DETERMINANTS OF RISKS IN ISLAMIC FINANCIAL INSTITUTIONS:

A COMPARISON WITH CONVENTIONAL BANKS

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Submitted in partial fulfillment of the requirements for the
MS degree with specialization in Finance at the
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In the name of Allah, the most merciful and the most beneficent

DEDICATION

I dedicate this thesis to my parents, husband and my supervisor whose support has enabled me to complete this research study successfully

(Acceptance by the Viva Voice Committee)

Title of Thesis "Determinants of Risk in Islamic Financial Institutions A Comparison with Conventional Banks"

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APPRECIATION AND GRATITUDE

No words of gratitude will ever be sufficient for the Allah Almighty who made me capable of learning, blessed me with the knowledge & intellect and facilitated me with the finest of the mentors all through my academic years

Mr Wasimullah, Ex-Associate Professor, FMS, IIUI who made me, realize that no matter how high you think of your work, there is always a room for improvement I present my deep gratitude to him, for being the most marvelous and enduring supervisor

I also appreciate my colleagues, for their consistent encouragement and continuous support especially in increasing my knowledge

And finally, to my parents, most wonderful parents of the world who grew me up to never frantically fall upon a yearning other than knowledge and my truly adorable sisters and brothers, and my husband for high moral support

Ms Rabia Aslam

FORWARDING SHEET

The thesis entitled "Determinants of Risks in Islamic Financial Institutions A Comparison with Conventional Banks" submitted by Ms Rabia Aslam in partial fulfillment of MS degree in Management Sciences with specialization in Finance, has completed under my guidance and supervision I am satisfied with the quality of student's research work and allow her to submit this thesis for further process as per IIU rules & regulations

Date _____ Signature _____

Name Mr Wasimullah

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Abbreviations used

CAP = bank capital

CR = credit risk

DVOL = deposit volatility

LR = liquidity risk

LTD = proportion of loan to deposit

LEV = leverage

LLP = loan loss provision

LVOL = loans volatility

MGT = management efficiency

CHAPTER 1

INTRODUCTION

The growth of Islamic banking in the recent past has caught the attention of relevant stakeholders Islamic banks are slowly assimilating themselves in the financial system Not only in Muslim countries, Islamic banking is also growing in Western non-Muslim countries especially in London although there have been few regulatory barriers (Wilson, 2000)

Islamic banking is advancing day by day and is not just a fad (Mounira & Anas, 2008) The Islamic financial industry is growing at the rate of 15 percent annually (Chong & Liu, 2009, Khan & Bhatti, 2008b) Ernst & Young, a consultancy and accounting firm, presumes that during the period of 2009 to 2013, Islamic banking assets increased at an annual rate of 17 6%, and by 2018 will flourish to an average of 19 7% a year (Big interest no interest, 2014) Islamic financing is an emerging concept largely because of the fact that it is in align with customers' social and religious beliefs (Alam, 2012) Ryu, Piao and Nami (2012) predicted that many Muslim countries will adopt the Islamic financing replacing the conventional mode of banking and in other countries it will be used to complement the financial system

Islamic financial system is based on Shariah (teachings of the Quran and Prophet Muhammad (SAW)) According to Greuning and Iqbal (2008), terming Islamic financial system only as "interest free" does not represent the concept truly Interest free is the focus of Islamic financial system, however other Islamic laws and principles also govern Asian Institute of Finance, Malaysia in its study titled "Risk Management in Islamic Banks" (2013) lists down following five features of Islamic banking which differentiates it from conventional banking

i Prohibition of interest (riba)

ii Prohibition of gambling and excessive speculation

iii Transactions could only be asset based or asset backed

iv Loans and investments could only be made into products and services considered halal

v Accumulation and distribution of Zakat

The researchers are also focusing on various aspects of Islamic banking As the concept of Islamic banking is new as compared to conventional banking, therefore there are a lot of research areas still to be investigated (Ariffin & Kassim, 2011) They further commented that currently most of the focus is on product development and Islamic banking performance, a very major area of study still to be explored is risk management of Islamic banks The vitality of the issue is enhanced due to the notion that Islamic banks differ from conventional banks as they work under different principles and hence are exposed to different kind of risk (Ariss & Sarieddine, 2007) On the other hand, Ariffin, Archer & Karim (2009) conducted a research on 28 Islamic banks across 14 counties and concluded that risk faced by Islamic and conventional banks are similar in nature, but the difference lies in the level of risks The two banking systems are likely to show different level of risks because of the difference in their operational theory (Alam, 2012)

Abu Hussain and Al-Ajmi (2012) examined risk management practices of Bahrain banks (Islamic and conventional) through questionnaire technique and reported that Bahrain bankers are well-informed about the effective risk management importance They concluded that Islamic banks in Bahrain are exposed to higher level of risk as compared to their conventional counterparts and this difference is due to the

product differentiation offered by the two types of banks The efficient capital market is required for Islamic banking to flourish in a positive manner (Mounira & Anas, 2008) The risk management techniques used by conventional banks are not suitable for Islamic banks because of the involvement of interest whereas Islamic banking practices are based on Shariah principles (Khan & Bhatti, 2008a) The risk factor is particularly of concern for the Islamic banks as they lack the Islamic instruments for hedging purpose (Siddiqui, 2008)

1.1 Islamic Banking Principles

Islamic banking differs from conventional banking in many ways Here are the major differences between the two types of banking (Rahman, 2007)

Table 1 Islamic vs conventional banking

Islamic Banking	**Conventional Banking**
Based on Shariah principles	Based on Man-made principles
Risk sharing between investor and entrepreneur	Pre-determined rate of interest
Doing business in partnership with customers is the primary objective	Lending money on interest is the primary function
Profit earned on the basis of the trade/provision of goods/services	Interest charged on the basis of time value of money
In case of default, only charges compensation fee that goes to the charity	Charges penalty (in addition to interest) in case of default

Following are the most commonly used terms in Islamic mode of financing

Muḍārabah: A partnership between two persons i e the one who provides the capital (Rabb-Al-Mal) and one who uses the capital (Mudārib) The profit of the investment made by mudarib is shared by both according to the agreed contract, however loss will be borne by the Rabb-al-maal unless reason of investment failure is due to the mudarib's carelessness

Mushārakah: An agreement between the Islamic financial institution and the customer in which both parties pool in capital in a specific investment Profits are shared according to the agreed terms in the contract, whereas losses are shared on the basis of each party's contribution in the capital

Murābahah: It is a sale agreement, in which Islamic financial institution offers a product (in possession) to its customers at some agreed profit

Sukūk: Certificates based on Shariah compliant assets / pool of assets

Istisnā`: Sale of an object to be manufactured / constructed It is the responsibility of the manufacturer to deliver the product / commodity timely to the customer Payment to the manufacturer can either be made in advance or may be deferred to any time as agreed by the parties

Ijārah: It is a lease (rent) agreement, offered by the Islamic financial institution for an asset as demanded by the customer for a specified time period The customer pays rent for the use of assets until acquired by him

1 2 Islamic Banking in Pakistan

Islamic banking is growing at a faster rate in Middle East and Malaysia as compared to Pakistan but it is also gaining momentum in Pakistan (Siddiqui, 2008) Pakistan is working to overcome the problem of shortage of investment options in

Islamic banks by developing shariah based products for interbank money market (Qayum, 2010) The disadvantage of operating the Islamic banking in dual system, especially when the central bank works on interest based system, is that the Islamic banks cannot avail the facility of borrowing money from central bank for overnight and as a result they have to maintain higher reserves and compromise on profits (Siddiqui, 2008)

