Liquidity Management, Capital Structure and Risk Hedging at Banks in Pakistan

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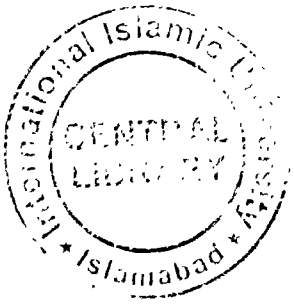
(20-SE/MS-IBF-2 /F09)



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DECLARATION

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Majid Zubair Ahmed

APPROVAL SHEET

Liquidity Management, Capital Structure and Risk Hedging at Banks in Pakistan

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Date of Viva Voce: 11-08-2015

Abstract

We exam how vigorous bank's management of liquidity risk experience by using liquidity market impact the capital structure, risk, profit, risk and lending of banks operating in Pakistan. We explore that banks that restructure their liquidity portfolio experiences by both selling and buying liquidity. It means, banks that use liquidity market than other banks for the purpose of risk management instead of their liquidity holdings carries additional capital. They also give further risky loans than other banks with respect to their total assets. Keeping size, and lending constant, banks which actively participate as compared to other banks in liquidity market have lower profits and higher risk. Our outcomes propose that if banks increase their capability to cope liquidity risk can work with more leverage and can give more risky loans. Therefore, the advantages of improvement in management of risk in banking sector can be more availability of credit, instead of minimizing the risk in the banking system.

ACKNOWLEDGMENT

First and foremost I would like to show my valuation to Allah because lacking his approvals I would not have had the endurance and skill to start such a duty and now as my research has stretch to its conclusion I would like to recognize the outer indulgence and kindness.

Foremost I like to show my appreciation to my supervisor Dr. Abdul Rashid, as without his assistance and motivation, this research and thesis could not have reached its cessation. He was the true stimulus behind me and gave me the moral strength to pursue this arduous assignment with perception and keen judgment to accomplish my project in time.

My sincere thanks also goes to Mr. Bashir, the chief librarian of State Bank Pakistan Karachi for allowing me to review commercial banks financials. I appreciate the help of record keeping department of Business Recorder for all the assistance they provided.

And lastly, I thank my family for all their support and good wishes.

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Chapter: 1

Introduction

Liquidity is the ability to meet obligations as and when due. In the words of Button (2011),

"Liquidity is the ability to meet expected and unexpected demands for cash at an acceptable cost."

In Islamic Research and Training Institute (IRTI) research paper, Ahmad (2001) narrated one of the comprehensive definition of liquidity which is as follow:

Liquidity is defined as the value of "nearness" to unrestricted power of spending in an asset. Money is completely liquid by definition. Assets other than that differ in the value of their liquidity. The more an asset is liquid, the more quickly and more easily it can be transformed into money. The second quality of liquidity is the value of liberty from the risk of variations in capital value (Pearce, David (1986), Dictionary of Modern Economics).

Banking is a business of financial intermediary whereby money is collected from depositors and provided to business and industry to meet short and long term requirements. Deposits are collected under any of the three forms of accounts including profit and loss sharing account, current account, and fixed deposits. Except profit and loss fixed account depositors are free to deposit and withdraw the amount according to their preferences and financial plans, which creates uncertainty as for cash requirements of a bank are concerned to return the money of depositors. This uncertainty of cash requirements make the job of modern banker challenging because of required skill in funds management to utilize the funds prudently keeping in view the liquidity requirements as well as to earn normal rate of return for depositors and shareholders.

In ideal situation the suitable use of liquidity requires that banks fulfill following two conditions:

(i) Over the time enough liquidity should be available to meet current demand for money by depositors

(ii) Investment a specific part of liquidity to profit-generating business.

Liquidity risk management is a challenging task for any bank including Islamic banks. Conventional banking has numerous chances to mitigate and manage liquidity risk including short term investment in instruments based on interest issued by corporate sector and government. The most secured form of short term investment is treasury bills and other money market instruments. Likewise for medium to long term investments interest based bonds are available to conventional banks with a ready market for disposal without losing much in value of the underlying security. Conventional banks have the opportunity to do investment through stock exchange in equities and earn in the form of dividend and price increase, at the same time to convert into cash as and when required. Another important source of meeting the liquidity crisis is help from central bank in rainy days by providing required hard currency for interest. Furthermore interbank balances of conventional banks are also rewarded in the form of interest by each other.

Islamic banks cannot invest in any interest bearing instrument consequently all interest bearing money and capital market instruments based on interest are eliminated as for liquidity management of Islamic banks is concerned. Job of Islamic banking practitioner has become very challenging as for liquidity is concerned. Naturally in such circumstances Islamic banks have to be very prudent while deciding the ratio of reserve and availability of funds for investments and financing. In Pakistan, central bank has directed through prudential regulations to all Islamic banks as compared to conventional banks to sustain higher cash reserves with central bank because conventional banks are allowed to maintain cash reserve in a combination of short term liquid securities and cash balance

with central bank. Islamic banks can invest in any instrument of money or capital market if and only if it is based on variable return.

Investment in equities through stock exchange is the only avenue of investment is left with Islamic banks as for liquidity management is concerned. However, as we know Islamic financial institutions are required to ensure Shari'a compliance in all of their operations. Hence, Islamic Financial Institutions (IFIs) are not free to invest in any security issued on profit and loss sharing basis. Sharia compliance of the company issuing securities with variable returns is required. Ideally a security should have two features at least to be called as Shari'a compliant. First Halal business (business of the company should not consist of an activity which is prohibited by Islamic law e.g. liquor, pork, speculation, hoarding etc.).Secondly, it should free from interest in its operations.(e.g. interest received on bank deposits, interest paid on overdrafts and loans, discounting of bills of exchange, interest paid on bonds and even on preferred stocks are all interest based transactions and contradict with Shari'a compliant financial system). If we filter the investment opportunities available at hand with these two criteria's, we will find none or a very minor number of companies meeting both criteria. Even if we found a small number of companies meeting both criteria, the issue of listing with stock exchange (which is vital for ready market to convert into cash) and low financial performance of these companies might hinder investment by IFIs. This led the Sharia experts and finance professionals to pay due consideration to underlying problem of liquidity management by IFIs and come up with solutions. Any of the solution to the problem through financial engineering is deemed fit if it is not violating basic principles of Islamic financing.

In the following sections we have explained the solutions offered as for investments of IFIs are concerned into readily convertible securities. Liquidity is generally considered as one of the primary causes of collapse of banks and other financial institutions. The circumstances when a financial organization is unable to meet its obligations result in an anarchy situation. Financial institutions

therefore, always and with full consideration, made an attempt to appropriately manage their liquidity needs and, in turn, to maximize their values. Liquidity requirements of a financial institution are likely to directly affect maturities of its assets and liabilities and eventually soundness of the institution.

Globally, there is a great focus on financial stability and soundness of financial institutions. Various research organizations and financial institutions including, among several others, the Asian Development Bank, International Monetary Fund, Basel Committee, World Bank and European Bank have compiled and attempted to measure indicators for financial soundness. In additional to this, researchers have also tried to explore the factors and consequences of inconsistencies in a financial system (see, for example, Ibrahim and Vijycumar (2004)).

