



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH  
Volume 12 Issue 5 Version 1.0 March 2012  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals Inc. (USA)  
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

# Liquidity Risk Management: A Comparative Study between Conventional and Islamic Banks of Pakistan

By Anjum Iqbal

*Comsats Institute of Information Technology Abbottabad, Pakistan*

**Abstract** - The banking sector is viewed as an important source of financing for many businesses. In order to appraise and weigh up the soundness and reliability of banking industry, the information on the risk and how the fluctuations are managed are important to consider. Among the financial risks liquidity risk of the bank are crucial to consider. Appalling financial condition of the banks can lead to decreasing the value of bank. Managing the liquidity risk is required to be monitored and managed effectively and cautiously. Liquidity management is part of the larger risk management of the banking sector, whether they are conventional or Islamic. This study investigated the size of the bank, Non-performing loan ratio (NPL), return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR) with the liquidity risk of conventional and Islamic banks of Pakistan. The study is done on the secondary data for the period 2007-2010. The study found the significant and positive relation of CAR, ROA, ROE and size of the bank with the liquidity risk in both the models, whereas the negative and significant relation of NPL is observed in both the models.

**Keywords** : Liquidity risk, Islamic bank, conventional bank.

**GJMBR-A Classification** : FOR Code: 150203, 150205 JEL Code: G21, G32



*Strictly as per the compliance and regulations of:*



# Liquidity Risk Management: A Comparative Study between Conventional and Islamic Banks of Pakistan

Anjum Iqbal

**Abstract** - The banking sector is viewed as an important source of financing for many businesses. In order to appraise and weigh up the soundness and reliability of banking industry, the information on the risk and how the fluctuations are managed are important to consider. Among the financial risks liquidity risk of the bank are crucial to consider. Appalling financial condition of the banks can lead to decreasing the value of bank. Managing the liquidity risk is required to be monitored and managed effectively and cautiously. Liquidity management is part of the larger risk management of the banking sector, whether they are conventional or Islamic. This study investigated the size of the bank, Non-performing loan ratio (NPL), return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR) with the liquidity risk of conventional and Islamic banks of Pakistan. The study is done on the secondary data for the period 2007-2010. The study found the significant and positive relation of CAR, ROA, ROE and size of the bank with the liquidity risk in both the models, whereas the negative and significant relation of NPL is observed in both the models.

**Keywords** : *Liquidity risk, Islamic bank, conventional bank.*

## 1. INTRODUCTION

Islamic banking emerged as a practical reality and started functioning in 1970s. Since then it has been growing continuously all over the world. Presently, Islamic banking industry has reached US\$1.0 trillion US dollars by the end of 2008. International Rating Agency, Standard & Poor estimates that Islamic financial industry has potential to grow to US\$4.0 trillion over medium term. The speed of the growth of Islamic banking all over the world including Pakistan has been expedited since 2002. (Awan, 2009) The importance to investigate the liquidity risks faced by Islamic banks of Pakistan could be justified by the fact that in Pakistan the Islamic banks are engaged in significant roles to complementing the services as parallel to the conventional banks. Islamic banks of Pakistan show a significant growth from the last many years. According to the State Bank of Pakistan, Islamic banking industry (IBI) continued to grow during the second quarter of 2011 with improved asset quality. By growing at 13 percent during the quarter, Islamic banking assets stand

at Rs. 560 billion, constituting more than 7 percent share of overall banking industry's assets. In terms of deposits the industry share of IBI has reached 7.6 percent (Islamic banking Bulliten, June 2011).

The concept of liquidity risk in finance principally lies in two areas (a) the market liquidity risk and (b) the funding liquidity risk. The former related to the financial instruments in the financial market. This may due to inadequate market depth, market disruption or the inability of the bank to access the market. The later liquidity risk is related to the solvency, it is the possibility that a bank may be unable to meeting funding requirements to finance its assets. It also includes the obligation of banks to make payments to third parties.

The current research study will focus on the second area of liquidity risk I-e funding liquidity risk. The underlying objective of the study is to compare the liquidity risk of the Islamic and the conventional banks in Pakistan. The analysis is done of the period 2007-2010. The difference between the liquidity risk of Islamic and conventional banking is also analyzed. Currently there are 5 Islamic banks operational in Pakistan that provide full fledge Islamic service. The analysis is done using the secondary data and the factors influencing the liquidity risk of the banking sector are used in the hypothesis, tested empirically, by find the descriptive, correlation and regression analysis on the data. More over the ratio analysis of the means of the data from 2007-2010 are also done. Lastly the conclusion, recommendations and limitations of the research study are given.

### a) *Liquidity risk of conventional Banks*

Liquidity risk problem in banks is defined as the risk of being unable either to meet the obligations of the depositors or to fund increases in assets as they fall due without incurring unacceptable costs or losses. From the risk point of view two explanations can be made. First the 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, thus if the optimal utilization is not made a mismatch occurs on the liability and asset side. Secondly medium to short term assets are funded by the stream of short term liabilities including the dues of the other banks.

*Author* : Department of Management Sciences, COMSATS Institute of Information Technology, Abbottabad, Pakistan.

