations for liquidity risk management in Basel III, issuing International framework for liquidity risk measurement, standards and monitoring. The new Basel III liquidity rules mark the first time that specific global quantitative minimum standards for liquidity have been introduced. Among them they are two quantitative measures: (1) liquidity Coverage Ratio (LCR) and (2) Net Stable Funding Ratio (NSFR). LCR is to ensure that the banks have enough liquid assets to cover for 30 days of net cash out flows. NSFR is to encourage more medium to long funding. Monitoring of the new standards commenced as of year-end 2010. The LCR is expected to take effect in 2015, although some banks will be given more time to meet the requirements. Under Basel III, individual banks are instructed to maintain higher and better quality liquid assets and better liquidity risk

Second the research analysis liquidity risk management in Conventional and Islamic banks. Liquidity risk has remained an important area of research for both Islamic finance as well as conventional one. Yet, Conventional finance has nowadays established several tools for managing liquidity risk, whereas Islamic financial institutions are still struggling to manage liquidity risk management (LRM). Liquidity risk management (LRM) is just as important to the Islamic banks as it is to the conventional banks but it is more challenging and unique for Islamic banks, because most available conventional instruments used for liquidity risk management (LRM) are interest-based, and therefore, not in line with law of the sharia'ah. From this research, the main potential liquidity problem in Islamic banks is because of the lack, or limited availability number of financial instruments that are accepted by Shari'ah scholars. Two of the instruments widely used by conventional banks, namely inter-bank

⁵ source: BIS, The management of liquidity risk in financial groups, May 2006)

⁶ source: BIS, The management of liquidity risk in financial groups, May 2006)

deposit and government and corporate bonds or note are interest bearing and therefore are viewed as non Shari'ah compliant. As a result, Islamic banks do not have the same funding options that are available to conventional banks in the inter-bank market as mentioned beforehand. Furthermore, specific aspects of Islamic contracts could add to the potential for liquidity problems in Islamic Banks. These factors include: cancellation risks in murabahah, the Shari'ah requirement to sell murabahah contracts only at par thereby limiting the scope for secondary markets for sale based contracts, the illiquidity of commodity markets, and prohibition of secondary trading of salam or istisna contracts (Syed Ali 2004).

Third, to achieve the main objective of this research; to investigate the factors that influence liquidity risk in Islamic and Conventional banks of UK, first ratios analysis was carry out for dependent and independent variables for Islamic and Conventional banks. The ratio analysis shows that Islamic banks have better liquidity position compared to the conventional banks. This show the Islamic banks have more liquid assets to pay off its obligations. The capital adequacy ratios of the Islamic banks are observed to be much higher than the conventional banks. This shows that Islamic banks have strong cushion against any balance sheet shocks such as payment of liabilities and the cover up their losses to protect their depositors and lenders. The size of the banks of Conventional banks is more than Islamic banks less because Islamic banks have only been operated in UK since 2004. The descriptive statistics displays the Standard Deviation, mean, minimum and maximum values of Conventional and Islamic banks. The descriptive statistics indicate that the mean for liquidity risk for Islamic banks is 64.06 compare to 3.98 for conventional banks. This indicates a massive portion of fixed assets in the total assets of Islamic banks.

Pearson correlation analysis findings show that liquidity risk (dependent variable) is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE) for Conventional banks. In addition, regression analysis findings on Islamic banks show that liquidity risk is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE). Overall, regression analysis findings show that liquidity risk (dependent variable) is positively related to (1) return on assets (ROA), return on assets (ROE) and (2) negatively related size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) for Conventional banks. In addition, regression analysis findings on Islamic banks

show that liquidity risk is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE).

Finally, based on the findings in the liquidity risk management disclosure, it is important for the bank regulators and the standard setters to work together to improve the risk disclosures, including liquidity risk. The BCBS's paper on sound practices and principles relating to operational, credit and market of banks is similar to the prudential standard issued by Islamic Financial Services Board (IFSB) on Guiding Principles on Risk Management; however, these guidelines issued by (IFSB) do not give any thoughts of being particularly into risk disclosure. This dissertation is one of the few studies with a focus on the liquidity risk management in Conventional and Islamic banks in the UK.