Effective liquidity management, due to positive values of cash, as a strategic asset is now fully accredited by the boards of financial institutions. Thus, they have brought it to the top of the agenda at many financial organizations and other multinationals. This fact, combined with increasing challenges and opportunities in the markets, makes it worthwhile for the financial manager to re-assess the possibilities for liquidity management in all geographies where the company operates. Therefore, management of liquidity have a part in the higher risk management structure of the industry of financial services, which is a concerns for all financial organizations regardless of whether they are operating under Islamic or conventional manner. Examining issues related to management of liquidity is equally worthwhile for financial institutions, policy-makers and practitioners. Indeed, a failure to address the liquidity management issues may cause horrible results, which includes banking collapse and the flux of the overall system of finance. In fact, most bank fails due to problems in dealing with their liquidity. That is why regulators always shows great concerned with the position of liquidity of financial organizations and that's why the rational of regulators centers upon the consolidation of liquidity management structure.

Liquidity arrangements in banking sector are obligatory more than any other sector of the economy. On one hand banks are readily available to give cash to their customers on demand through their account and to provide loans. On the other hand, banks also provide liquidity by lines of credit to their borrowers (Kashyap et al. (2002)). Due to these primary responsibilities of both solvency and liquidity, banks have always great concerned. Conventionally, as a buffer against insolvency, banks keep capital. However, they keep liquid assets –securities and cash – to execute sudden withdrawals by customers or to guard themselves against unanticipated drawdowns by borrowers (Seidenberg and Strahan (1999). Accordingly to Modigliani and Miller (1958), organizations largely must not waste means in handling risks as investors can do so more competently by keeping a well-diversified portfolio.

However, this does not imply on banks (intermediaries) and other financial institutions. The friction of market of finance such as contrary selection and moral hazard difficulties involve banks to invest in private information that alters bank loans illiquid (Diamond (1984)). These loans are expensive to trade as these are illiquid loans. The bank disaster itself is expensive as these loans include privately gathered information. There are many ways by which banks can circumvent these disaster. These means generally include keeping sufficient size capital buffer, keeping sufficient assets which are liquid, and involve aggressively in management of risk practices. Several researchers present theoretical models explaining how such resistances can harm non-financial investment of firm as well as lending and bank's decisions of taking risk (see, for examples, Froot et al. (1993) and Stein and Froot (1998)). As per such models, managing of risk vigorously can allow banks to do investment more aggressively in illiquid and risky loans and keep less capital.

On empirical side, there is also a significant research on strategies of how risk management of banks affecting lending decisions and how capital structure decisions of banks affect banks' values (Cebenoyan and Strahan (2004), Stein and Froot (1998) and, Brewer et al. (2000)). However, most

of the studies have focused on developed countries with a little focus on developing or emerging economies. However, market resistances such as adverse sections and moral hazard are more likely to exist in developing countries as their rules and regulations are not up to those standards which are required to mitigate the intensity of such frictions. Therefore, the risk management effects on banks' investment decisions and capital structure would be more profound in developing countries.

1.1 Background of the Thesis

Liquidity management in banks have also been the growing concern in all financial organizations. There is too many literature on asset purchase and sale of bank and these have been done in developed countries like USA. Yet liquidity management through liquidity purchase and sale and its impact on capital structure have been discussed rarely for Pakistani banks. Banks have always been catering the risk of managing liquidity. Although there is a great temptation of earning profit by holding less liquidity but on the other hand there is a great risk of not full filling its obligation by means of liquidity.

Especially with the development of Islamic Banks in Pakistan there is a greater need to analyze how banking system in Pakistan are managing their liquidity with the help of liquidity market and what is the impact on their capital structure and operations of banks.

The empirical results on this matter regarding Pakistani banks though is scanty. Yet studying this issue will help us enriching our knowledge as liquidity market in Pakistan has more friction. We examined how liquidity market is impacting capital structure and banking operations in Pakistan to bridge this gap of study. We used different indicators (capital, size, tangibility, profitability and volatility of profit to find the results. Three indicators profitability, liquidity and solvency goes parallel and contest each other. The current literature for financial organizations specifies that active risk management through both markets internal and external give means to manage cash flow and

liquidity and achieve more investment. We have taken liquidity sales market as one device which banks use to manage their risk, capital structure objectives and lending. Now a days there is a great focus as how banks are using liquidity market.

1.2. Objectives of the Study

Objectives of this study are as follows;

- To examine how bank lending decisions and capital structure are affected by access to the liquidity sales market.
- To examine whether substantial benefits is experience by the banks that are better able to manage liquidity risks in the liquidity sales market.
- To investigate whether lower bank-specific risk is led by liquidity sales activity.

1.3. Significance of the Study

The key purpose of the study is how capital structure, profit and lending is affected by actively management of liquidity risk of bank through the liquidity market. The banks give funds to the businesses and are not only the economy wealth store houses. As banks have diverse operations it can have exposure of liquidity risk as these financial organizations have to provide funds to the depositors on demand or to liquefy their asset to fulfill their commitments. Our aim in this study is to measure elements level of the organization which can have a meaningful effect on risk of liquidity in Pakistani banks by balancing liabilities and assets. We also try analyze the risk of liquidity with the intension to gauge management of liquidity risk and its effects on capital structure. From this research the management and all the other financial heads can easily checkout and monitor the effect on capital structure, and lay out the future

plans regarding the betterment and make more profitability for the any organization. They can easily judge the risk and liquidity so that organization can have leverage and margins on the both ends, either on customer side or the organizational point of view.

1.4. Structure of the Thesis

The structure of the thesis is as follows. The next chapter presents the literature review. Chapter 3 discusses the data and methodology. Chapter 4 presents the empirical results. Finally, Chapter 5 concludes the study.

Chapter: 2

Literature Review

Risk management is not only important in financial firms but it also equally important in non-financial firms. Indeed, several empirical studies have examined management of risk for non-financial and financial firms. For instance, for a sample of large US non-financial organizations, Allayannis and Weston (2001) study the use of foreign currency derivatives of foreign currency. They observe that the use of foreign currency derivatives is directly related with the value of a firm. This implies those firms that use foreign currency derivatives have high value than the firms that do not do so. Based on their empirical results, they suggest that firm value increases by hedging firm.

Schrand and Minton (1999) examine how variations in cash flow affect cash flows of firms using a sample of non-financial firms in thirty seven industries. According to them shortfalls of internal cash flow is significantly led by the volatility of cash flow, which ultimately results into forgone investments and greater costs of capital. Firms that are successful in minimizing volatility of cash flow are likely to invest more relatively.

Strahan and Cebenoyan paper in 2004 have analyze US banks data based on loan sale and purchase from 1988 to 1993. They found that holding size, leverage and lending activities constant, banks active in loans sales market have lower risk and higher profit. Their paper is based on loan sale and purchase of US banks and does not give analysis liquidity sale purchase of banks. We have written our paper based on liquidity sale purchase of Pakistani Banks.

Below we present the literature review on loan sales, risk management, liquidity risk management, risk management of Islamic banks and on capital structure separately.

2.1 Literature Review on Loan Sales by Banks.

Benveniste and Berger (1987) using a fairly large sample of banks, examine the determinants of loan sales. They find that regulatory costs have an important role to play in determining loan sales. They also examine the involvement in securitization of regulation for the capital of banks. Risk taking becomes more profitable as securitization permits banks to concentrate risk on their balance. It also allows shadow banks for financial intermediation that solely depend on externally financing securitization.

When per unit investment equity requirement stay similar for all plans of securitization extreme risk taking can be prevented by state regulations. Desires of effective capital shelters shadow as well as traditional banks. Also such desires can effect investment inclination which cannot be control by securitization. Extreme risk taking takes in shadow banking place if they stay out of regulation and can take major share of traditional banking. The difficulty of low investment can be lessen by shadow banking. Also shadow banking can cause over investment. The crowding out and overinvestment can be avoided by limiting securitization actions.