The liquidity problem also arises because of the depositors deciding to redeem their deposits but the bank has not enough cash in hand. In real, banks find imbalances in the asset and liability side on the regular basis and must need to manage that accurately else they would face solvency risks. In order to understand the liquidity risk of the Islamic banks we first need to understand the underlying principles of the Islamic Banking.

#### b) *Liquidity Risk of Islamic banks*

The liquidity risk is the important to management for the conventional as well as the Islamic banks in order to be solvent. Principally, any effort by Islamic banks to construct a sound liquidity management should be arranged across the real business transaction. Because the Islamic banks deals in the real assets for so it deals in within the business cycles, cooperation among the business partners and good conduct of the stakeholders. This is the core stone of all the Islamic banking operations. So Islamic banks are more exposed to the liquidity risk there is disharmony between business partners or an obvious decline of business condition.

As Islamic banks are operating on the trust basis according to the Shariah values and principles, which infuse the industry from the inside, treat the bank management, shareholders and stakeholders as trusted business partners (Yaqoobi, 2007). This ultimately forms a system of cooperation among the business partner, cooperation, symmetric information and balance in the allocation of funds on both the asset and liability sides.

Prominent feature is of the PLS which directs sharing of risks among all the business participants thereby reducing the liquidity risks. But the Islamic banking operations associated with the real business transactions, they are more exposed to various kinds of business and market risks such as price fluctuation risk, asset losses risk, amortization and economic downturn risk. These risks may affect the performance of the Islamic banks and causes a mismatch between the assets and liability. The various contracts available to Islamic banks can be divided into three categories: (a) profit and loss sharing contracts such as Mudarabah and Musharakah (b) trade based contracts such as Murabaha, Salam and Istisna and (c) service based contract such as Ijarah. (Ali, 2004).

## II. LITERATURE REVIEW

There are extensive studies done on the comparison of Islamic and conventional banks and among them the liquidity risk management is of high concerns.

According to the Deloitte (the second largest accountancy firm in the world) report of Middle East Islamic Financial Survey done on September 25, 2010 liquidity ratio received the highest score and was

considered the top priority, followed by the solvency ratio, leverage ratio and return on average assets, respectively. The issue of liquidity in Islamic finance has been widely argued, and several proposals are now under consideration to develop this segment of the industry. Central banks in the region and elsewhere in Asia, as well as industry standard-setters, are setting the stage for developing this market by means of innovative Shari'ah-compliant short- and medium-term instruments.

Liquidity in financial market has numerous implications. Liquidity signifies the ability of a financial firm to keep up all the time a balance between the financial inflows and outflows over the time. (A & Ganga, 2009).

The study implies the descriptive, correlation and regression analysis for comparative analysis of Islamic and conventional bank's liquidity risk management in Pakistan for the period 2006-09. The sample of 6 conventional and 6 Islamic Banks are taken for study. The independent variables i.e size of the bank, Networking capital, return on Equity, Capital Adequacy ratio and return on assets are used and found their impact on the dependent variable of liquidity risk. The authors have found that conventional banks in Pakistan were more tend on the way to considering projects with long-term financing. In addition the study found that superior performance in elements of assets and return confirmed that they had better profitability and liquidity risk management than Islamic banks (Akhtar, Ali, & Sadaqat, 2011).

The paper investigates the factors influencing the risk management practices of Islamic banks in Pakistan. The authors used the size, leverage, NPLs ratio, capital adequacy and asset management ratios as independent variable and their influenced is checked on the liquidity risk. The study comprises of the data of Islamic banks from the period 2006-2009. A significant positive relation is found of the size, asset management and capital adequacy ratio and NPLs ratio have a significant negative relationship with the liquidity risk (Ahmed, Akhtar, & Usman, 2011).

Ismail(2010) conducted the study discuss the liquidity risk management of Islamic banks of Indonesia and recommend policies to improve the management of liquidity risk. Islamic and conventional Banks face a number of risk areas which may affect their performance and operations. Liquidity risk is one of the major areas. Therefore the banks should have the robust liquidity risk management policies, a responsive assets and liability committee. Author argued that the Islamic banks minimize the liquidity risk from both internal and external perspectives. This is due to Shariah values and principals being followed (Ismail, 2010).

The study is done by Muhammad, Tariq and Momeneen (2009) to find out the comparative performance evaluation of the conventional and Islamic

banks in Pakistan from 2005-09. The study used the sample of 22 conventional banks and 5 Islamic banks. The model used is the Bank-o-meter model is used to measure the solvency of the banks. Profitability and liquidity of banks are compared using nine financial ratios. For measuring the liquidity loan to asset ratio, liquid assets to deposits ratio and loan to deposits and borrowing ratio is calculated. The results show that conventional banks are more dominant in liquidity management. The results concluded is the low share of market occupied by the Islamic banks than the conventional banks (Muhammad, Tariq, Tahir, & Momeneen, 2009).

The authors Ika and Abdullah (2011) compared the Islamic and conventional banks in Indonesia from the period 2000-07 and measured the profitability, liquidity and credit abilities of Islamic and conventional banking sectors. They used the financial ratio analysis to measure the liquidity of banks. The ratios included cash deposit ratio, loan deposit ratio, current ratio and current asset ratio. The sample consisted of 6 conventional banks and 3 Islamic banks. Mann-Whitney model is used to test the hypothesis. The study concluded that the Islamic banks are more liquid than the conventional banks (Ika & Abdullah, 2011).