The first ever Islamic bank established was Dubai Islamic Bank in UAE which started its operations in 1975 Islamic banking started working in Pakistan after State Bank of Pakistan issued license to Meezan Bank Limited in 2002 to start its operations as full-fledged Islamic bank Currently there are 19 Islamic banking institutions with 1,200 branches offering wide range of products and services and make 10% of overall banking system (Strategic Plan Islamic Banking Industry of Pakistan, 2014) Islamic banking institutions work in following three different forms

i Full-fledged Islamic banks

ii Islamic windows in conventional banks

iii Islamic subsidiaries of conventional banks

There are five full-fledged Islamic banks currently working in Pakistan namely

i Meezan Bank Limited
ii Al Baraka Bank
iii Bank Islami Pakistan Limited
iv Burj Bank
v Dubai Islamic Bank

1.3 Focus of the Study

The current study focuses on the determinants of risks faced by full-fledged Islamic banks operating in Pakistan and selected conventional banks of Pakistan

Another aspect is to compare the determinants affecting the Islamic banks' risks with those of conventional banks

1.4 A Brief Statement of Research Problem

To examine the factors contributing to the risk being faced by the full-fledged Islamic banks operating in Pakistan over a period of 2006 to 2014 and comparing the factors with those affecting conventional banks

1.5 Objectives of the Study

The objectives of the current study are manifold The researcher particularly endeavors to study the risk determinants of Islamic banks and in trying to achieve this objective, this study aims to examine the following

- Determinants of liquidity risk and credit risk faced by Islamic Banks operating in Pakistan
- Determinants of liquidity risk and credit risk for selected nine conventional banks operating in Pakistan
- To compare the determinants of Islamic banks' risk with those of conventional banks

1.6 Significance of the Study

Managing risk has been identified as the key area for financial institutions The risk faced by the banks is of primary concern to the policymakers as the financial stability of banks is one of the indicators of the economy's performance (How, Karim, & Verhoeven, 2005) Failure to manage risk properly is considered one of the major

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causes of financial crisis of banks and therefore, there is a need to explore this area of study (Abu Hussain & Al-Ajmi, 2012)

South Asia is one of the emerging centers of the Islamic banking (Khan & Bhatti, 2008b) and there is a lot of scope for research in this part of the world for the area of Islamic finance The previous studies on risk management are mostly in US and western countries using the data from conventional banks The studies focusing on Islamic banks' risks are based on data from Malaysia (Ahmad & Ahmad, 2004, How et al , 2005), Indonesia (Ika & Abdullah, 2011), Bahrain (Abu Hussain & Al-Ajmi, 2012, Samad, 2004) and Brunei Darussalam (Hassan, 2009) Other research have been carried out related to efficiency and performance (Ghannouci, Fiordelisi, Molyneux, & Radic, 2012, Tai 2014, Zeitun, 2012) or financial characteristics of Islamic banks (Metwally, 1997) The studies from Pakistan cover the period before 2010 having small sample size (Ahmed, Akhtar & Usman, 2011, Ahmed, Ahmed & Naqvi 2011, Akhtar Ali & Sadaqat, 2011)

To the best of my knowledge, this is the first study to find the determinants of risks being faced by Islamic banks in Pakistan covering nine years of data (2006-2014) This study will thus help to understand the relationship between Islamic financing and two major types of risks in the context of Pakistan and consequently will facilitate the Islamic banking executives and professionals to better understand the risk factors associated with Islamic banks of Pakistan They will be able to devise strategies and policies related to risk management in a better way to minimize the risk

internal and external stakeholders Liquidity risk arises from both internal and external factors because of the nature of banking operations (Ali, 2004)

Gatev, Schuermann and Strahan (2009) deduced that banks are not in high risk position if their transactions deposits are on higher side, whereas banks facing liquidity risk with low transactions deposits will be exposed to high level of risk Islamic banks of Malaysia are less risky than their conventional counterparts and are found to be more profitable (Ryu et al , 2012)

How et al (2005) reported that liquidity risk has significant and positive relation with loan volatility and equity to total assets ratio They further stated that the liquidity problems in Islamic banks arise mainly due to two reasons First, they cannot borrow money from central bank due to the involvement of interest thus they are left without the lender of last resort facility and have to rely on their own funds Second, narrow line of financial instruments offered by the Islamic banks as compared to conventional banks limit their diversification due to which they cannot match the deposits and loans The only money market instrument available for Islamic banks is short term murabaha and therefore, Islamic banks need to have better mechanism to address the liquidity issue (Ariss & Sarieddine, 2007) Khan and Bhatti (2008a) suggested that the Islamic banks should work on risk management techniques and to improve their liquidity How et al (2005) found that Malaysian banks offering Islamic financing have lower liquidity risk and the reason is the banking structure of Malaysia In Malaysia, Islamic banks have been given flexibility in holding liquid assets as compared to conventional banks, and the presence of Islamic money market also solves the liquidity problems for Islamic banks The central bank also comes in to rescue the Islamic banks and provide financial help in case of liquidity problems Similar findings have been reported by Loghod (2010) for GCC Islamic banks Hassan and Mohammed

(2007) found that commercial banks of UAE show lower level of liquidity risk Samad (2004) examined six Islamic banks and fifteen conventional banks from Bahrain for the period 1991-2001 and found that there is no variation in terms of liquidity for both Islamic and conventional banks

Islam and Chowdhury (2009) compared an Islamic bank and a conventional bank of Bangladesh for the period 2003-2006 and found that Islamic bank showed better liquidity management Ika and Abdullah (2011) compared Islamic and conventional banks of Indonesia from 2000-2007 and the results of their study show no difference in both types of banks except for liquidity and deduced that Islamic banks exhibit more liquidity than conventional banks These results are also supported by the research of How et al (2005) using Malaysian banks as sample Similar finding have been reported from Pakistan by Hunjra and Bashir (2014) who examined Islamic and conventional banking financial analysis for the period 2008-2012 and found that Islamic banks are more liquid and possess more liquid assets in comparison with conventional banks They further deduced that conventional banks are more risky and less solvent than Islamic banks In a study conducted by Iqbal (2012) on liquidity risk of Islamic and conventional banks of Pakistan for 2007-2010 includes 5 Islamic and 5 conventional banks using ratios and regression analysis The results of his research show that Islamic banks are in a better position to repay its debt and hence are better placed as far as liquidity is concerned as compared to conventional banks The regression results of the study show that non-performing loan ratio is significantly positively related to liquidity risks for both types of banks

On the contrary Hanif, Tariq, Tahir and Momeneen (2012) studying Islamic banks vs conventional banks of Pakistan for the period 2005-2009 and found that conventional banks perform better in terms of liquidity Their findings are also

supported by Akhtar et al (2011) who explored liquidity risk management for Islamic vs conventional banks of Pakistan for the period 2006-2009 using regression analysis, their results show that conventional banks are found to be better performers in terms of liquidity risk management than Islamic banks

2.2 Credit Risk

Credit risk is defined as the risk that there is as possibility that a person / company will not pay back the money as per the contract agreement (Van Greuning & Iqbal, 2008) Credit risk of banks has become more important after the financial crisis (Kabir, Worthington & Gupta, 2014) Like conventional banks, Islamic banks also have to encounter the credit risk and it is of the utmost concern for Islamic banks (Hassan, 2009, Siddiqui, 2008) Ariss (2010) analyzed the competitiveness of Islamic banks in comparison with conventional banks of 13 countries for 2000-2006 and concluded that Islamic banks' asset side mainly consists of financing activities and have better capitalization The financing modes based on Islamic principles are linked with lower credit risk mainly because of sales based asset side and profit sharing based deposits (How et al , 2005) The results of their study show that the credit risk is influenced by Islamic financing The banks with Islamic financing have lower credit risk and the reason cited is the profit sharing based banking and the fact that Malaysian banking is dominated by Murabaha mode of financing as against Mudharabah, Musharakah Ijara, and Bay'al-Salam mode of financing in which financer puts all of his investment at stake