6.2 Conclusion

The main aim of this research was to examine that factors that influence liquidity risk management through a comparative study between Islamic and Conventional Banks of UK for the period of 2007-2011 by finding out the factors that influence liquidity risk. The research employed 6 banks; 3 from Conventional and 3 from Islamic banks of UK. Ratios, descriptive statistics, correlation and regression analysis was used. In the process, the dissertation (1) identify the definitions of liquidity and liquidity risk from multinational institutions, (2) what causes Liquidity risk management in Conventional and Islamic bank in and in addition, (3) examines the liquidity risk management disclosure in the annual reports of selected Islamic banks in UK. The study found that liquidity risk (dependent variable) is positively related to (1) return on assets (ROA), return on assets (ROE) and (2) negatively related size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) for Conventional banks. In addition, regression analysis findings on Islamic banks show that liquidity risk is positively related to (1) size of the banks, capital adequacy ratio (CAR) and net working capital (NWC) and negatively related to (2) return on assets (ROA), return on assets (ROE).

6.3 Recommendations

After analysis and identifying the liquidity risk, this research gives several recommendations not only to Islamic banks of the UK but also to other countries that have the same Islamic banking industry in order to mitigate the liquidity risk. This is also the contribution of the research to the knowledge and to add value to the Islamic banking literature on liquidity risk.

1. This research recommends that banking regulators should improve the current practice of liquidity risk management; by issuing proper guidelines to assess the developments on liquidity management for Islamic banks. These guidelines can be 'principles based' in the first stage in order to encourage and develop a liquidity risk management culture. The recommendations of this research would bring the UK Islamic banking industry to a better way of managing liquidity risk based on Sharia'h and standard banking concepts. Nonetheless, the banks should be aware that such implementation requires cooperation, involvement and strong commitment from all parties related to the Islamic banking industry.
2. Based on the finding of the liquidity risk management disclosure, it is recommended that the bank regulators and the standard setters to work together to improve the risk disclosures, including liquidity risk. The currently guidelines do not look specifically into risk disclosure. This will also have adequate disclosure in the annual reports, particularly risks information; future banking crises could be avoided.

6.4 Future Research

Future research is needed to find the drivers of liquidity risk in Islamic banking and how different it is from conventional banking. For example the research can investigate other factors that may affect liquidity risks. For example, whether non payment loan (NPL), the proportion of murabahab in total assets or liabilities and the size of deposits have any relation with liquidity risk, so that such studies could increase the understanding of the correlation between liquidity risk and other ratios. In addition, the research opens some potential areas of future development, particularly if the present condition of the Islamic banking industry changes in the future.

6.5 Limitations of the dissertation

The UK's Islamic banks all account on a calendar year basis. At the time of writing this research, the selected Islamic banks did not publish their 2012 annual accounts. Currently in the UK, there are five full fledged Islamic banks that were established between 2004 and 2008.

The research only used 3 selected Islamic banks because of the inadequacy and lack of availability of required data. In addition, the findings of this study could only be generalised to Islamic and Conventional banks that are similar to those that were included in this dissertation. The other limitation of the dissertation is listed below:

- The sample size is small and the investigation is limited to banks which are full-fledged Islamic banks in the UK.
- Only Four years is covered from fiscal year 2006/2007 to 2010/2011 is investigated.
- For the ratio analysis of the liquidity risk, daily and monthly data is needed. However, due to time and cost constraints, only the bank's annual report data is used for analysis.
- The research only uses secondary data.