Muhammad and Manarvi (2011) they compared the performance of the Islamic and the conventional banks in Pakistan from the period 2005-09 using the CAMEL test. A sample of 10 banks consisting of 5 Islamic and 5 conventional banks was taken for study. The author concluded that the Islamic banks are better in processing adequate capital and presents a better liquidity position of Islamic banks as compared to conventional banks in Pakistan. Islamic banks showed a safer position specified by the debt/equity ratio (Muhammad & Manarvi, 2011).

Awan (2009) used the comparative analysis of the Islamic and the conventional banks in Pakistan from the period 2006-2008. The analysis is the done while keeping in view the size of the banks. The banks of the same size are used for the analysis purpose. The sample consists of 6 Islamic banks and 6 conventional banks are taken. The preliminary Islamic banking model is also discussed. The ratio analysis shows that Islamic banks out perform in assets, deposits, financing, investment and quality of services and recovery of loan (Awan, 2009).

The liquidity ratios Net loans to total asset ratio, liquid asset to deposit ratio, short term fund ratio is used for comparison of Islamic and conventional banks of Pakistan for the period 2006-2010. The financial ratios and trend analysis reveals a good performance of Islamic bank. (Akhter, Raza, Orangzab, & Akram, 2011).

An important feature to note about Islamic banks in Gulf Cooperation Council Countries (GCC) is their relative excessive liquidity. This has been interpreted as implying that most Islamic banks have the

tendency to indulge in quick return lending. Moreover, this high ratio of funds shows the difficulty that Islamic banks may be facing in finding avenues for short-term investment of funds as well as reluctance to undertake a project-related funding. The extent to which Islamic banks can overcome the application of fund problem would depend on the willingness of the government to create suitable (non-interest bearing) short-term instrument as an outlet for excess funds of Islamic banks. Islamic banks had a significantly higher Cash to Assets and cash to deposits ratio when compared to conventional banks. (Loghody, 2006)

The study does the analysis of the liquidity position of Islamic and conventional banks in Bangladesh for the period 2003-2006. Long term liquidity position and short term liquidity position is analyzed using the regression model and Islamic banks seemed to perform better than the conventional banks (Islam & Chowdhury, 2007).

Liquidity risk is defined as a mismatch between the maturities of two sides of the balance sheet. Creating the risk management is important for both the Islamic and conventional banks. Liquidity is divided into two types by the author the one is the liquidity of assets which is defined as the inability to sell assets at current market prices and liquidity instability of liability which is defined as the inability to assess sufficient funds to meet payment obligations in a timely manner (Arab & Anas, 2008). A bank with a strong liquidity profile should generally be able to survive. Much of the funds of Islamic financial institutions come through PLS investment accounts without any fixed obligation attached to them. Rather the problem for Islamic financial institutions has been excess liquidity. Islamic banks need to be even more cautious about the maturity structure of their assets. In order to remain solvent, banks need to maintain assets of a short-term nature. The Establishment of specialized institutions for managing liquidity risks has helped to solve the liquidity problems. This paper argues for the need for Islamic banks to strengthen risk management practices. Without an efficient capital market to operate within, Islamic banking finance will not continue to grow meaningfully. The market requires liquidity and price transparency to enhance a secondary market.

### III. RESEARCH METHODOLOGY

#### a) Objectives of the study

- The objective of the research study is to compare the liquidity risk of the Islamic and the conventional banks in Pakistan from the period 2007-2010 using the ratio analysis by comparing the mean values of ratios.
- The relationship and effect of the independent variables including the size of the bank, NPL ratio, ROE, ROA and CAR on the dependent variable that



is liquidity risk is analyzed. This analysis is done using the descriptive, Pearson correlation and regression analysis.

#### b) Sample of the research

At present 5 full fledged Islamic banks and 23 Conventional banks are operating in Pakistan. Total 5 Islamic banks and 5 conventional banks are included in the sample. Five Islamic Banks that are included in the sample are mentioned in the annexure a table 3.1.

#### c) Selection Criteria

KPMG international is a global network of professional firms. In KPMG Banking survey, 2010, Pakistani banking sector has been divided into three segments: large size banks, medium size banks and small size banks. This classification is done on the basis of size, assets, deposits, loans and financing of the banks. The same criterion is used as a yardstick for selection of banks out of the third segment.

#### d) Hypothesis

H1: There is a positive relationship between the size of the bank and liquidity risk.

H2: There is a negative relationship between non-performing loans and liquidity risk.

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

H4: There is a positive relationship between return on assets and liquidity risk.

H5: There is a positive relationship between capital adequacy ratio and liquidity risk.

#### e) Research Model

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

The variable along with their proxies are mentioned in the annexure a table 3.2. The factors influencing the liquidity risk are the same as being used by (Akhtar, Ali, & Sadaqat, 2011) in their research study. Beta measure and standard deviation is used as the important measure of the risk factor as proposed by Modigliani and Pogue (Modigliani & Pogue, 1974) where Beta is the relative measure of the risk and standard deviation is the measure of the total risk.