Beck, Demirguç-Kunt and Merrouche (2013) compared Islamic and conventional banking using the sample of 510 banks for the period 2005-2009 across 22 countries and their results show that Islamic banks perform better in terms of asset

quality and capitalization Commercial banks of UAE are found to be good in managing credit risk (Hassan & Mohammed, 2007) Islamic banks of Bahrain are also found to be less risky for credit risk as compared to conventional banks (Samad, 2004) He cited several reasons for Islamic banks to perform better for credit risk He pointed out that better credit risk performance is mainly due to the fact that Islamic banks keep their equity per capita on higher side and secondly as the new entrants to the markets, the management of Islamic banks knows that they have to perform better in order to retain the creditability among their customers The Islamic banks are expected to ensure credibility and feasibility check for new projects because of 'no assured' return (How et al 2005)

Banks' risk goes up with the increase in loan (Foos, Norden & Weber, 2010) Ahmad and Ariff (2007) studied credit risk determinants across different developed and developing economies and found loan loss provision to be highly significant for credit risk whereas their results show that leverage is not a determinant of credit risk They further concluded that credit risk for developed economies is lower as compared to developing economies

Kabir et al (2014) compared credit risk for 37 Islamic banks across 13 countries for the period of 2000 to 2012 using different techniques and found that when using Merton's distance-to-default Model, credit risk is lower for Islamic banks as compared to conventional banks On the other hand, Islamic banks tend to be higher credit risk side with the use of Z-score and non-performing loan ratio Hence, they concluded methodology employed for credit risk effects the results for credit risk of Islamic banks

The proxy of non-performing loans has been widely used for measuring banks' credit risk Samad (2004) termed it as the most important measure for credit risk as it measures the doubtful loans in the banks' portfolio A study conducted by Alam (2012)

comparing the two banking systems, concluded that bank inefficiency is positively related with risk for conventional banks, whereas negatively related with risk for Islamic banks Said (2013) examined the relationship between efficiency and risks of Islamic banks in MENA region for the period of 2006-2009 and deduced that credit risk and efficiency are negatively related Ahmed, Akhtar and Usman (2011) studied risks associated with Islamic banks of Pakistan for the period 2006-2009 and summarized that non-performing loan is not a significant determinant of credit risk while management efficiency is found to be negatively related to credit risk

Ahmad and Ahmad (2004) comparing the Islamic and conventional banks of Malaysia, found that leverage is not a significant determinant of credit risk for both types of banks whereas for Islamic banks, credit risk is positively affected by management efficiency and for conventional banks, it is negatively related to management efficiency Credit risk of Islamic banks is negatively affected by loan loss provision On the other hand, credit risk of conventional banks is positively and significantly affected by loan loss provision (Ahmad & Ahmad 2004) Baele, Farooq and Ongena (2014) conducted a research on Islamic loan default pattern in Pakistan and concluded that default rate is lower on Islamic loans as compared to conventional ones Conventional banks in Pakistan are found to be working more efficiently as compared to Islamic banks for period 2008-2012 (Hunjra & Bashir, 2014) Hanif et al (2012) deduced that Islamic banks are performing better in terms of credit risk than conventional banks Small Islamic banks perform better and carry less default risk as compared to Islamic banks and reason for this is that Islamic banks mostly rely on customers who own small businesses and hence there are less chances of default (Abedifar, Ebrahim, Molyneux & Tarazi, 2014)

Corsetti, Pesenti and Roubini (1998) undertook a study to find the determinants of the Asian crisis and found various factors causing the crisis including the non-performing loans Loan commitments were found to be the largest source of credit risk for top 20 Japanese banks (Khambata & Bagdi, 2003)

2.3 Market Risk

Three determinants of market risk are interest rate risk, exchange rate risk and equity risk Interest rate risk (IRR) for banks is defined by Ballester Ferrer, González, and Soto (2009) as "the risk that its income and/or market value will be adversely affected by interest rate movements " Madura and Zarruk (1995) demonstrated that the interest rate risk of banks varies from country to country Although Islamic banks are not based on interest rate system but even then they might be affected by movements in interest rate as argued by Rosly (1999) He documented that the Islamic banks in Malaysia are mainly financed by fixed rate asset (Murabaha) and most of the asset side of Islamic banks is not sensitive to market changes whereas the liabilities side of the Islamic banks is sensitive to interest and market changes Therefore, changes in interest rate affect the Islamic banks This has been evident from the fact that during the period when interest rate was rising, the profits of Bank Islam Malaysia fell

Choi, Elyasiani, and Kopecky (1992) examined the 48 largest US banking institutions covering the period from 1975 to 1987 to study the impact of interest rate and exchange rate on the banks' stock rates of returns Their results indicated that stock returns are negatively affected by the changes in short term domestic interest rate Their results further suggested that percentage changes in exchange rate is negatively related to stock returns before the October 1979 period and after that, this relationship showed positive relation The authors explained that this change in the relationship might be

due to the fact that during this time period, banking system went down from positive net position in foreign currencies to negative net position

Atindéhou and Gueyie (2001) investigated the relationship between Canadian banks' stock returns and the exchange rate changes using the data from six Canadian chartered banks They found the exposure of Canadian banks' stock return to the exchange rate changes Their results suggest a positive and significant relation between banks' stock returns and Canadian dollar appreciation

Exchange rate betas were found more significant as compared to interest rate beta for 59 large US commercial banks for the period of 1975-1992 (Choi & Elyasiani, 1997) Chamberlain, Howe and Popper (1997) comparing the exchange rate sensitivity between US and Japanese banks, found that most of the US bank holding companies are sensitive to exchange rate changes as compared to Japanese banks Only few Japanese banks were found to be sensitive to exchange rate The authors cited difference in operation and regulatory conditions of the two countries as reason for the contrasting results

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Data Type and Source

The study uses secondary data collected from annual reports of banks and financial statement analysis issued by State Bank of Pakistan. Data for market risk was not available because only two of the five Islamic banks (Bank Islami and Meezan Bank) are listed in stock exchange and the two banks' data is not sufficient to study the market risks' variables, therefore this study is confined to the analysis of two risks i.e liquidity and credit risks. Accounting ratios are found to be good indicator for measuring bank's characteristics as concluded by Olson and Zoubi (2008). They used the accounting ratios to compare between Islamic banks and conventional banks of GCC region for the period 2000-2005 and inferred that use of accounting ratios is helpful in developing countries as well.

3.2 Variables Definitions

In determining the liquidity and credit risks, following independent variables have been identified based on previous studies.