CHAPTER 7

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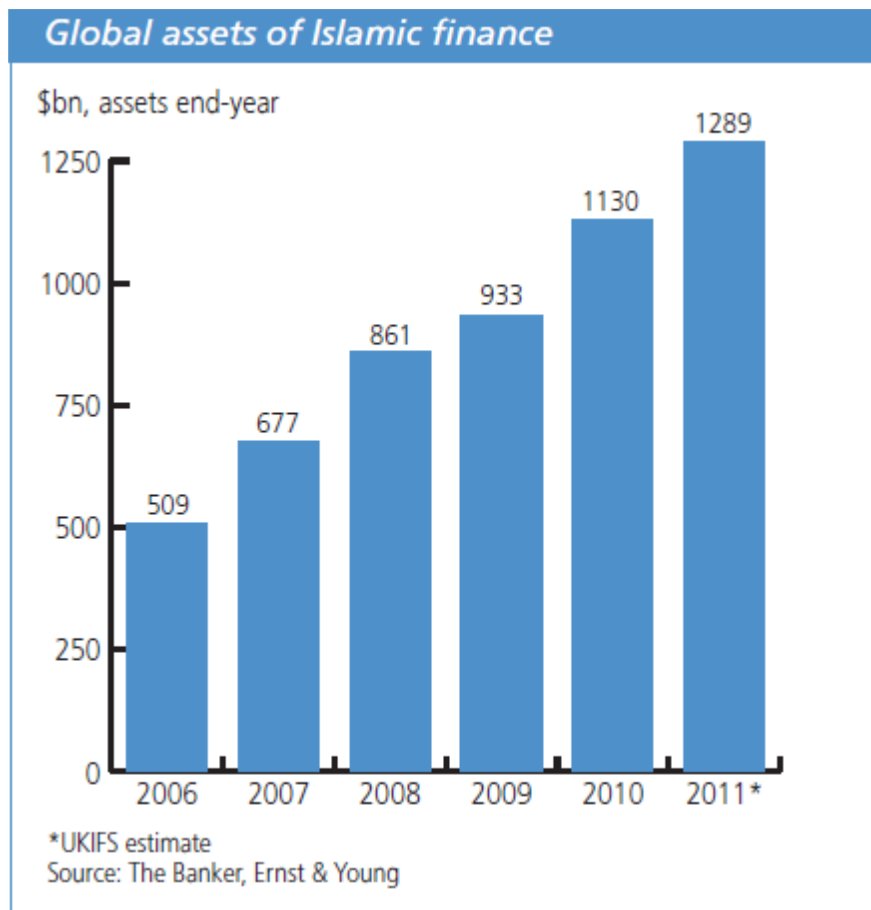
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CHAPTER 8

APPENDICES

Table 1.1: Global Assets of Islamic Banks 2006 to 2011



Source: City UK 2012

Tables 1.4 Islamic bank in UK

Islamic banks in UK**Fully Sharia compliant**

Bank of London and The Middle East
European Islamic Investment Bank
Gatehouse Bank
Islamic Bank of Britain
QIB UK