## IV. DATA ANALYSIS

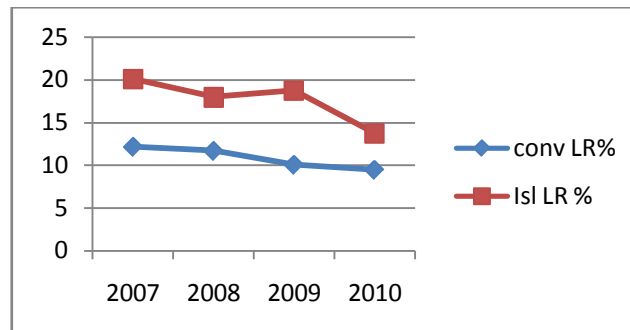
#### a) Ratio Analysis

The ratio analysis on the historical data from the period 2007-2010 of the conventional and Islamic banks of Pakistan is done. The ratios includes the liquidity risk measured by cash and cash equivalent to total assets, size of the bank, non-performing loan ratio, return on equity, capital adequacy ratio and return on assets. 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.

#### i. Liquidity Risk

The liquidity risk of the Islamic and conventional banks is measured using the cash and cash equivalent to total assets. The high figures of the ratio show the better liquidity position.

Figure 4.1: Liquidity Risk

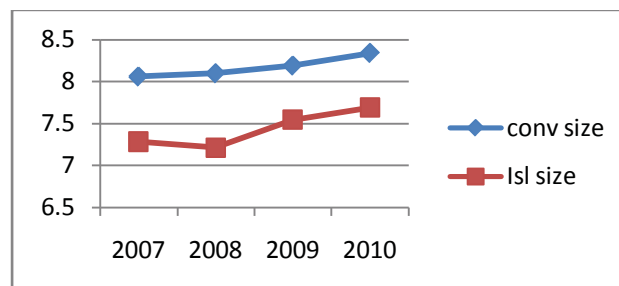


According to figure Islamic banks had intermittent deposit to asset ratios showing varying amount of cash and cash equivalents to total assets. This ratio means that Islamic banks have the high liquid assets than the conventional banks.

#### ii. Bank Size

The size of the bank is measured by taking the logarithm of total assets.

Figure 4.2: Bank size

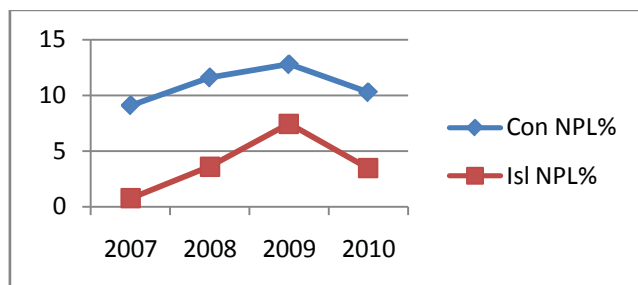


The size of the conventional banks is more than Islamic banks. This is because the Islamic banks are the new entrants in the banking industry of Pakistan. The mean figure of Islamic bank is 7.286 in 2007 the figures are lower because most of the Islamic banks started operated in Pakistan in 2007. However both the banks are showing increase of size from the period 2007-2010.

#### iii. Non-Performing Loan Ratio

The non-performing loan ratio is measured using the non-performing loans to total advances. The higher ratios indicate the large number of bad debts and ultimately the loss for the banks.

Figure 4.3 : Non-performing loan ratios

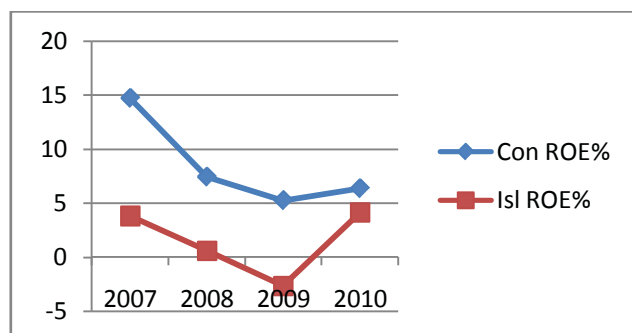


The NPL ratio shows that the Islamic banks have the low ratio of NPL than the conventional banks. The highest figure of the NPL ratio is in 2009. The reason is in Islamic banks there is a prohibition of interest other modes of trading including the profit sharing like Musarakha and Mudarabaha is used. Moreover, high NPLs to deposits ratio of Conventional also reflects the reckless lending practice of Conventional banks and this is one of the main causes of their existing liquidity problem.

#### iv. Return On Equity

The return on equity is measured as the ratio of net income to total equity. The high ratios indicate the better return to the investments of the shareholders.

Figure 4.4 : Return on Equity

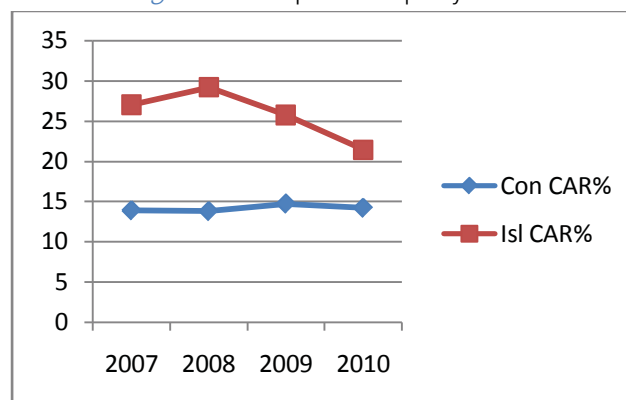


The ROE of the conventional banks are higher than the Islamic banks. So a less excess to the market is seen where the Islamic banks are trying to expand initially. However a decreasing trend is seen of the ROE in both banks through out the years 2007-2009. This shows that slowly Islamic banks are moving towards a better ROE position which is inline with the conventional banks. ROE predicting handsome dividend for the shareholders of Islamic banks in near future.