The regulator has to consider and observe risky activities due to the influence of shadow banking and securitization. When requirements of capital is not dependable on decisions of financing of organizations of financial concern, governing arbitrage can be circumvented.

The problem of underinvestment cannot be diminish under optimal capital regulation by securitization as with securitization the cost of capital will not be permitted to fall. This regulation can only efficiently avoid taking of risk also when shadow banks are involves.

However, some other studies such as Samolyk (1995) find loan sales as a utility of funding costs and risks. Specifically, Samolyk (1995) examines bank asset sales in which information irregularities make the incentive for unregulated banks to create and sell loans to other banks, rather than to create deposit liabilities. Private statistics suggests that bankers can deposit local loans only to the range that their capital can take possible losses. Loan sales are effectually a means of engaging nonlocal bank capital to sustenance local investments.

Pennacchi (1988) considers a model where banks may increase the yields on loans by observing borrowers. Competitive deposit, bank rules and equity financing, can provide banks a reason to sell loans, but the degree of their loan selling is controlled by a moral-hazard problem. This paper revealed that banks confronted with substantial struggle for deposit financing, as well as regulatory limitations in the form of compulsory capital and/or reserves, cannot yield by simply stock money-market assets but must deliver other services, such as information collection and observing activities related to making loans.

Furthermore, other studies highlight the significant association between the internal capital markets and bank lending. For instance, Houston et al. (1997) finds that lending at banks owned by multi-bank bank holding companies (BHCs) is less with respect to changes in cash flow and capital.

Houston et al. (1997) examine the issue that the degree of bearing of financing external expenses in banking sector in the situation when banks are giving fresh advances essentially effect requirements of capital, capital of corporate gaining procedure and usefulness of policy of monetary concern. They examine the matter by inspecting the holding firms' flow of cash sensitivity of loan at bank, and

inspecting degree of which capital to several of their companies is given by market of an internal capital form by holding firms. According to them, generally sensitivity is extra at bank subsidiaries with increase in advances to position of capital and flow of cash as compared to capital and flow of cash which bank own itself. They also found that increase of bank advances has inverse relationship with advances increase between holding firm's other subsidiaries. They conclude that market of internal capital is formed by holding firms of bank for apportion of rare funds between bank's own several subsidiaries.

Williamson (2014) constructs a model where there are inducement difficulties in the mortgage market banks can false the worth of mortgage debt, and customers can false the worth of housing which is giving as security. He finds that these inducement difficulties pooled with a scarceness of collateralizable means, suggest that orthodox monetary policy facilitation can worsen credit market resistances by narrowing inducement restrictions. Possibly unexpectedly, when inducement restrictions bounds banks and consumers, a zero nominal interest rate is ideal because at the zero lower bound the actual interest rate is too small. He finds that central bank acquisitions of mortgage debt may not be viable, because of private banks 'inducements to falsify the mortgages they present to the central bank. Even if central bank acquisitions are viable, such plans will be neutralized if the central bank does not purchase all mortgage debt, or the inducement restraints of customers bind.

This research does not report a main issue related to private asset acquisitions by the central bank. Overall, such acquisitions will favor some credit market members compare to others. If central bank purchased private assets, there must be some choices must about which assets to purchase, and which not to purchase. If the purchase plans work as desired, this must have effect of re-distribution, and there are significant questions that must to be answered with respect to political situation and independence working of central bank.

2.2 Literature Review on Risk Management.

Ratti (1980) finds that changes in environment can be an origin of positive and inverse returns effects which can lead to taking of risk more or less. In his paper, he shows a study of meeting questionability of bank aversion of quasi risk pertaining to flow of demand deposit and risk of to be on advances. Bank hypotheses of assessable approach towards performance of the table related of aversion of risk for banks of commercial nature are formed. By using the statistics of associate banks of District of Federal Reserve, the test suggested that there is a strong tendency in banks for risk aversion and the table of related aversion of risk is growing in earnings. Also tests propose that whether the environmental condition is in favor or is not in favor, the variation will create earning resulting in consistently fever or more taking of risk accordingly.

Kim and Santomero (1988) show that a bank's bankruptcy risk cannot be the frontline with capital ratios. Significantly, they scrutinize the factor of regulation of capital in supervising of risk. According to them, inadequately valued protected deposit is one of the reason for the selection of greater risk portfolio by banks. This unfairness towards risk is one of the manner by which parameter capital of bank is equalize. They use mean and variance they conclude that risk of insolvency cannot be assure by using ratio of capital.

Clementi (2001) highlights the returning difficulty of liquidity and also some examination of different developments, primarily in risk transfer method. He emphasizes that innovation must be handled carefully, and finds risk management as significant objective of financial system. The drifts is summarize by him and according to him there is a great concern of liquidity and showed some analysis on risk shift method. He is of the view management of risk is the main concern in financial organization.

Acharya et al. (2013) argue that a firm's aggregate risk is a important factor of whether it accomplishes its upcoming liquidity requirements through cash funds or bank credit. Banks generate liquidity for

organizations by merging their characteristic risks. As a consequence, organizations with greater aggregate risk find it expensive to obtain credit from banks and choose for cash reserves in spite of greater opportunity costs and liquidity premium. They check hypothesis empirically by presenting that organizations having high asset beta have a higher ratio of cash reserves to credit, monitoring for other determinants of liquidity policy. This influence of asset beta on liquidity management is vital economically. When aggregate volatility is high, banks unprotected to undrawn credit become unsafe; bank credit shows less initiations, greater spreads, and small maturity; and, firms' cash reserves increase.

2.3 Literature Review on Liquidity Risk Management

Gabbi (2004) concentrates on liquidity risk and the data was gathered from strict area of the green, yellow and red zone. He finds that liquidity risk can be improved through cash flow managing, stock and bond collection in specific modules and through the controlling of short term financial items economies of scale can be accomplished. Also liquidity risk can be controlled better by large banks with the scale and possibility of financial measures, capable both to accomplish more market information and to impact monetary policy functions.

Zheng (2006) establishes that short-term yield spreads can be a cause of liquidity risk. In this paper he discusses the relationship of default risk and liquidity risk on assessing financial deals. He demonstrates that two risks are almost unclear if the original contract has non-negative values; nevertheless, these two risks need different risk premiums depending on their loss rates and spreading if it can take both positive and negative values. He claims a structural default model and a discrete time default model with exponentially scattered liquidity blows. He reveals that short-term return

spreads are measured by liquidity risk rather than credit risk. He also proposes a two-stage process to regulate the model with one scalar optimization difficulty and one linear programming difficulty.

Dinger (2009) proposes that due to the existence of multinational banks collective liquidity deficiency risk has been reduced, as in normal situations they hold low liquidity assets but in crises they hold higher liquid assets as compared to single market banks. Usual empirical study demonstrates that foreign-owned banks play a balance role in developing economies' banking systems. Circumstantial proof recommends that this steadying role can be credited to multinational banks' access to more extended bases of liquidity. However, there is no experimental sign so far on multinational banks' performance of liquidity and its impact on collective banking system. This paper objectives is closing this gap. First, it observe at the liquid assets holdings of multinational banks and demonstrates that in "normal" times they are importantly lesser but in difficult times bigger than those of single-market banks. Then it finds indication that multinational banks' existence considerably declines the risk of aggregate liquidity deficiencies in emerging economies.