Islamic windows

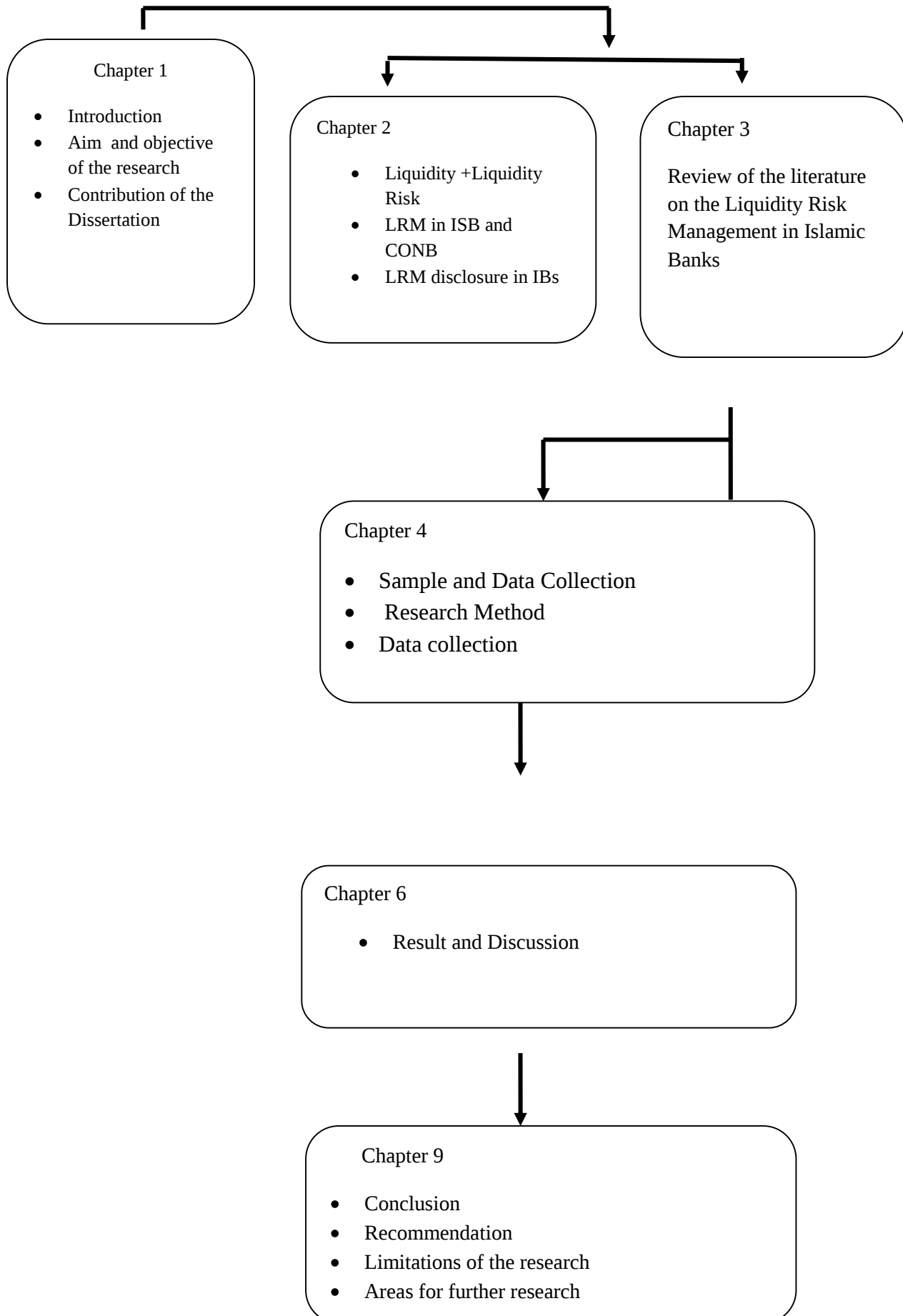
ABC International Bank
Ahli United Bank
Bank of Ireland
Barclays
BNP Paribas
Bristol & West
Citi Group
Deutsche Bank
Europe Arab Bank
HSBC Amanah
IBJ International London
J Aron & Co.
Lloyds Banking Group
Royal Bank of Scotland
Standard Chartered
UBS
United National Bank

<i>Assets of Islamic banks in UK</i>					
Sharia compliant assets, \$m	Year-end	2007-08	2008-09	2009-10	% change 2009-10
HSBC Amanah Finance	Sep-10	15194	16537	16699	1
Bank of London and the Middle East	Dec-10	1196	1119	1115	0
HSBC	Sep-10	570	698	524	-25
European Islamic Investment Bank	Dec-10	648	555	284	-49
Islamic Bank of Britain	Dec-10	337	394	342	-13
QIB UK	---	94	---	---	---
Gatehouse Bank	Dec-09	15	108	79	-27
Total		18055	19411	19042	-2
Source: The Banker					

Table 3.1.1: Research objectives and questions

Dissertation Question	Dissertation objective
. What is liquidity and Liquidity Risk?	To indentify the Definitions of liquidity and liquidity from Multinational Financial Institutions

2. What causes Liquidity risk management in Islamic bank of United Kingdom?	To examines the liquidity risk management in Islamic banks of UK
3. What factors influence liquidity risk in Conventional and Islamic banks in United Kingdom?	To examine the factors that affects liquidity risk in Conventional Islamic banks.
4. What is the degree of liquidity risk management disclosure in the annual report of Islamic banks in United Kingdom?	To examine the liquidity risk management disclosure in the annual reports of selected Islamic banks in UK

Table3.2 1: A framework for the dissertation

Tables 4.5: List of Islamic banks in the Study

Table 4.1.1 List of Banks included in the study				
Sr. No	Islamic Banks	Conventional Banks		
1	BLME: Bank of London and the Middle East	Barclay PLC		
2	EIIB: European Islamic Investment Bank	HSBC Bank PLC		
3	IBB: Islamic Bank of Britain	Lloyds Banking Group		