#### v. Capital Adequacy Ratio

A Capital Adequacy Ratio is a measure of a bank's capital. It is expressed as a percentage of a bank's risk weighted credit exposures. This ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world.

Figure 4.5 : capital adequacy ratio

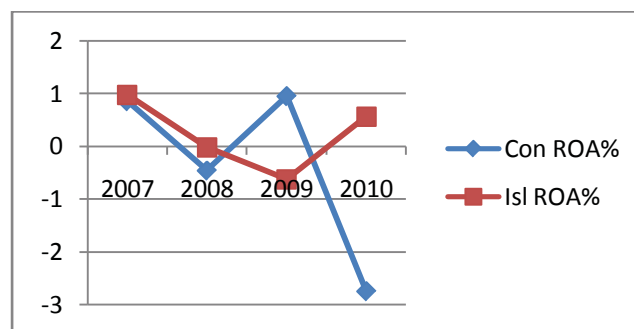


The capital adequacy ratio of the Islamic banks are observed to be much higher than the conventional banks. Islamic banks maintained a very high CAR which means that they had abundant capital to manage any shock to the balance sheet. Their high CAR denotes their ability to maintain confidence in the Islamic banking system and protect their depositors and lenders. The high CAR of Islamic banks shows their financial soundness. This comparison proves that Islamic banks have been many steps ahead of Conventional banks and had more capital than them.

#### vi. Return On Assets

The return on assets is calculated as net profit of the banks to total assets. The return on assets ratio indicates how much the banks are generating profit through efficient employment of its resources.

Figure 4.6 : Return on Assets



The return on assets of the Islamic and conventional banks is showing a decreasing trend from 2007 to 2008. The ROA of the Islamic bank fell more which shows the lack of management. Furthermore, Islamic banks are focused on growth and expansion strategies which deviates them from profit-oriented strategies. Conventional banks lead the way in earning on their invested assets. This determines better investment decision, more profit for banks and shareholders.

#### b) Descriptive Statistics

The table below shows the descriptive analysis of all the dependent variable liquidity risk and the

independent variables including size of the banks, Non-performing loans to total advances, ROE, ROA, CAR of the conventional and Islamic banks. It includes the mean, maximum, minimum and the standard deviation of the conventional and the Islamic banks. The value of the mean reports the arithmetical average of the variables which are included in the study. The minimum and maximum values indicate 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 small standard deviation point towards that the data points are inclined to be extremely close to the mean; while high values of standard deviation points that the data set is broaden out over a large range of values.

**Table 4.7 :** Descriptive statistics of Conventional Banks

Descriptive Statistics-Model 1 (Conventional Banks)				
	Minimum	Maximum	Mean	Standard deviation
Liquidity risk	0.0567	0.1712	0.11345	0.36274
Size	7.47	9.5	8.1725	0.52887
NPL	0	0.614	0.179525	0.137942
ROE	-0.28	0.49	0.063225	0.15389
CAR	0.1053	0.985	0.236985	0.23433
ROA	-6.15	1.47	-0.11605	1.87343

### c) Pearsons' Correlation Analysis

**Table 4.9 :** Correlation Matrix of Conventional Bank (Model 1)

Correlations-Model 1 (Conventional banks)						
		Lriskc	Sizec	NPLc	ROEc	ROAc
Lriskc	Pearson Correlation	1				
	Sig. (2-tailed)					
Sizec	Pearson Correlation	0.113	1			
	Sig. (2-tailed)	0.063				
NPLc	Pearson Correlation	-0.188	-0.313	1		
	Sig. (2-tailed)	0.042	0.178			
ROEc	Pearson Correlation	0.535	0.251	-0.137	1	
	Sig. (2-tailed)	0.014	0.284	0.563		
ROAc	Pearson Correlation	0.510	0.022	0.015	0.628	1
	Sig. (2-tailed)	0.021	0.924	0.946	0.002	
CARc	Pearson Correlation	0.310	0.162	-0.072	0.142	0.129
	Sig. (2-tailed)	0.018	0.492	0.762	0.547	0.584

**\*\*Correlation is significant at the 0.02 level (2-tailed), \* Correlation is significant at the 0.05 level (2-tailed)**

The correlation shows that the size has the positive and significant relation with the liquidity risk at 94% level of significance. The Pearson value of the size is 0.113 which shows the weak relation between the liquidity risk and size of the conventional banks. NPL shows a negative relation with the liquidity risk and the relation is significant at 96% significance level. ROE

**Table 4.8 :** Descriptive statistics of Islamic Banks

Descriptive Statistics- Model 2 (Islamic Banks)				
	Minimum	Maximum	Mean	standard deviation
Liquidity Risk	0.0705	0.3965	0.1762	0.094919
Size	6.5	8.18	7.434	0.41984
NPL	0	0.1463	0.03816	0.03704
ROE	-0.1168	0.17	0.01383	0.8987
CAR	0.0958	0.518	0.258655	0.012921
ROA	-3.49	1.8	-0.1065	1.33101

shows a positive and significant relation at 99% significant level. ROA of the conventional banks have the positive and significant relation with 98% significant level. The CAR shows a positive and significant relation with the liquidity risk and the significant level is 99%.