Table 2 Variables

Dependent Variable	Independent Variables
Liquidity Risk	deposit volatility loans volatility bank capital proportion of loan to deposit
Credit Risk	management efficiency loan loss provision leverage

In following section, proxies used for liquidity risk and credit risk and their determinants have been discussed

3 2 1 Liquidity Risk

Liquidity Risk (LR) is considered to be of vital importance for any firm and specifically for banking sector It is calculated as the ratio of total liquid assets to total liabilities of bank The higher the ratio, the lower the bank's liquidity risk Liquid assets include 'cash and balances with treasury banks and balances with other banks'

Deposit Volatility (DVOL), calculated as volatility of deposits (measured by standard deviation) divided by total assets of bank, shows how much deposits are contributing towards the assets

Loan Volatility (LVOL), calculated as volatility of loans (measured by standard deviation) divided by total assets of bank Net loans (advances net of provision) of conventional banks are considered for this ratio In case of Islamic banks, the value of 'Islamic financing and related assets-net' is taken for this ratio Higher ratio means bank's income mainly come from loans and investments whereas banks with lower loan to asset ratio means their source of income is from diversified non interest earnings

Capital (CAP) is the book value of equity divided by total assets, it is the measure of assets amount financed by the investors i e in case of liquidation, how much investors will receive

Proportion of Loan to Deposit (LTD) is the ratio of (net) loans to total deposits of the bank For Islamic banks, 'Islamic financing and related assets-net' in place of loans is considered while calculating the ratio Higher the ratio, higher the probability that banks

might not be able to fulfill any unexpected fund requirement, if the ratio is too low, banks might not be earning as much as they could

3 2 2 Credit Risk

Credit Risk (CR) represents asset quality of a bank, calculated as non-performing loan (NPL) for the current year to total loan of the bank NPL has been classified as 'Advances non-performing / classified' on balance sheet of banks and gross advances figure has been taken for total loans In case of Islamic banks, non-performing under the head of 'Islamic financing and related assets' is used for NPL and 'Islamic financing and related assets' is used for total loans

Management Efficiency (MGT) is the ratio of operating income (interest income + non-interest income) to total assets of bank and measures how well the management is utilizing bank's assets to make profits Both interest and non-interest income is being used because now a large portion of bank's income comes from fee income (non-interest based income) in addition to interest income For Islamic banks, total income figure from income statement has been taken as the concept of interest income is not present in Islamic mode of financing

Loan Loss Provision (LLP) is calculated as loan loss provisions (provision against advances) to total loans (gross advances) of the bank, this ratio measures how successful the bank is in getting back its loans For Islamic banks, provision against non performing Islamic financing and relate assets and Islamic financing and related assets have been used for loan loss provision and total loans respectively

Leverage (LEV) is calculated as the ratio of tier 2 capital to tier 1 capital of bank, tier 1 capital includes share capital and un-appropriated profits and tier 2 capital includes reserves and others The higher the ratio, the higher the credit risk

3.3 Theoretical Framework

3.3.1 Liquidity Risk

Following Angbazo (1997) and How et al (2005) the ratio of liquid assets to liabilities is used as a proxy for liquidity risk (LR) Four determinants of liquidity risk used are deposit volatility (DVOL), loans volatility (LVOL), bank capital (CAP) and proportion of loan to deposit (LTD)

$$LR = \lambda_0 + \lambda_1 DVOL + \lambda_2 LVOL + \lambda_3 CAP + \lambda_4 LTD + \epsilon$$

where

LR = the ratio of total liquid assets to total liabilities of bank

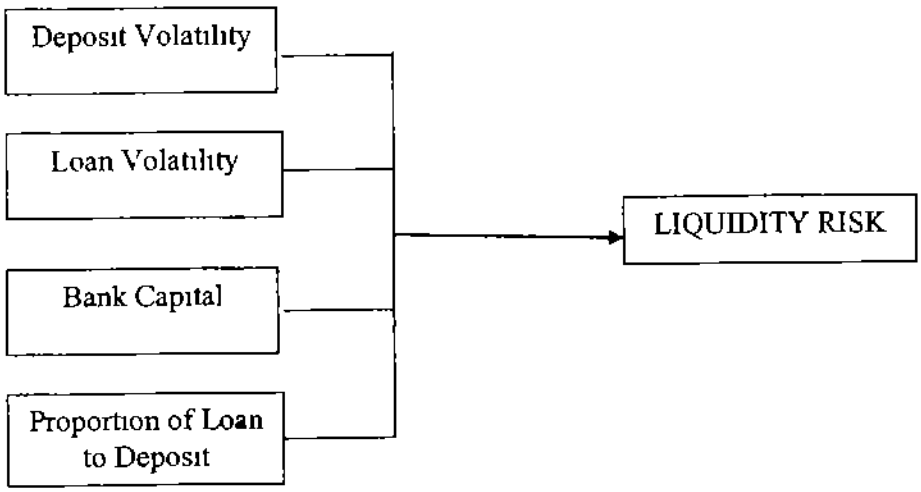
DVOL = volatility of deposits (measured by standard deviation) divided by total assets of bank

LVOL = volatility of loans (measured by standard deviation) divided by total assets of bank

CAP = the book value of equity divided by total assets of bank

LTD = the ratio of loans to total deposits of bank

Based on previous studies, all the four determinants of liquidity risk are expected to have positive relationship with liquidity risk (How et al , 2005, Wetmore, 2004, Widagdo & Ika, 2008)



Model for Liquidity Risk

3 3 2 Credit Risk

The proxy used for credit risk is non-performing loans to total loans (Ahmad & Ahmad, 2004, Ahmed, Takeda, & Thomas, 1999, Berger & DeYoung, 1997) The determinants for Credit Risk include management efficiency (MGT), loan loss provision (LLP) and leverage (LEV) (Ahmad & Ahmad, 2004, Ahmed, Takeda, & Thomas, 1999, Porter & Chiou, 2013)

$$CR = \lambda_0 + \lambda_1 MGT_+ \lambda_2 LLP + \lambda_3 LEV + \epsilon$$

where

CR = non-performing loan for the current year to total loan of bank

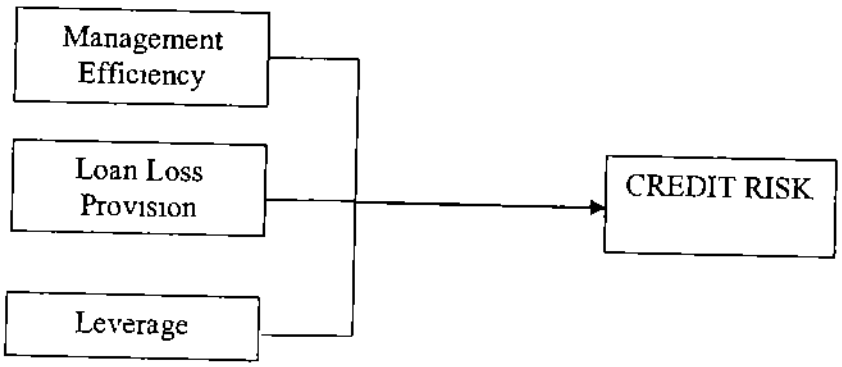
MGT = operating income (interest income + non-interest income) to total assets of bank

LLP = loan loss provisions to total loans of bank

LEV = tier 2 capital to tier 1 capital of the bank

Based on literature, LLP and LEV are expected to be positively related to credit risk (Ahmad & Ahmad, 2004, Ahmed et al , 1999, Porter & Chiou, 2013) Management

Efficiency (MGT) is expected to be negatively related to banks' credit risk (Ahmad & Ahmad, 2004)



Model for Credit Risk

3.4 Hypotheses Development

In this study, hypothesis testing technique will be used Hypothesis is defined as *"a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation"* The following hypotheses have been developed to be tested later in the study

H1 Deposit Volatility is a determinant of Liquidity Risk

H2 Loan Volatility is a determinant of Liquidity Risk

H3 Bank Capital is a determinant of Liquidity Risk

H4 Loan to Deposit Proportion is a determinant of Liquidity Risk

H5 Management Efficiency is a determinant of Credit Risk

H6 Loan Loss Provision is a determinant of Credit Risk

H7 Leverage is a determinant of Credit Risk

H8 There is a difference in liquidity risk determinants between Islamic and conventional banks

H9 There is a difference in credit risk determinants between Islamic and conventional banks

3.5 Sampling

The study will cover data from five full-fledged Islamic banks operating in Pakistan and from the nine conventional banks, over the period of 2006 to 2014

The five Islamic banks under consideration are as follows

i Meezan Bank Limited
ii Al Baraka Bank
iii Bank Islami Pakistan Limited
iv Burj Bank
v Dubai Islamic Bank