Vaihekoskia (2009) shows that stocks of high rate of yield were adversely linked to the value of liquidity risk in the period of organized liquidity risk. Thus, orderly liquidity risk is calculated as market-wide regular risk as it is adequate to defeat all liquidity connected risks.

Uddin (2009) finds that profit is not affected by the oscillations in the relative stock liquidity. He also finds adverse link between the yield of a stock and its liquidity recommends that the illiquid stocks carried more risk than liquid stocks. Thus, the researcher incline to take in the stock liquidity as a variable in asset valuing models, where the stock and market liquidities are typically reflected as self-governing. The purpose of this paper is to reconsider the association between the yield of a stock and its liquidity by using a comparative measure that connects the individual stock liquidity with market-wide liquidity. Multivariate regressions are engaged to observe the outcome of comparative market liquidity on the stock yield while governing the outcome of other factors. Adverse affiliation among

the stock return and liquidity is established, but the association is not linear. It is establish that the comparative measure of liquidity is not a substitute, but supplement to other liquidity measures used in previous studies. It is also establish that variation in relative stock liquidity does not completely affect the yield.

Sawada (2010) examines that in the times of liquidity shock persuaded by the depositors, banks sell their securities instead of liquidating their loans. Using data from prewar Japan, this paper examines the effect of a liquidity shock prompted by depositors' conduct on bank portfolio management through financial disasters in a system deficient deposit insurance. It is establish that banks responded to the liquidity tremor considerately through a growth in their cash holdings not by settling bank loans but by retailing securities in the financial market. Furthermore, banks uncovered to local financial pollution accustomed the liquidity of their portfolio largely by aggressively selling and buying their securities in the financial market. Lastly, there is no proof to determine that the presence of the lender of last resort lessened the liquidity limitations in bank portfolio adjustments.

Ojo (2010) emphasizes on the importance of capital adequacy. He also observes that beside significant progress, more work is yet to be done specifically related to liquidity risk. This paper finds improvements from the commencement of the 1988 Basel Capital Accord to its form of Basel II. In underlining the weaknesses of the 1988 Accord, an evaluation is made of the Basel Committee's efforts to address such flaws through Basel II. Whilst significant development has been attained, the paper accomplishes, built on one of the main purposes of these Accords, specifically the management of risk, that further exertion is still required mainly in hedging funds and those risks indorsed to non-bank financial institutions. This paper also pinpoints prevailing problems with Basel II with respect to capital measurement problems which were exposed in the outcome of the Northern Rock disaster.

Almeida et al. (2013) find that if an organization has enough liquidity to finance high value ventures that will happen in the future is at the heart of the exercise of financial management. They claim that

various key issues in liquidity management can be understand through the background in which organizations face financial limitations and desire to ensure capable investment in the coming time. They use their model to study many of the empirical results on liquidity management.

Much of the volatility in the amount of liquidity can be clarified by the safety demand for liquidity. Other substitutes to cash holdings are hedging or lines of credit but cash is above all. It is still the most important way in which organizations confirm future liquidity for upcoming investments. They argue about the theories on the option of liquidity measures and connected empirical proof.

In addition, they argue agency-based concepts of liquidity, the actual effects of liquidity option, and the influence of the 2008-9 Financial Crunch on organizations' liquidity management

2.4 Literature Review on Risk Management of Islamic Banking

Ghannadian and Goswami (2004) find that in all developing economies investing funds on basis of profits and losses is an attractive choice for the banks. Metwally (1997) finds that Islamic banks depend intensely on their equity while financing loans, face extra complication and are very conservative in utilizing their loan-able resources as compare to conventional banks. Anas and Mounira (2008) suggests that Islamic banks should increase their risk management practices by improving their secondary market for this they need price transparency and liquidity. They can also do risk hedging by trading Sukuks and use Financial Takaful (insurance). Simlarly, Ismal (2010) shows that Indonesian Islamic banks are assessing themselves on the basis of banks liquidity management policy, liability side and asset side. Ismal (2010) also suggests that in order to improve their liquidity management all Islamic banks should improve in terms of balance liability and asset,

converse their operations and principles to public to extend their understanding towards Islamic banks and reform management of liquidity on asset and liability side.

Ahmed et al (2011) examine the Islamic banks of Pakistan for the time period of 2006 to 2009. They take a sample of 6 Islamic banks and data was collected through secondary sources. The relationship between variables is examined by using Pearson correlation and OLS regression. They show that the size of bank is directly proportional with credit and liquidity risk and negatively proportional to operational risk. The relationship between size of bank and operational risk are statistically inappropriate. The asset management has a positive relationship with liquidity and operational risk. The gearing ratio and Non-Performing Loans ratio are negatively associated with liquidity and operational risk and are also significantly associated. These ratio are directly linked with credit risk. They also finds that capital adequacy has positive relationship with liquidity risk. It also has a negative and significant association with credit and operational risk.

2.5 Literature Review on Capital Structure

Capital structure have been examined by financial economist from diverse perspective and in diverse background around the globe. A brief review of the literature is presented below.

Christopher et al. (2006) find that organizations earns more profit by using financing of short-term debt than the organizations consuming long-term debts. This opinion inclines to support commercial banks' funds usage and sources. Luckett (1984) finds that banks uses demand deposit as these falls in short term sources of funds and by various means lend these funds to earn massive profit.

Mesquita and Lara (2003) are of the view that management of the firms face more difficulty in deciding between the usage of equity and debt when the business has been carried out in an unsteady

surroundings and mostly in Brazil this kind of problem arises. They conclude that in the short-run there debt and profitability are negatively related to each other. While analyzing firms of ten developing countries, Booth et al. (2001) finds that similar variables are related in decision making for capital structure throughout the countries considered regardless of diverse growth stages and institutions structures. Although, there are some country traditions that make differences in the consequences of the firms structure decisions. According to them many things are to be done domestically as they are diverse because of state and structure issues which are inflation and growth and others. Raheman et al. (2007) finds that long-term debts are negatively related to profitability but equity and profit are positively related to each other. They find this by analyzing 94 firms (non-financial) listed in ISE during the 1999-2004 using regression analysis and Pearson's correlation coefficient on an OLS pooled model.

Uremadu and Efobi (2008) study the relationship between corporate profit and capital structure by using data over the period 2002-2006 of 10 manufacturing concern companies in Nigeria on a pooled time series data by using OLS regression and Pearson's correlation coefficient. They find that return on capital employed and long-term debt to equity capital are positively related to each other and the impact of long-term debt to equity capital on return on capital employed is also considerable. The above studies not only give us concrete background but also provide us knowledge about profitability and capital structure globally.

The methodology is develop for empirical research in this paper by taking a note from above researches performed in diverse countries around the world.

Chapter: 3

Data and Methodology

3.1 Data and Samples

In banking compartmentalized decision making should not take place. Actions should not be taken in isolation that affect portfolio risks, investment decisions and capital structure. It normally happens that only one trading decision or action has an effect on all of the above. Liquidity investment decision of a bank also affects risk-based firm risk and capital requirements. For this study, data are obtained from the financial statements of banks, banks treasury, and monetary section of SBP, NIBAF, and Sukuk market.

Our sample includes the following twenty-five Islamic and conventional banks.