Table 4.10 : Correlation Matrix of Islamic Bank (Model 2)

Correlations-Model 2 (Islamic Banks)						
		LRiski	Sizei	NPLi	ROEi	ROAi
LRiski	Pearson Correlation	1				
	Sig. (2-tailed)					
Sizei	Pearson Correlation	0.079	1			
	Sig. (2-tailed)	0.674				
NPLi	Pearson Correlation	-0.088	0.13084	1		
	Sig. (2-tailed)	0.057	0.58244			
ROEi	Pearson Correlation	0.155	0.60165	-0.34	1	
	Sig. (2-tailed)	0.051	0.00501	0.142		
ROAi	Pearson Correlation	0.02	0.42031	-0.483	0.8876493	1
	Sig. (2-tailed)	0.019	0.06501	0.031	1.79	
CARi	Pearson Correlation	0.115	-0.7012	0.156	-0.548267	-0.4634
	Sig. (2-tailed)	0.046	0.00057	0.512	0.0123175	0.0396

**\*\*Correlation is significant at the 0.02 level (2-tailed), \* Correlation is significant at the 0.05 level (2-tailed)**

The correlation shows the positive and significant relation of the size of the banks with the liquidity risk. NPL shows a negative relation with the liquidity risk and the relation is significant at 95% significance level. ROE shows a positive and significant relation at 95% significant level. ROA of the conventional banks have the positive and significant relation with 99% significant level.

#### d) Regression Analysis

Table 4.11 : Regression Analysis of Conventional Banks (Model 1)

Coefficient-Model 1 (Conventional Banks)			
	Standardized Coefficients	t	Sig.
	Beta		
(Constant)		2.489	0.026
Size	0.33223	1.59	0.013
NPL	-0.2224	-1.107	0.029
ROE	0.40485	1.572	0.014
ROA	0.2334	0.935	0.024
CAR	0.2605	1.343	0.012
R-Square	0.497	Prob (Fstatistics)	0.000
Adjusted R-square	0.372	Durbin Watson Stat	1.988

Here the F-statistics is less than 0.05 which shows that the model 1 is statistically significant. The R-square value for the Model 1 is 0.497 which shows that 49.7% of the variability in the liquidity is explained by the independent variables. The adjusted R-square value is 0.372 which shows that 37.2% of the liquidity risk is explained by the independent variables. The Durbin-Watson statistics value is 1.988 which is approximately equal to 2, shows that the error term is independent and is free of autocorrelation.

In the Model 1 the size of the bank have the positive and significant relation with the liquidity risk. The better size of bank indicates that the banks have the better ability to establish big market share and generate higher profits. The beta value shows that 33% changes in the liquidity risk is observed as a result of 1% increase in the size of the bank. The NPL ratio has the negative significant relation with the liquidity risk with the confidence level of 98%. This shows the greater the bad debts of the conventional banks the more with adverse will be the liquidity position of the bank. The figures shows that for every 1 % increase in NPL ratio the liquidity risk increases to 22%. ROE has the significant and positive relation with the liquidity risk in the Model 1. The figure shows that 1% of the increase in ROE the liquid position goes to 40%. Similarly the capital adequacy ratio (CAR) has significant positive relation with the liquidity risk with 99% confidence level.



**Table 4.12 :** Regression Analysis of Islamic Banks (Model 2)

Coefficient-Model 2 (Islamic Banks)			
	Standardized Coefficients	t	Sig.
	Beta		
(Constant)		0.423	0.679
Size	0.030656	0.073	0.059
NPL	-0.00295	-0.01	0.01
ROE	0.994461	1.614	0.041
ROA	0.762249	1.325	0.037
CAR	0.327953	0.92	0.022
<b>R-Square</b>	0.718	<b>Prob (F-statistics)</b>	0.001
<b>Adjusted R-square</b>	0.521	<b>Durbin Watson Stat</b>	2.74

The F-statistics of the Model 2 shows that the model is a good fit. The R-square value shows that 0.718 or 71.8% of the variability in the liquidity risk is explained by the independent variables. The Adjusted R-square value shows that 52.1% of the explanatory variable is explained by the independent variables. The Durbin-Watson statistics value is 2.574 which show that the error term is independent and is free of autocorrelation. There is no autocorrelation in the error term.

In the Model 2 the size of the bank have the positive and significant relation with the liquidity risk at 95% confidence level. NPL ratio has the negative significant relation with the liquidity risk with the 0.00 % of the significance level. The figures show 0.3% decrease is observed in the liquidity because of 1% increase in the value of NPL.