Burj Bank started its operation in 2007, so is data is considered from 2007-2014 Out of 21 conventional banks operating in Pakistan, 9 banks have been selected for this study on the basis of size, measured by natural log of asset size which are comparable to that of five Islamic banks Asset size is being controlled because comparing large conventional banks with Islamic banks may affect the outcome of the study, therefore for better reliability banks of comparable size are being taken as sample A detail of asset size is shown below in Table 3

Table 3 Asset Size of Banks

Islamic Banks	Natural log of Assets
ALBARAKA (PAKISTAN) LIMITED	17 57270353
BURJ BANK LIMITED	17 03661001
BANK ISLAMI PAKISTAN LIMITED	17 55483956
DUBAI ISLAMIC BANK PAKISTAN LIMITED	17 53217592
MEEZAN BANK LIMITED	18 89266596

Conventional Banks	
FIRST WOMEN BANK LIMITED	16 41502753
NATIONAL BANK OF PAKISTAN	20 61179386
THE BANK OF KHYBER	17 81517593
THE BANK OF PUNJAB	19 29783094
ALLIED BANK LIMITED	19 95002006
ASKARI BANK LIMITED	19 4393417
BANK AL-HABIB LIMITED	19 46967195
BANK ALFALAH LIMITED	19 85861886
FAYSAL BANK LIMITED	19 23392018
HABIB BANK LIMITED	20 73696838
HABIB METROPOLITAN BANK LIMITED	19 28646256
JS BANK	17 67637115
KASB BANK LIMITED	17 88644494
MCB BANK LIMITED	20 15291056
NIB BANK	18 90497947
SAMBA BANK LIMITED	17 06274499
SILKBANK LIMITED	18 10137995
SONERI BANK LIMITED	18 52683685
STANDARD CHARTERED BANK (PAKISTAN) LIMITED	19 52643738
SUMMIT BANK	17 98183108
UNITED BANK LIMITED	20 39611915

The benchmark value for natural log of assets has been set as 19 for selection of conventional banks On the basis of this criterion, following nine banks have been selected for further investigation

i First Women Bank Limited
ii The Bank of Khyber
iii JS Bank
iv KASB Bank Limited
v NIB Bank
vi Samba Bank Limited
vii Silkbank Limited
viii Soneri Bank Limited
ix Summit Bank

3.6 Time Period

The time period of this study consists of data from 2006 to 2014 (both inclusive) This research focuses on Islamic banks, it was necessary to look at the data availability of Islamic banks Only one Islamic bank's data (Meezan Bank Limited) is available for the year before 2006, therefore the study covers the period of post 2006 The latest data available was for the year 2014, therefore this study covers the period of 2006-2014

3.7 Data Collection

The data for liquidity risk and credit risk and their determinants was collected from the annual reports of the banks

3.8 Data Analysis Technique

First, the ratios being used for risks proxies and their determinants were computed Next, to determine the factors contributing towards the liquidity risk, credit risk and market risk, multiple regression model (OLS) was employed using Eviews I used dummy variable which takes the value of 1 for Islamic banks and 0 for conventional banks

Before running the regression model, I checked the multicollinearity of the determinants of both the dependent variables and found that variance inflation factor of all the independent variables was less than 5 confirming that there is no multicollinearity in the data The heteroskadasticity test rejected the null of heteroskadasticity Both heteroskedasticity and autocorrelation of unknown form were corrected using HAC Consistent Covariance (Newey-West)

CHAPTER 4

EMPIRICAL RESULTS

4.1 Descriptive Statistics

Descriptive Statistics of the liquidity risk and credit risk variables are presented in Table 4 and 5 respectively

Mean value for liquidity risk is 0 129 and it takes the maximum value of 0 576 and minimum value of 0 036 The average for credit risk for all banks is 0 128 and its maximum value is 0 630 and minimum value is 0

Table 4 Liquidity Risk determinants-Descriptive Statistics

	LR	DVOL	LVOL	CAP	LTD
Mean	0 129064	0 092600	0 054162	0 149014	0 605056
Median	0 097417	0 074361	0 039955	0 105815	0 610884
Maximum	0 576627	0 282273	0 194086	0 543147	1 289048
Minimum	0 036778	0 000000	0 000153	0 002868	0 000000
Std Dev	0 092422	0 069020	0 047174	0 107709	0 176444

Table 5 Credit Risk determinants-Descriptive Statistics

	CR	MGT	LLP	LEV
Mean	0 128094	0 029891	0 086520	0 004742
Median	0 096023	0 034213	0 064097	0 050387
Maximum	0 630483	0 098495	0 403253	48 77666
Minimum	0 000000	-0 040290	0 000000	-64 54848
Std Dev	0 110506	0 022189	0 079264	7 592161

4.2 Analysis of Results

Table 6 represents the regression results for liquidity risk determinants for all banks i e both Islamic and conventional Dummy variable is also included in the results Dummy variable takes the value of 1 for Islamic banks and 0 for conventional banks

The results in table 6 illustrates that CAP and LTD are only significant determinants of liquidity risk The dummy variable is significant implying that Islamic and conventional banks have different liquidity risk determinants The results for dummy variable further indicate that Islamic banks have higher liquidity risk as compared to conventional banks These results are consistent with those of Akhtar et al (2011) and Hanif et al (2012) However these results are contrary to the studies taken in Indonesia (Ika & Abdullah, 2011) and Malaysia (How et al , 2005)

Table 6 Regression Results of Liquidity risk and its determinants

Variable	Coefficient	Std Error	t-Statistic	Prob
Liquidity Risk	0 138193	0 050972	2 711160	0 0077
DVOL	0 120090	0 205134	0 585424	0 5594
LVOL	0 199624	0 233973	0 853191	0 3953
CAP	0 352007	0 114989	3 061223	0 0027
LTD	-0 171227	0 082079	-2 086127	0 0391
DUMMY	0 049208	0 021541	2 284380	0 0241

Table 7 represents the regression results for credit risk determinants for all banks i e both Islamic and conventional Dummy variable is also included in the results Dummy variable takes the value of 1 for Islamic banks and 0 for conventional banks

The results in table 7 illustrates that loan loss provision (LLP) is the only significant determinant of credit risk The dummy variable is not significant in this case showing that credit risk of Islamic and conventional banks is affected by similar factors The beta result for dummy variable indicates that Islamic banks have lower credit risk as compared to conventional banks These findings are supported by Hanif et al , (2012), How et al (2005) and Samad (2004)

Table 7 Regression Results of Credit risk and its determinants

Variable	Coefficient	Std Error	t-Statistic	Prob
Credit Risk	0 030323	0 013708	2 211989	0 0288
MGT	-0 203862	0 225249	-0 905050	0 3672
LLP	1 217115	0 108937	11 17269	0 0000
LEV	-0 000242	0 000179	-1 350625	0 1793
DUMMY	-0 005311	0 010535	-0 504089	0 6151

4.3 Liquidity Risk Determinants

4 3 1 Islamic Banks

The regression result of Liquidity Risk of Islamic banks is shown in the table 8 The results indicate that the model is significant as the F statistics is less than 0 05 The R-squared value of Liquidity Risk Model is 0 451 which shows that 45 1% of change in liquidity risk is due to the change in independent variables The value of 2 13 of Durbin Watson stat shows that the model is free of autocorrelation