Conventional Banks

- National Bank of Pakistan
- Allied Bank Ltd
- Habib Bank Ltd
- MCB Bank Ltd
- United Bank Ltd
- Askari Bank Ltd
- Bank Alfalah Ltd
- JS Bank Ltd
- HSBC Bank Ltd
- Bank Al-Habib Ltd
- Barclay Bank
- Citi Bank
- Faisal Bank Ltd

Islamic Banks

Bank Islami Pakistan Ltd

Dubai Islamic Bank Ltd

Meezan Bank Ltd

Al-Baraka Islamic Bank Ltd

Burj Bank Ltd

- Habib Metropolitan Bank
- KASB Bank Ltd.
- NIB Bank Ltd
- Samba Bank Ltd
- Silk Bank Ltd
- Soneri Bank Ltd
- Standard Chartered Bank Ltd

The study covers the period from 2008 to 2013. Annual data on the sale and purchase and other variables are collected from financial statements of banks.

As indicated earlier, the purpose is to examine how liquidity risk active management, as proxies by liquidity purchases and sales affects risk, lending, capital structure and profit of a financial institutions. Our dependent variables are defined as follows:

Capital and liquidity variables

Capital/Risky assets =Book value of equity/(Total assets–Cash – Securities)

Liquidity ratio= (Cash + Securities)/Total assets

Lending variables

Commercial and industrial loans/Total assets

Commercial real estate loans/Total assets

Risk variables

Time-series standard deviation of each banks' quarterly ROE (Earnings/Book value of equity)

Time-series standard deviation of each banks' quarterly ROA (Earnings/Assets)

Time-series standard deviation of each banks' quarterly Loan loss provisions/Total loans

Time-series standard deviation of each banks' quarterly Cash/deposit ratio

3.2 Empirical Models

In order to examine how sell and buy liquidity affects risk management at banks, we estimate several specification. Specifically, to study how equity buys and sells indicators and bank-specific variables impact on a capital-to-total assets ratio of a bank, referring Strahan and Cebenoyan paper Risk management, Capital structure and lending at banks published in 2004, we estimate the following model:

Model 1

$$\left(\frac{Cap}{Total\ Assets}\right)_{it} = \beta_1 + \beta_2(sell\ liquidity)_{it} + \beta_3(buy\ liquidity)_{it} + \beta_4(buy - sell\ liquidity)_{it} + \beta_5(bank\ size)_{it} + \beta_6(tangibility)_{it} + \beta_7(profitability)_{it} + \mu_{it}$$

where $\left(\frac{\text{Cap}}{\text{Total Assets}}\right)_{it}$ is the capital-to-Total assets and defined as above, $(\text{sell liquidity})_{it}$ is an equity sales indicator and takes a value one in time t if the bank sells liquidity in time t, and zero otherwise. Likewise, $(\text{buy liquidity})_{it}$ is liquidity purchase indicator and it takes value one in time t if the bank buys liquidity in time t, and it takes value zero otherwise. $(\text{buy} - \text{sell liquidity})_{it}$is the difference between liquidity purchased and liquidity sold amounts in time t. $(\text{bank size})_{it}$ is defines as the log of total deposit of a bank in time t. Bank tangibility,$(\text{tangibility})_{it}$, is defined as the ratio of a bank's total tangible assets to its total assets. Bank profitability,$(\text{profitability})_{it}$, is defined as the ratio of a bank's net profit divided by total assets of the bank. Finally, the term μ_{it} in the above model represents error term. While estimating the impact of liquidity sales and purchases of risk management we also includes indicators for Islamic and conventional banks to examine the differential effects of liquidity management on risk management across Islamic and conventional banks.

We also estimate the following four models to examine the impact of liquidity sales and purchases on liquidity ratio (liquidity management at banks), total loans-to-total assets (capital structure of banks), return on equity (ROE) (profitability of banks), and volatility of ROE (bank-specific risk).

Model 2

Model 3

Model 4

Model 5

The variables included in these four models are defined as above in Model 1. Further, in these models we also include indicators for Islamic and conventional banks. All empirical estimation is done using annual data for the period 2008-2013

In Model 5, we use different proxies for bank-specific risk while examining how liquidity sales and purchases affect the risk that banks face in their operation. Volatility of profit will be calculated by

taken standard deviation of quarterly profits of banks. We use Ordinary Least Squares (OLS) estimator to estimate the model using pooled data. For reliable statistical inference, we estimate heteroscedasticity-consistent standard errors using the method proposed by White (1980).

To take the outcome of markets of internal capital (Houston et al., (1997), Morgan and Jayaratne, (2000), Strahan and Demsetz, (1997)), we take in as variables of regressors indicator for banks. Also for capturing the effect of firm size which is based on the bank's total deposits we create indicators.

In reply to comparatively weak (strong) liquidity demand conditions banks may buy (sell) liquidity. Likewise, unusually liquidity purchase activity may induce by strong funding conditions, while liquidity sales may induce by usually weak funding conditions. To show a bank's activities in the liquidity market we make three indicator variables following Demsetz (2000). These are, whether bank only buys liquidity, whether banks only sells liquidity, or whether bank buys and sells liquidity. Omitted category in the regressions are those banks which do not contribute at all. The focus is on particular banks (banks that are using liquidity market for both buy and sell liquidity), since the conditions of demand and funding are not probably be effecting the results of these Pakistani banks. Our expectation is, banks that are involve actively in management of risk will be able to safeguard their capital and to do their operation with less liquid assets, and simultaneously they are able to do more risky lending without increase in risk credit. For the full sample in the models, Table 1 present the statistics of the all variables.

Chapter 4

Empirical Results

In this chapter, we present the empirical results. In particular, we first give summary statistics of the variables included in the analysis. Next, we present the regression results for the impact of liquidity sales and purchase on banks' capital structure, risk management and profitability.

4.1 Summary Statistics

We start our empirical analysis by presenting summary statistics. Next, we present the regression results for the impact of liquidity purchase and sales on Capital, Liquidity Ratio, Total Loans, Profit, and Volatility of Profit. Finally, we present some discussion on the impact of liquidity sales and purchases on bank operation. Descriptive statistics are given in Table 4.1. Specifically, mean and standard deviation values are given in the table.

The statistics indicate that banks, on average, have debt 11.7% of total assets. The standard deviation of debt to total asset ratio is 34.1%. This implies that although, on average, banks have debt about 12% of total assets in their capital structure, this ratio varies across different banks. D-sell is an indicator variable that takes value 1 for a bank if the bank does not sale liquidity in year t and zero if the bank does not purchase of liquidity. The mean value of D-sell variable suggests that about 47% of total bank year observations are classified as not selling of liquidity, while about 53% observations are categorized as net purchasing of liquidity. Both indicator variables have almost identical standard

deviation, which implies that both of the variables are dispersed at the similar extent. The variable buying-selling is defined as the difference between the buying amount of liquidity and selling amount of liquidity. The mean value of this difference is -0.016, which implies that on average, the banks included in the sample do more selling than buying of liquidity. Thus, the banks included in the sample are not seller of liquidity during the examined period. The mean value of profitability is 0.002, while the standard deviation of profitability is 0.025. The profitability ratio indicates that banks operating in Pakistan are less profitable. This is because our sample ranges 2008-2013, which includes financial crises period.

The mean and standard deviation of tangibility are 0.020 and 0.034, respectively. This indicates that on average, banks keep 2% of total assets as tangible assets. However, this ratio across banks as suggested by the standard deviation of the tangibility ratio. The mean of liquidity ratio is 2.3%, while standard deviation value is 0.011. Low standard deviation of liquidity ratio indicates that banks liquidity position does not vary too much across time as well as across banks during the period under study.