ROE has the significant positive relation with the liquidity risk in the Model 2. The figures show that 99% increase is observed in liquidity position as a result of 1% increase in ROE. The capital adequacy ratio (CAR) has significant positive relation with the liquidity risk with 98% of confidence level. The ROA has the significant positive relation with the liquidity risk in the Model 2 with the 97% confidence level. The figure shows that 76% of the liquidity position is observed due to 1% increase in ROA. This is because each transaction in the Islamic banks must be backed by the asset rather than dealing in money. Hence the return on assets has the positive relation with the liquidity risk. The more returns an asset yield the better will the liquidity position of the Islamic banks.

The size of the bank positive and significant relation with the liquidity risk in both the Models hence Hypothesis H1 is accepted. The NPL ratio has negative significant relation with the liquidity risk in both the models hence H2 is accepted. The capital adequacy ratio and return on assets and return on equity have the

significant positive relation with the liquidity risk hence H3, H4 and H5 are accepted. The regression highlights the NPL of the bank to be negatively and significantly related to the liquidity risk in the Model 1 and Model 2 which is in accordance with (Ahmed, Akhtar, & Usamn, 2011), (Akhtar, Ali, & Sadaqat, 2011). The same results are supported by (Sawada, 2010). This study found to have a significant positive relation and significant relation of capital adequacy ratio, return on assets with the liquidity risk in both the models. These results are in line with results of (Akhtar, Ali, & Sadaqat, 2011). The relation of Return of equity with the liquidity risk is positive and significant. These results are supported by (Rosly & Zaini, 2008).

## V. CONCLUSION AND RECOMMENDATIONS

### a) Conclusion

The study examines the liquidity risk management through the comparative analysis of the Islamic and the conventional banks of Pakistan from the period 2007-2010. The sample included 5 Islamic and 5 conventional banks of Pakistan. The selection criterion is based on KPMG banking survey report 2010, Pakistan. The independent variable includes the size of the bank, NPLs ratio, ROE, CAR, and ROA. The dependent variable includes the liquidity risk which is the measure of the most liquid assets of the banks. The analysis is done using the ratio analysis of the averages of the variables involves along with the descriptive and regression analysis.

The ratio analysis shows that better liquidity position of the Islamic banks as compared to the conventional banks. This shows the Islamic banks having the more of the liquid assets to pay off its obligations. The NPL ratio of the Islamic banks is showing a decreasing trend which means less of the non-performing loans of the Islamic banks and hence the less losses. It also predicts the better operations of the Islamic banks as compared to the conventional banks. The size of the Islamic banks is less than that of the conventional banks this is due to the fact that Islamic banks started operating in Pakistan in 2007. The capital adequacy ratio of the Islamic banks is far ahead of the conventional banks. Islamic banks seem to have to better the strong cushion against the balance sheet shocks such as payment of liabilities and the cover up their losses to protect their depositors and lenders. The regression analysis shows the NPL ratio having the significant positive relation with the liquidity risk this means more of the NPL ratio leads to the greater liquidity problems therefore hypothesis H2 is accepted for both the Models. The ROA along with CAR shows the significant positive relation with 98% and 90% confidence interval respectively in Model 1 and same ratios have the positive significant relation with the

liquidity risk with 98% and 97% confidence interval respectively in Model 2. Hence the hypothesis H4 and H5 are accepted for both the Models. The size of the bank shows the significant positive relation with the liquidity risk so the hypothesis H1 is accepted for both the Models.

#### b) Recommendations

In order to mitigate the liquidity risk of the banks, banks are recommended to:

1. Have a stand by account, these includes increase of the liquid assets of the banks
  - a) Currencies these are the liquidity that banks hold to meet daily transaction needs and that will be placed in the central bank if there is a surplus;
  - b) Central bank certificates. These are the safe and liquid deposits in the central bank;
  - c) Other commercial bank deposits. These are the bank's short-term deposits in the other commercial banks. Although these are less liquid than the central bank certificates, these deposits can also be redeemed on short notice;
  - d) Cash items in the process of collection. These include the checks deposited in the central bank or the other commercial bank deposits for which credits have not yet been received.
2. For the expected irregular demand for liquidity, the most recommended technique is to estimate accurately the short-term demand for liquidity. For the unpredictable irregular demand for liquidity, the techniques are:
  - a) having a Contingency Funding Plan,
  - b) combining cash flow matching and liquid assets,
  - c) prudently allocating the assets,
3. On the practical level, asset liability committee (ALCO) arranges the strategies to implement the liquidity management policies in cooperation with the Business Risk Management Committee, the Operational Risk Management Committee, and the Financial Risk Management Committee. Particularly, ALCO:
  - a) manages and monitors the daily liquidity position and collaterals on the asset and liability sides;
  - b) perceive any liquidity imbalance;
  - c) determines strategies to mitigate liquidity imbalance; and
  - d) Maintains good relationships with external parties to cooperatively manage and foresee liquidity pressures.
4. One of the common techniques used in banking theory to improve the performance of asset and liability is called the Gap Analysis. This technique aid the output of the assets side and the liability side over a certain period of time. It suggests that banks maintain a higher return on the asset side than the liability side.