Deposit Volatility has positive relationship with the liquidity risk for Islamic banks but it is not a significant determinant for Islamic banks The beta value indicates that 1 unit change in the value of deposits volatility will result in 0 002 units change in liquidity risk Loan Volatility is also positively related to liquidity risk of Islamic banks but however this is also not a significant factor for Islamic banks' liquidity risk The beta result shows that 0 522 units change in liquidity risk is observed due to 1 unit change in loan volatility This is not in consistent with the results of How et al (2005) which show that loan volatility is a significant factor for liquidity risk The ratio of book value of equity to total assets (CAP) has positive and significant relationship with liquidity risk of Islamic banks with confidence level of 99% The study conducted by How et al (2005) also exhibited same results for Islamic banks of Malaysia The beta results suggest that 0 73 units change in liquidity risk of Islamic banks is due to 1 unit

change in capital ratio The loan to deposit ratio (LTD) has significant negative relation with the liquidity risk of Islamic banks and the results imply that 1 unit change in LTD ratio will cause 0 37 units change in liquidity risk

Table 8 Liquidity Risk Determinants of Islamic Banks

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4 0000)

Variable	Coefficient	Std Error	t-Statistic	Prob
C	0 238010	0 100469	2 369002	0 0228
DVOL	0 002183	0 407752	0 005353	0 9958
LVOL	0 522647	0 546184	0 956908	0 3444
CAP	0 731896	0 226876	3 225965	0 0025
LTD	-0 378596	0 173196	-2 185945	0 0347
R-squared	0 451158	Durbin-Watson stat		2 131048
Adjusted R-squared	0 396273	Prob(F-statistic)		0 000000

4 3 2 Conventional Banks

The regression result of Liquidity Risk of conventional banks is shown in the table 9 The results indicate that the model is significant as the F statistics is less than 0 05 The R-squared value of Liquidity Risk Model is 0 21 The value of 1 74 of Durbin Watson stat shows that the model is free of autocorrelation

The regression results for liquidity risk of conventional banks indicate that none of the determinant is significant Deposit Volatility has positive relationship with the liquidity risk of conventional banks consistent with the results of Islamic banks The beta value indicates that 1 unit change in the value of deposits volatility will result in 0 127 units change in liquidity risk Loan Volatility is positively related to liquidity risk which means that higher the volatility of loans, higher the liquidity risk of conventional banks The beta result shows that 0 01 units change in liquidity risk is observed due to 1 unit change in loan volatility The ratio of book value of equity to total assets (CAP)

has positive relationship with liquidity risk of conventional banks The beta results suggest that 0 179 units change in liquidity risk of conventional banks is due to 1 unit change in capital ratio The loan to deposit ratio (LTD) has negative relation with the liquidity risk of conventional banks and the results imply that 1 unit change in LTD ratio will cause 0 106 units change in liquidity risk

Table 9 Liquidity Risk Determinants of Conventional Banks

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4 0000)

Variable	Coefficient	Std Error	t-Statistic	Prob
C	0 130980	0 043670	2 999326	0 0037
DVOL	0 127839	0 183090	0 698232	0 4872
LVOL	0 010644	0 196090	0 054280	0 9569
CAP	0 179246	0 099351	1 804163	0 0752
LTD	-0 106563	0 065083	-1 637350	0 1057
R-squared	0 210308	Durbin-Watson stat		1 742367
Adjusted R-squared	0 168745	Prob(F-statistic)		0 001141

4 3 3 Differences and Similarities in Liquidity Risk Determinants of Islamic and Conventional Banks

The above analysis indicates that only two determinants of liquidity risk, i e equity to total assets and proportion of loan to deposit, are significant for Islamic banks whereas none of the determinant is significant for conventional banks' liquidity risk Deposit Volatility, loan volatility and capital all are positively related to liquidity risk for both Islamic and conventional banks Loan to deposit ratio is negatively related to liquidity risk of both types of banks which is contrary to the previous researches This might be due to the condition of Pakistani market and needs to be explored further

4 4 Credit Risk Determinants

4 4 1 Islamic Banks

The regression result of Credit Risk of Islamic banks is shown in the table 10 The table depicts the regression results for determinants of credit risk of Islamic banks The F statistics figure shows that model is a good fit The Durbin-Watson stat figure confirms that error term is independent and model is free of autocorrelation The R-squared value of the model is 0 67 which implies that 67% of variability in credit risk is explained by the independent variables

The results suggest that management efficiency is negatively related to credit risk but is not at significant level The figure further indicates that 1 unit change in management efficiency will cause 0 32 unit change in credit risk of Islamic banks These results are supported by Ahmed, Akhtar and Usman (2011) Loan Loss Provision has significant positive relation with credit risk of Islamic banks and 1 48 unit of change in credit risk is due to 1 unit change in loan loss provision The LLP result is not consistent with the study conducted by Ahmad and Ahmad (2004) on Malaysian Islamic banks Leverage, as calculated by the ratio of tier 2 capital to tier 1 capital, is negatively related to credit risk with coefficient of 0 0014 and leverage of the Islamic banks is not a significant determinant as evident from the regression results Ahmad and Ahmad (2004) also did not find leverage to be significantly related to credit risk of Malaysian Islamic banks

Table 10 Credit Risk Determinants of Islamic Banks

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4 0000)

Variable	Coefficient	Std Error	t-Statistic	Prob
C	0 021367	0 013766	1 552113	0 1283
MGT	-0 322616	0 324430	-0 994407	0 3259
LLP	1 482907	0 250650	5 916234	0 0000
LEV	-0 001418	0 000881	-1 608627	0 1154
R-squared	0 676738	Durbin-Watson stat		1 998515
Adjusted R-squared	0 653085	Prob(F-statistic)		0 000000

4 4 2 Conventional Banks

The regression result of Credit Risk of Conventional banks is shown in the table 11 The table illustrates the regression results for determinants of credit risk of conventional banks The F statistics figure shows that model is a good fit The Durbin-Watson stat figure of 1 86 confirms that error term is independent and model is free of autocorrelation The R-squared value of the model is 0 78 which implies that 78% of variability in credit risk is explained by the independent variables

The results suggest that management efficiency is negatively related to credit risk, also supported by Ahmad and Ahmad (2004), but is not at significant level The figure further indicates that 1 unit change in management efficiency will cause 0 199 unit change in credit risk of conventional banks Loan Loss Provision has significant positive relation with credit risk of conventional banks and 1 20 units of change in credit risk is due to 1 unit change in loan loss provision These results are in line with the studies of Ahmad and Ahmad (2004) and Ahmad and Ariff (2007) Leverage of the conventional banks, as calculated by the ratio of tier 2 capital to tier 1 capital, is not a significant determinant as evident from the regression results Leverage is negatively related to credit risk with coefficient of 0 0001 These results are consistent with those

of Ahmad and Ahmad (2004) and Ahmad and Ariff (2007) who concluded that leverage (tier 2 capital to tier 1 capital ratio) is not a determinant of credit risk

Table 11 Credit Risk Determinants of Conventional Banks

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4 0000)

Variable	Coefficient	Std Error	t-Statistic	Prob
C	0 032007	0 016478	1 942429	0 0557
MGT	-0 199019	0 292523	-0 680354	0 4983
LLP	1 201460	0 118897	10 10506	0 0000
LEV	-0 000191	0 000180	-1 062117	0 2915
R-squared	0 785345	Durbin-Watson stat		1 867688
Adjusted R-squared	0 776982	Prob(F-statistic)		0 000000

4 4 3 Differences and Similarities in Credit Risk Determinants of Islamic and Conventional Banks

The above analysis of credit risk determinants indicate that only loan loss provision is significant determinant for both Islamic and conventional banks and it is positively related to the credit risk of Islamic as well as conventional banks This implies that increase in loan loss provision exposes banks to the credit risk Management efficiency and leverage are not found to be significant determinants of the credit risk Both are negatively related to credit risk for Islamic and conventional banks