We can observe from the table that the mean value of risky assets to total asset ratio is about 11.4% of their total assets. The standard deviation of risky assets is 9%. The mean value of total loans to total assets ratio is 45.7% indicating that banks, on average, issue about 46% of the total assets as loans. The mean and standard deviation of profit volatility are 0.002 and 0.008 respectively. These statistics provide some preliminary information regarding the variables that are included in our study to examine the impact of liquidity buy and sales on bank's capital structure, profitability and riskiness.

Table 4.1 Summary statistics

Variables	Mean	Std.Dev.
Capital	0.117	0.341
D_selling	0.470	0.499
D_purchasing	0.529	0.499
Puchasing-Selling	-0.016	0.069
Profit	0.002	0.025
Tangibility	0.020	0.034
Liquidity Ratio	0.023	0.011
Risky Asset	0.114	0.090
Total loans	0.457	0.559
Volatility profit	0.002	0.008

4.2 Liquidity Sale and Purchase and Banks' Capital structure.

We first examine the impact of liquidity buy and liquidity sell on capital structure decisions of banks. The results are given in Table 4.2. The results indicate that those banks which are involve in selling and buying of liquidity have, on average, higher debt to asset ratio. Specifically, we find that the co-efficient of both buy liquidity and sell liquidity indicators are positive and statically significant. This implies that banks' use of debt is positively related to buying and selling of liquidity. The results are also in line with the previous study of Weill, Seidler and Horvath (2012).

Table 4.2 Results for the impact of liquidity sale and purchase on banks' capital structure.

Independent variables	Coefficient and standard errors
D_selling	0.0651***
	(0.0111)
D_purchase	0.0642***
	(0.0104)
Purchase-sell	-0.142
	(0.100)
Profit	-2.699***
	(0.462)
Tangible asset	2.441***
	(0.375)
Bank size	-0.0138
	(0.0130)
Observations	541
R-squared	0.519

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results given in Table 4.2 also suggest that banks that do more purchasing of liquidity as compared to selling of liquidity have on average less debt in their capital structure. However, the coefficient of the buying minus selling liquidity variable appears statistically insignificant.

The result also indicate that profitability and tangibility both are significantly related to capital structure of banks. In particular we find that the profitability of banks has a negative impact on debt to asset ratio while tangibility has a positive impact on capital structure decisions of banks. The significant negative impact of profitability of capital structure are similar with the studies of Chisti, Ali and Sangmi (2013).

Specifically, the estimated coefficient of profitability suggests that if profit of banks increases by one percent of total asset, the debt of asset ratio decreases by 2.7%. This implies that more profitable banks decline the use of debt in their capital structure. The negative impact of profitability on the use of debt is consistent with the pecking order theory of capital structure which also postulates a negative link between profitability and leverage.

The estimated coefficient of tangibility indicates that a one percent increase in tangible assets to total asset ratio leads to increase debt to total asset ratio by about 2.4 %. This implies that banks with more tangible assets are likely to use more debt in their capital structure. The positive impact of tangibility on debt to asset ratio is consistent with the trade-off theory of capital structure. The bank size is negatively related with the use of debt. However, the estimated coefficient is not statistically significant. The negative impact of bank size on debt ratio is explained as follows. The large banks enjoy more economies of scale and are likely to have more internally generated funds. Thus they use less debt in their capital structure.

4.3 Liquidity Sale and Purchase and Banks' Liquidity Ratio

After examining the impact of liquidity buy and sale on capital structure we examine the impact of liquidity buy and liquidity sell on liquidity of banks. The results are given in Table 4.3. The results indicate that liquidity buy and liquidity sell activities have a significant impact on banks' liquidity positions. Specifically, we find that the co-efficient of both buy liquidity and sell liquidity indicators are positive and statically significant.

Table 4.3 Results for the impact of liquidity sale and purchase on banks' Liquidity Ratio

Independent variables	Coefficient and standard errors
D_selling	0.024*** (0.001)
D_purchase	0.0238*** (0.0009)
Purchase-sell	0.0007 (0.009)
Profit	0.007 (0.044)
Tangible asset	0.054 (0.035)
Bank size	-0.002 (0.001)
Observations	541
R-squared	0.804

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It is also interesting to note that the difference between both estimated coefficients is minor, suggesting that those bank's which are involve in liquidity buying and selling activities have similar affects, regardless they are not purchaser or not seller. The positive sign of the estimates also suggest that liquidity position of bank are positively with buying and selling of liquidity. The study of

Kowalik (2013) also supported the result which implies that banks used interbank market to cover the shortage of liquidity. This implies that liquidity ratio is positively related to buying and selling of liquidity.

The results given in Table 4.3 also suggest that banks that do more purchase of liquidity as compared to sale of liquidity have on average less value of liquidity ratio. However, the coefficient of the buying minus selling liquidity variable appears statistically insignificant.

The result also indicate that profitability, tangibility and bank size are statistically insignificantly related to liquidity ratio of banks. In particular we find that the profitability and tangibility of banks has a positive impact on liquidity ratio while bank size has a negative impact on liquidity ratio of banks.

Specifically, the estimated coefficient of profitability suggest that if profit of banks increases by one percent of total asset, the liquidity ratio will increase by 0.007%. This implies that more profitable banks are inclined to have more liquidity ratio but the impact is not great. The positive impact suggest that banks should have more cash to deposit ratio but not with greater amount in consideration to increase the profitability.

The estimated coefficient of tangibility indicate that a one percent increase in tangible assets to total asset ratio leads to increase liquidity ratio by about 0.05 %. This implies that banks with more tangible assets are likely to have more tangible assets. The positive impact of tangibility on liquidity ratio is consistent with the liquidity preference theory.

4.4 Liquidity Sale and Purchase and Banks' Total loans

The study also aims to examine the impact of liquidity buy and sell on banks' loan issue ability. For this, we run total loans to total asset ratio on liquidity buy and liquidity sell indicators. We also include the net amount of liquidity buy as independent variable in the model to examine these marginal impact of liquidity buy and sell on bank's ability to issue loans. Several other bank specific variables are also included in the regression to control bank specific effects.

Table 4.4 Results for the impact of liquidity sale and purchase on banks' Total loans

Independent variables	Coefficient and standard errors
D_selling	0.063***
	(0.022)
D_purchase	0.147***
	(0.021)
Purchase-sell	-0.904***
	(0.204)
Profit	1.122
	(0.936)
Tangible asset	2.869***
	(0.762)
Bank size	0.311***
	(0.026)
Observations	541
R-squared	0.876

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4.4 represent the results of the impact of liquidity buy and liquidity sell on total loans of banks. The results indicate that those banks which are involve in buying of liquidity have, on average, higher total loans to total asset ratio as compared to the banks which are involve in selling liquidity.

Specifically, we find that the coefficient of both buy liquidity and sell liquidity indicators are positive and statically significant. This implies that bank's total loans to total assets is positively related to buying and selling of liquidity.

However the estimated coefficient of purchasing indicator is higher than the liquidity selling indicator. This suggest that banks that purchase liquidity have higher loans to total asset ratio. This implies that if banks give more loans they are likely to involve more in purchasing of liquidity. A possible explanation for this finding is that they give more loans and they purchase liquidity to manage their customers' payment.

When we turn to examine the marginal impact of liquidity purchase and sale on loans to total assets ratio we find that the estimated coefficient of the variable purchasing minus selling is negative and appears statistically significant. This indicates that as the banks do more net purchasing of liquidity they reduce their loans to total assets ratio. This finding is in line with the argument that banks try to meet their obligations from their own resources instead of accessing liquidity market to avoid cost of purchasing liquidity.