## REFERENCES RÉFÉRENCES REFERENCIAS

1. A, V., & Ganga. (2009). Bank liquidity Risk Management and Supervision . Journal of Money, investment and banking , 79-126.
2. Abdullah, D. V. (2010). Liquidity Management in Institudtions offering Islamic Financial Services. Jeddah: Islmaic Financial Services Board.
3. Ahmed, N., Akhtar, M. F., & Usamn, M. (2011). Risk Management Practices and Islamic Banks: An Emprical Investigation from Pakistan. Lahore: Interdisiplinary journal of research in business.
4. Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Factors Influencing the Profitability of Islamic banks of Pakistan. Lahore: EuroJournals Publishing Inc.
5. Akhtar, M., Ali, K., & Sadaqat, S. (2011). Liquidity risk Management: A comparative study between Conventional and Islamic Banks of Pakistan. Lahore: Interdisciplinary Journal of Research in Business.
6. Akhter, W., Raza, A., Orangzab, & Akram, M. (2011). Efficiency and performance of Islamic Banking: The case of Pakistan. Lahore: Far East Research Centre.
7. Al Zarqa, S. M. (2000). Definition of Gharar. In M. A. Gamal, A basic Guide to Contemporary Islamic Banking and Finance. Houston .
8. Ali, S. S. (2004). Islamic modes of Finance and Associated liquidiy risk. Tehran.
9. Al-Tamimi, H. H. (2010). Factors Influecing performance of the UAE Islamic and Conventional National Banks. Sharjah: Global journal of Business Research.
10. Arab, M. B., & Anas, E. (2008). Managing Risks and liquidity in an Interest free Banking framework: The case of Islamic Banks. Tunisia: international journal if Business and Management.
11. Awan, A. G. (2009). Comparison of Islamic and conventional banking in Pakistan. Lahore: CBRC.
12. Dinger, V. (2009). Do foreign-owned banks affect banking system liquidity risk ? Journal of Comparative economics , 647-657.
13. Gamal, M. A. (2000). Prohibition of Riba and Gharar. In M. A. Gamal, A Basic Guide to Contemporary Islamic Banking and Finance. Houston.
14. Haron, & Sudin. (2004). Determinents of Islamic Bank Profitability . The Global Journal of Finance and Economics , 2-18.
15. Ika, S. R., & Abdullah, N. (2011). A comparative study of Financial performance of Islamic banks and conventional banks in Indonesia. International Joral of business and Social sciences.
16. Introduction to risk and return: Concepts and Evidence. (1974). Financial analyst journal , 69-86.
17. Islam, M., & Chowdhury, H. A. (2007). A comparative Study of Liquidty Management of an islamic and a conventional bank: The Evidence from Bangladesh. Dhakka.

18. Ismal, R. (2010). The Management of Liquidity Risk in Islamic Banks: The case of Indonesia . United Kingdom: Durham University.
19. Kunt, D., & Huizingha. (1999). Determinants of Commercial Bank Interest Margins and Profitability. World Bank Review , 379-408.
20. Loghodi, H. A. (2006). Do Islamic banks perform Better than Conventional banks: Evidence from Gulf Council Countries.
21. Michael, W. R., & Catanach. (1997). A longitudinal disaggregation of operational risk under changing regulations: Evidence from savings and loan industry. The Academy of Management Journal , 799-830.
22. Modigliani, F., & Pogue, G. A. (1974). An Introduction to risk and return: Concepts and Evidences.
23. Muhammad, H., Tariq, M., Tahir, A., & Momeneen, W. (2009). Comparative Performance study of conventional and Islamic Banking in Pakistan. Islamabad, Pakistan: FAST School of Business National University of Computer & Emerging Sciences.
24. Muhammad, J., & Manarvi, I. (2011). Performance comparison of Islamic and conventional banks in Pakistan. Global journal of Management and Business Research , 7.
25. Rosly, S. A., & Zaini, M. A. (2008). Risk return analysis of Islamic Banks ' Investment deposits and Shareholders' fund. In S. A. Rosly, & M. A. Zaini, Managerial Finance (pp. 695-707). Emerald Group Publishing limited.
26. Sawada, M. (2010). Liquidity risk and bank portfolio management in a financial system without deposit insurance: Empirical evidence from prewar Japan. International review of Economics and finance , 392-406.
27. Yaqoobi. (2007). Shariah Finance-Questions and Answers. Islamic Finance review .

## ANNEXURE A

*Table 3.1:* List of banks included in the sample

Sr.No	Conventional Banks	Sr.No	Islamic Banks
1	The Bank of Khyber	1	Meezan bank Limited
2	Askari Bank Limited	2	Bank Islami Pakistan Limited
3	Bank Alfalah Limited	3	Al Baraka Bank Limited
4	NIB Bank Limited	4	Dubai Islamic Bank Limited
5	Sonari Bank Limited	5	Burj Bank Limited

*Table 3.2 :* Variables and their proxies

	Dependent variable	
Y1	Liquidity Risk	cash and cash equivalent to total assets
	Independent variables	
X1	Size of the bank	Logarithm of the total Assets
X2	Non-performing Loan ratio	Non-performing loans to Total advances
X3	return on equity	Net profit after tax to Total equity
X4	Capital adequacy ratio	Tier 1 capital + Tier 2 capital / Risk Weighted Assets
X5	Return on Assets	Net profit after tax to Total assets
€	Error term	