4.5 Hypotheses Testing

Based on the regression and above analysis, the hypotheses testing results is as follows

Hypothesis 1 Deposit Volatility is a determinant of Liquidity Risk

This hypothesis is rejected for both Islamic and conventional banks

Hypothesis 2 Loan Volatility is a determinant of Liquidity Risk

This hypothesis is rejected for both Islamic and conventional banks

Hypothesis 3 Bank Capital is a determinant of Liquidity Risk

For Islamic banks, this hypothesis is accepted whereas for conventional banks, it is rejected

Hypothesis 4 Loan to Deposit Proportion is a determinant of Liquidity Risk

For Islamic banks, this hypothesis is accepted whereas for conventional banks, it is rejected

Hypothesis 5: Management Efficiency is a determinant of Credit Risk

This hypothesis is rejected for both Islamic and conventional banks

Hypothesis 6: Loan Loss Provision is a determinant of Credit Risk

This hypothesis is accepted for both Islamic and conventional banks

Hypothesis 7: Leverage is a determinant of Credit Risk

This hypothesis is rejected for both Islamic and conventional banks

Hypothesis 8 There is a difference in liquidity risk determinants of Islamic and conventional banks

This hypothesis is accepted

Hypothesis 9 There is a difference in credit risk determinants of Islamic and conventional banks

This hypothesis is rejected

CHAPTER 5

CONCLUSION

Pakistan has dual banking system i e Conventional and Islamic Islamic banking is in its preliminary phase and is growing day by day The advent of Islamic banking and its growth has paved a way for need of research in this area Risk management of these banks is a vital area of concern as banking system relies on managing risk efficiently This study provides insight on two major types of risks i e liquidity risk and credit risk and factors influencing these two risks of Islamic banks in Pakistan and comparison with factors effecting conventional banks' risk

The sample of the research consists of 14 banks, 5 full-fledged Islamic and 9 conventional banks of Pakistan for the period 2006-2014 The conventional banks were selected on the basis of their asset size which were comparable to 5 full-fledged Islamic banks

Islamic banks show higher degree of liquidity risk and are better performers in term of credit risk The regression results further indicate that the determinants of Islamic and conventional banks differ whereas credit risk of both types of banks are affected by similar determinants Equity to total assets ratio (CAP) and proportion of loan to deposit (LTD) are significant determinants of Islamic banks' liquidity risk, while none of the determinants under study is found significant for liquidity risk of conventional banks CAP has positive significant relation with liquidity risk of Islamic banks and LTD is found to be significantly negatively related to Islamic banks' liquidity risk For credit risk, only one determinant i e loan loss provision (LLP) is significant for both types of banks LLP is found to be positively related to credit risk The results

further suggest that other two determinants of credit risk i e management efficiency and leverage are not significant for both Islamic and conventional banks

CHAPTER 6

IMPLICATIONS AND LIMITATIONS

6.1 Implications of the Research

Islamic financing is a growing phenomenon The professionals related to this industry must be aware of the associated risk and be able to mitigate the risk efficiently The bankers can use the results of the study to see what factors influence the liquidity and credit risk and consequently be able to devise strategies accordingly The results can further help Islamic banking professionals to understand that liquidity risk should be of concern and steps should be taken to manage the liquidity risk properly

Academicians related to banking industry can also be benefitted from this study in understanding the risk of Pakistani banks in a better manner

6.2 Limitations and Future Research Directions

This research is confined to the study of two types of risks i e liquidity risk and credit risk For future researches, other types of risks may be studied This study focuses on only Islamic banks of Pakistan, it can further be extended by comparing risk determinants with other countries' Islamic banks Future researchers can further explore the reasons of loan to deposit ratio negative relation with liquidity risk for Pakistani banks The research includes only full- fledged Islamic banks and does not consider the Islamic windows of conventional banks, future researchers may focus on comparing the risk determinants of full-fledged Islamic banks with those of Islamic units operating under conventional banks This study does not cover the risk management tools used by the banks which can be explored in future researches

CHAPTER 7

REFERENCES

Abedifar, P , Ebrahim, S , Molyneux, P , & Tarazi, A (2014) Islamic Banking and Finance Recent Empirical Literature and Directions for Future Research Available at http / www st-andrews ac uk business/rbf workingpapers/RBF15_008 pdf

Abu Hussain, H , & Al-Ajmi, J (2012) Risk management practices of conventional and Islamic banks in Bahrain *The Journal of Risk Finance, 13(3),* 215-239

Ahmad, N H , & Ahmad, S N (2004) Key factors influencing credit risk of Islamic bank A Malaysian case *The Journal of Muamalat and Islamic Finance Research 1(1),* 65-80

Ahmad, N H , & Ariff, M (2007) Multi-country study of bank credit risk determinants *International Journal of Banking and Finance, 5(1),* 135-152

Ahmed, N , Ahmed, Z , & Naqvi, I H (2011) Liquidity Risk and Islamic Banks Evidence from Pakistan *Interdisciplinary Journal of Research in Business, 1(9),* 99-102

Ahmed, N , Akhtar, M F , & Usman, M (2011) Risk Management Practices and Islamic Banks An Empirical Investigation from Pakistan Interdisciplinary *Journal of Research in Business, 1(6),* 50-57

Ahmed, A S , Takeda, C , & Thomas, S (1999) Bank loan loss provisions a reexamination of capital management, earnings management and signaling effects *Journal of Accounting and Economics, 28(1),* 1-25

Akhtar, M F , Ali, K , & Sadaqat, S (2011) Liquidity risk management a comparative study between conventional and Islamic banks of Pakistan *Interdisciplinary Journal of Research in Business, 1(1),* 35-44

Alam, N (2012) Efficiency and risk-taking in dual banking system evidence from emerging markets *International Review of Business Research Papers, 8(4),* 94-111

Ali, S S (2004) Islamic modes of finance and associated liquidity risks Paper prepared for Conference on Monetary Sector in Iran Structure, Performance and Challenging Issues Tehran – February, 2004

Angbazo, L (1997) Commercial bank net interest margins, default risk, interest-rate risk, and off-balance sheet banking *Journal of Banking & Finance, 21,* 55-87

Ariffin, N M , Archer, S , & Karim, R A A (2009) Risks in Islamic banks Evidence from empirical research *Journal of Banking Regulation, 10(2),* 153-163

Ariffin, N M , & Kassim, S H (2011) Risk Management Practices and Financial Performance of Islamic Banks Malaysian Evidence *Islamic Economics & Finance Pedia*

Ariss, R T (2010) Competitive conditions in Islamic and conventional banking A global perspective *Review of Financial Economics 19(3),* 101-108

Ariss, R K , & Sarieddine, Y (2007) Challenges in implementing capital adequacy guidelines to Islamic banks *Journal of Banking Regulation, 9 (1),* 46–59

Atindéhou, R B , & Gueyie, J P (2001) Canadian chartered banks' stock returns and exchange rate risk *Management Decision, 39 (4),* 285-295

Baele, L , Farooq, M , & Ongena, S (2014) Of religion and redemption Evidence from default on Islamic loans *Journal of Banking & Finance, 44,* 141-159

Ballester, L , Ferrer, R , Gonzalez, C , & Soto, G M (2009) Determinants of interest rate exposure of Spanish banking industry Instituto Valenciano de Investigaciones Económicas, S A (Ivie) in its series Working Papers

Beck, T , Demirguç-Kunt, A , & Merrouche, O (2013) Islamic vs conventional banking Business model, efficiency and stability *Journal of Banking & Finance, 37(2),* 433-447

Berger, A N , & DeYoung, R (1997) Problem loans and cost efficiency in commercial banks *Journal of Banking & Finance, 21,* 849-870