The results reported in Table 4.4 also indicate that other bank-specific variables are significantly related to total loans to assets ratio. Specifically, we find that the estimated coefficient of tangibility is positive and statistically significant. In particular, the estimated coefficient suggests that banks increase their loans to assets ratio by 2.87% when the ratio of fixed assets to total assets increases by one percent. This implies that banks with more fixed assets are more likely to issue loans as percentage of their total assets. This findings is in line with the view that banks having more tangible assets are less risky and thus they issue more loans as a percentage of their total assets.

The results given in the table also reveal that large banks are more likely to issue loans as a percentage of their total assets. Specifically, we find that the estimated coefficient of bank size variable is positive

and statistically significant. This findings is consistent with the previous existing empirical studies. The positive impact of bank size on loans to assets ratio can be justified as follows. Larger banks are better in managing their liquidity and risk associated with loan portfolios and thus they issue more loans as a percentage of their total assets.

The significant positive impact of loans on bank size and on tangibility are similar with the studies of Beltratti and Stulz (2009) and Jackowicz et.al (2014). The results also suggest that profitability of banks is positively related with loans to total asserts. However, this positive impact of profitability is not statistically significant. The positive association between profitability and loans to assets ratio implies that more profitable banks issue more loans.

4.5 Liquidity Sale and Purchase and Banks' Profitability

In Table 4.5, we present the results of impact of liquidity buy and liquidity sell on profitability of banks. The results indicate that those banks which are involve in selling and buying of liquidity have, on average, lower profitability. Specifically, we find that the co-efficient of both buy liquidity and sell liquidity indicators are negative and statically significant. This implies that the bank's profitability is negatively related to buying and selling of liquidity.

Table 4.5 Results for the impact of liquidity sale and purchase on banks' profits

Independent variables	Coefficient and standard errors
D_selling	-0.009***
	(0.000)
D_purchase	-0.008***
	(0.000)
Purchase-sell	-0.0101
	(0.009)
Tangible asset	-0.124***
	(0.034)
Bank size	0.018***
	(0.000)
Observations	541
R-squared	0.712

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

However the estimated coefficient of purchasing indicator is higher than the liquidity selling indicator. This suggest the banks those purchase liquidity have lesser impact on profitability. This implies that those banks which are involve in purchasing of liquidity have lesser negative impact on profit than the banks which are involve in selling of liquidity. A possible explanation for this finding is that banks manage their customers payments by using liquidity market and profit of banks are mainly dependent on loans of banks.

The results reported in Table 4.5 also indicate that other bank-specific variables are significantly related to profitability of banks. Specifically, we find that the estimated coefficient of tangibility is negatively related and statistically significant. In particular, the estimated coefficient suggests that banks decrease in profit of banks by 0.124% when the ratio of fixed assets to total assets increases by one percent. This implies that banks with more fixed assets are more likely to earn lesser profit.

Those firms which have more intangible assets have greater opportunities in the long term for investment, development, innovation and research (Deloof, 2003 and Nucci et al., 2005).

This finding is consistent with the empirical findings of Rao et al. (2007), Zeitun and Tian (2007), Weill (2008) and Nunes et al. (2009), as they also find the negative relationship between the tangibility of banks and their profit. This findings is in line with the view that banks having lesser tangible assets can earn more profit.

The results given in the table also reveal that large banks are more likely to earn more profit. Specifically, we find that the estimated coefficient of bank size variable is positive and statistically significant. This finding is consistent the previous existing empirical studies. Specifically, Gul, Irshad and Zaman (2011) have also documented that there is a positive and significant relationship between bank size and its ability to earn profit. The positive impact of bank size on profit can be justified as follows. Larger banks are better in managing their liquidity and risk associated with loan portfolios and thus they issue more loans and seek other investment opportunity and earn more profit.

When we turn to examine the marginal impact of liquidity purchase and sale on profitability of banks we find that the estimated coefficient of the variable purchasing minus selling is negative and appears statistically insignificant. This indicates that as the banks do more net purchasing of liquidity they reduce their profit. This finding is in line with the argument that banks try to earn profit from their own resources instead of accessing liquidity market and they are using liquidity market only to meet their obligations.

4.6 Liquidity Sale and Purchase and Banks' Volatility of Profitability

Table 4.6 presents the regression results for the impact of liquidity buy and liquidity sell on the volatility of profit of banks. The results indicate that those banks which are involve in buying and selling of liquidity have, on average, lesser volatility of profit. Specifically, we find that the co-efficient of buy liquidity indicator is negative and is statically significant. This implies that the bank's volatility of profit is negatively related to its buying of liquidity. The co-efficient of sell liquidity indicator is positive but it is statically insignificant.

Table 4.6 Results for the impact of liquidity sale and purchase on banks' Volatility of profit.

Independent variables	Coefficient and standard errors
D_selling	0.003 (0.006)
D_purchase	-0.009* (0.005)
Purchase-sell	0.010** (0.054)
Profit	-0.209*** (0.025)
Tangible asset	0.209 (0.201)
Bank size	0.064*** (0.007)
Observations	541
R-squared	0.559

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The estimated coefficient of selling indicator is positive while the liquidity purchasing indicator is negative. This suggest that the banks which are involve in purchasing liquidity have lesser volatility of profit. This implies that banks which are less volatile in profit are likely to involve more in

purchasing of liquidity. A possible explanation for this finding is that banks are steadier in profit if they purchase liquidity. The purchasing of liquidity helps banks to manage meet their obligations and ultimately it will be easier for the banks to be steady in profit. We can easily say that liquidity market helps the banks to be less risky.

During the examination the marginal impact of liquidity purchase and sale on volatility of profit we find that the estimated coefficient of the variable purchasing minus selling is negative and appears statistically significant. This indicates that as the banks do less net purchasing of liquidity they reduce their volatility of profit. This finding is in line with the argument that liquidity market helps the banks to be steady which will ultimately gains the customer confidence and the confidence of investor. Thus liquidity market is a good tool to minimize the risk factors in banks.

The results reported in Table 4.6 also indicate that other bank-specific variables are also significantly related to volatility of profit. In particular, the result also indicate that bank size and profitability both are significantly related to volatility of profit of banks. Specifically, we find that the estimated coefficient of profitability is negative. In particular, the estimated coefficient suggests that banks increase their volatility of profit by 0.209% when the profit is decrease by one percent. This implies that banks with more volatility of profit are more likely to be less profitable. The results given in the table also reveal that large banks are more likely to be more volatile in profit. Specifically, we find that the estimated coefficient of bank size variable is positive and statistically significant.

This findings is consistent with the argument that banks which are more volatile in profit making must be less profitable. The banks profit comes from various means. These are commission income, income generated through investments in PIBs, income received as profit or markup generated by giving loans to customers etc. The growth in all these incomes can be possible with consistency. Thus volatility in profit will be having a negative impact on profitability. The negative impact of

profitability on the volatility of profit suggest that banks should not fluctuate in profit in order to get more profit.

The estimated coefficient of tangibility indicates that a one percent increase in tangible assets to volatility of profit leads to increase volatility of profit by about 0.02 %. This implies that banks with more tangible assets are more volatile in profit. However, the estimate is not statistically significant. The bank size is positively related with the volatility of profit and the estimates is also significant statistically. The positive impact of bank size on volatility of profit is explained as follows. This suggests that the larger the size of bank the more volatile is the profit. This results is also in line with the previous studies of Hirtle and Stiroh (2005). The large bank explore more option to earn profit. This could lead them to earn profit or lose it. Also larger banks tends to do more expansion of network this could also be the reason as books of new branches first shows loss and then profit.

These results are theoretically relevant as increased in bank size can tend to lead volatility in profit. Banks in Pakistan increase their deposit by getting high cost deposits. These decisions are normally taken by banks with lesser age to show significant figures and also to maintain their asset to deposit ratio.

Banks that develop more rapidly are likely to rise their exposure to more risky projects. Hence, we expect a positive correlation between volatility and growth. There are also certain studies which shows the impact of assets on volatility of profits. The results must be similar with banks deposits as banks have to increase their assets with respect to deposits.

Highest security or simply if the banks keep added cash against the deposits they have held they can manage liquidity. But by adopting this method they will not generate any profit. If the management of the banks strive for extreme safety then the management will have to sacrifice profitability which is major requirement of bank's shareholders. On the other hand if the banks raise the profitability by continuing investing more and more, they can face the problem in fulfilling customer demand for

cash. Therefore, for the banks it is very challenging to achieve both the objectives of maximizing profitability and managing liquidity side by side.

4.7 Liquidity and Banks' operations.

A worthy banker should hence attempt to settle both the contradictory goals by truly acting as worthy portfolio manager. They can do this by examining the situation, keeping in mind what they have to achieve and selecting the asset portfolio accordingly. Now a days banks are not addressing these issues accordingly. This kind of job requires great skills and experience to handle the situation and take decision accordingly. Banks must have such experience staff who are educated enough in this particular field. All these things will attract the investor and have good trust on management team of the banks.

The financial sector has to hold such balances to carry on smooth operations. Few years ago in 2010 most of the banks in other countries were bailout. This was done against the public protest. People still criticize about these banks and their objections by various means.

Major stake holders now a days have started to place their funds in other projects. This has become a trend among big investors. Banks are facing problems as not only they are losing investors but also regulators are increasing rules and regulations on them. Currently the economic condition of the country do not allow the banks to increase running finance portfolio and thus the only option they have left to survive with the consumer loan which is more riskier. All these conditions are carrying horrifying sights for the banks.

Bank are striving and making every effort to balance the situation, approaching old account holders and updating them about their new products and facilities. Conveying them high yield saving plans.

Banks are also convincing the financiers who have already flew into property or other sort of projects. At the same they are approaching regulators and asking them soften the rules for them and give them time frame to settle their issues. If this situation carries the bank will suffer big loss.

If the banks have less liquidity they will not fulfill depositor obligation and gradually the customer will refrain by keeping his deposit with the bank. The shareholder in this situation will sell his share which will ultimately bring down the share value.

Chapter: 5

Conclusion

5.1 Key Findings

Our results suggest that capital structure decisions of banks have positive relationship with buying and selling liquidity of banks. Banks which holds more capital are actively involved in liquidity sale-purchase market and have more tangible assets.

Increase in capital of banks suggests that banks are operating with less customer deposits and are earning less profits. It means if the banks are indulging more capital there must be serious issue of profitability. Banks which are increasing capital are also actively participating in liquidity sales and purchase. It means they are more inclined to manage liquidity by liquidity sales market. Also banks which increase capital acquire more tangible assets. This results is in line theoretical concept as recently it happens as regulators have given deadlines to commercial banks to raise their capital to those banks which are showing loss as per their books. The negative impact of profitability with capital is in line with the studies of Chisti, Ali and Sangmi (2013)

The results also indicates that banks in Pakistan are using liquidity market to full fill regulator's instructions of strictly maintaining liquidity ratio. The results clearly shows that treasury of banks are maintain certain ratio of cash and for this purpose they do sell and purchase accordingly. As discussed earlier liquidity buying and selling have similar effects.

The regression results with the total loans of banks are also very interesting. Banks which are involve in purchasing of liquidity have more loans as compared to the banks which are involve in selling of liquidity. Explanation of this result is, more loans are giving by the banks which purchases liquidity and banks manage their customer payments by purchasing liquidity. Banks can give loans according to the certain ratio of deposit (loans are lesser than deposit according to SBP regulation). Also banks has to maintain certain cash to deposit ratio. Management of banks always tries keep lesser cash to make maximum investment and make maximum investment of customer deposit in a limited period of time in various investment opportunities. Therefore investment is made immediately to gain maximum profit and if the requirement comes for customer payment or to give loan it will be managed by liquidity market. Other possible explanation is that banks give loans out of possible available funds and make payments to customers to meet their obligation by using liquidity market.

The marginal impact of liquidity on total loans to total asset indicates that those banks which do net purchasing of liquidity more reduce their total loans to total asset. From this we conclude that these banks try to meet their obligation from their own resources instead of accessing liquidity market to avoid cost of purchasing liquidity and limit themselves in giving loans.

The result of buying and selling liquidity have a negative impact on profitability. Also the profitability have positive impact on bank deposit. From this we can interpret that banks are using liquidity market only as a tool to make customer payments on demand. The profit of banks is generated by customer deposit by converting them in giving loans and investing in other profitable schemes.

We found that bank which are involve more in purchasing of liquidity are less volatile in profit means less risky. Banks are using liquidity market for buying of liquidity to manage their payments and meet customer obligation.

It seems that banks are using liquidity market as a useful tool for risk managing. The purpose for using liquidity market and changes in capital structure is profit. The results shows that profit is negatively proportional to liquidity buying and selling activity. Therefore, we conclude that Pakistani banks are only using liquidity market to meet their obligation and are inclined more towards other investment opportunities rather to invest in liquidity market in order to get more profit. Due to selling and buying of liquidity banks there is more flexibility for banks in giving loans.

Since last many years, it has been observed that banks are using derivatives to manage liquidity risks, and more refined system of liquidity risk measurement have been emerge that take into consideration across borrowers in various countries and in different industries. Regulators are encouraging these inventions and these innovations are helping banks to meet capital adequacy requirements. Our analysis of how historically banks have used liquidity market concludes that improvement in management of risk are good ones that can raise the ease of banks in giving loans.

There is difference in banking organizations all over the world according to operations and size. Banks management have to react accordingly with different economic circumstances across the countries. These results may be similar in developing countries as the banking is comparatively of closed nature. Earlier studies suggested that a weak institutional atmosphere makes banking disasters more likely (Demirguc-Kunt and Detragiache, 1997).

In this paper we endorse some results in earlier research, for instance a negative relationship between capital and profitability, and a positive relationship between total loans and bank size. Other important determinants of bank margins, corporate taxation, financial structure and the legal and institutional setting have not been considered in the literature.

5.2 Policy Implications

The findings that we present in this dissertation is equally useful for managers, investors, academic researchers and policy makers. Specifically, our finding that banks are using liquidity market only as tool for payments on demand of customers. No doubt the findings of how banks having been performing in Pakistan and what are the effects on their capital structure and operations will helps the investor and policy makers to get the future direction. It will also help the regulator to further strengthen the liquidity market as the banks in Pakistan rely strongly on liquidity market to meet their obligations. Based on above findings, the researchers can work on the subject if the banks do not use liquidity market what impact will the banks have on their financials. This study will also help the bank's management to design effective cash holding policies.

5.3 Future Area of Research

The changes of discount rates by the government have an influence on bank. It would be exciting to examine what changes in banking industry has occurred with this development. The expected less spread of profit will make the banks to think differently. In which direction the discount rate decrease will drag the banks. What will be the effects on smaller size banks in Pakistan? What will be effect on deposit of banks? Specifically with the less growth in industrial area what other option will big size bank and small size banks will explore in order to survive the market and how the banks will use the liquidity market in this scenario?

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