Big interest, no interest (2014, September 13) The Economist Retrieved November 23, 2015 from http //www economist com/news/finance-and-economics/21617014-market-islamic-financial-products-growing-fast-big-interest-no-interest

Chamberlain, S , Howe, J S , & Popper, H (1997) The exchange rate exposure of U S and Japanese banking institutions *Journal of Banking & Finance 21,* 871-892

Choi, J J , Elyasiani, E , & Kopecky, K J (1992) The sensitivity of bank stock returns to market, interest and exchange rate risks Journal of Banking and Finance, 16, 983-1004

Choi, J J , & Elyasiani, E (1997) Derivative exposure and the interest rate and exchange rate risks of U S banks *Journal of Financial Services Research, 12 (2/3),* 267-286

Chong, B S , & Liu, M H (2009) Islamic banking interest-free or interest-based? *Pacific-Basin Finance Journal, 17(1),* 125-144

Corsetti, G , Pesenti, P , & Roubini, N (1998) Fundamental determinants of the Asian crisis A preliminary empirical assessment JIMF-Fordham University conference on "Perspectives on the Financial Crisis in Asia"

Foos D , Norden, L , & Weber, M (2010) Loan growth and riskiness of banks *Journal of Banking & Finance, 34(12),* 2929-2940

Gatev, E , Schuermann, T , & Strahan, P E (2009) Managing bank liquidity risk How deposit-loan synergies vary with market conditions *Review of Financial studies, 22(3),* 995-1020

Ghannouci, W , Fiordelisi, F , Molyneux, P , & Radic, N (2012) Do Islamic and Conventional banks have the same technology? Working Paper London Metropolitan University, London, UK Retrieved November 27, 2015, from http //eprints hud ac uk/16671/

Greuning, H V , & Iqbal, Z (2008) Risk analysis for Islamic banks World Bank Publications

Hanif, M , Tariq, M , Tahir, A , & Momeneen, W U (2012) Comparative performance study of conventional and Islamic banking in Pakistan *International Research Journal of Finance & Economics, (83)*

Hassan Al-Tamimi, H A & Mohammed Al-Mazrooei, F (2007) Banks' risk management a comparison study of UAE national and foreign banks The *Journal of Risk Finance, 8(4),* 394-409

Hassan, A (2009) Risk management practices of Islamic banks of Brunei Darussalam *The Journal of Risk Finance, 10 (1),* 23-37

How, J C Y , Karim, M A , & Verhoeven, P (2005) Islamic financing and bank risks The case of Malaysia *Thunderbird International Business Review 47(1)* 75-94

Hunjra, A I & Bashir, A (2014) Comparative Financial Performance Analysis of Conventional and Islamic Banks in Pakistan *Bulletin of Business and Economics, 3(4),* 196-206

Ika, S R , & Abdullah, N (2011) A comparative study of financial performance of Islamic banks and conventional banks in Indonesia *International Journal of Business and Social Science, 2(15),* 199-207

Iqbal, A (2012) Liquidity Risk Management A Comparative Study between Conventional and Islamic Bank of Pakistan *Global Journal of Management and Business Research, 12(5),* 54-64

Islam, M M , & Chowdhury, H A (2009) A comparative study of Liquidity management of an Islamic bank and a Conventional Bank The Evidence from Bangladesh *Journal of Islamic Economics, Banking and Finance 5(1),* 89-108

Islamic Financial Services Board (2015) Islamic Financial Services Industry Stability Report 2015 Malaysia Retrieved from http www islamicfinance com wp-content/uploads/2015/06/Islamic-Finance pdf

Kabir, N , Worthington, A C , & Gupta, R (2014) Comparative Credit Risk in Islamic and Conventional Banks Available at SSRN 2491951

Khambata, D , & Bagdi, R R (2003) Off-balance-sheet credit risk of the top 20 Japanese banks *Journal of International Banking Regulation, 5 (1),* 57–71

Khan, M M , & Bhatti, M I (2008a) Development in Islamic banking A financial risk-allocation approach *The Journal of Risk Finance, 9 (1),* 40-51

Khan, M M , & Bhatti, M I (2008b) Islamic banking and finance On its way to globalization *Managerial Finance, 34 (10),* 708-725

Loghod, H A (2010) Do Islamic Banks Perform Better than Conventional Banks? Evidence from Gulf Cooperation Council countries *Journal of Management, 7(3),* 56-72

Madura, J , & Zarruk, E R (1995) Bank exposure to interest rate risk A global perspective *The Journal of Financial Research, 18 (1),* 1-13

Metwally, M M (1997) Differences between the financial characteristics of interest-free banks and conventional banks *European Business Review, 97(2)* 92-98

Mounira, B A , & Anas, E L M E L K I (2008) Managing Risks and Liquidity in an interest free banking Framework The case of the Islamic banks *International Journal of Business and Management, 3(9)* 80-95

Olson, D , & Zoubi T A (2008) Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region *The International Journal of Accounting 43(1),* 45-65

Porter, R L , & Chiou, W J P (2013) How has capital affected bank risk since implementation of the Basel accords *Banks and Bank Systems, 8(1)* 63-77

Qayum, K (2010, June 16) Pakistan Developing Shariah-Compliant Products for Money Market Retrieved June 18, 2010, from http://www.businessweek.com/news/2010-06-16/pakistan-developing-shariah-compliant-products-for-money-market.html

Rahman Z A (2007, February 22) Differences between Islamic Bank and Conventional Retrieved November 22, 2015, from http www zaharuddin net/senarai-lengkap-artikel/38 297-differences-between-islamic-banks-a-conventional html

Risk Management in Islamic Banks (2013) Asian Institute of Finance, Malaysia Retrieved November 10, 2015 from http / www aif org my/clients aif_d01/assets/multimediaMS publication Case Study_RiskManagementIslamic pdf

Rosly, S A (1999) Al-bay' bithaman ajil financing Impacts on Islamic banking performance *Thunderbird International Business Review, 41(4/5),* 461-480

Ryu, K P , Piao, S Z , & Nami, D (2012) A Comparative study between the Islamic and conventional banking systems and its implications *Scholarly Journal of Business Administration, 2(5)*, 48-54

Said, D (2013) Risks and efficiency in the Islamic banking systems the case of selected Islamic banks in MENA region *International Journal of Economics and Financial Issues 3(1)*, 66-73

Samad, A (2004) Performance of Interest-free Islamic banks vis-à-vis Interest-based Conventional Banks of Bahrain *International Journal of Economics, Management and Accounting, 12(2)*, 1-15

Siddiqui, A (2008) Financial contracts, risk and performance of Islamic banking *Managerial Finance, 34 (10)*, 680-694

Strategic Plan Islamic Banking Industry of Pakistan 2014 --2018 (2014, January) Retrieved November 20, 2015, from http://www sbp org pk departments/pdf/StrategicPlanPDF/Strategy Paper-Final pdf

Tai, L (2014) Efficiency and performance of conventional and Islamic banks in GCC countries *Middle East Journal of Business, 9(2)*, 60-71

Widagdo, A K , & Ika, S R (2008) The Interest Prohibition and Financial Performance of Islamic Banks Indonesian Evidence *International Business Research, 1 (3)*, 98-109

Wilson, R (2000) Challenges and opportunities for Islamic banking and finance in the West The United Kingdom experience *Islamic Economic Studies, 7 (1 & 2)*

Wetmore, J L (2004) Panel Data, Liquidity Risk, and Increasing Loans-to Core Deposits Ratio of Large Commercial Bank Holding Companies (1992–2000) *American Business Review, 22(2)* 99-107

Zeitun, R (2012) Determinants of Islamic and conventional banks performance in GCC countries using panel data analysis *Global Economy and Finance Journal, 5(1)*, 53-72