Does Financing Structure Relates to Liquidity Risk? A Comparative Study of Islamic and Conventional Banks of Pakistan

Hussain Mohi-ud-Din Qadri¹, Atta Ul Mustafa², Hassnian Ali³*  
¹²³ Minhaj University Lahore, Pakistan

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Abstract

The purpose of this paper is to find out whether financing in specific sectors increases bank liquidity risk and how this goes on with both Islamic and conventional banks. The paper used pooled regression, fixed effect model and random effect model decided on the basis of dummy joint significant test. SPEC has a relationship with long-term liquidity management only in the case of all banks while lending composition change and risky sector have an association with net stable funding ratio especially in case of Islamic banks. And all other banks specific variables are unable to show a significant result. In contrast, the macroeconomic variable GDP and Inflation have a strong relationship in a short-run period only. So, the study suggests that Islamic banks may not involve in changing the lending composition and investing in risky sectors to save themselves from liquidity risk. This paper adds value to the existing literature on liquidity risk under the new indicators issued by Basel III.

Keywords: Financing concentration, Macroeconomic variable, Liquidity risk & Basel III.

I. Introduction

One of the main objectives of government is to provide a good standard of living for its people. For fulfilling this objective, the government around the world continuously strive to gain consistent economic growth. Furthermore, such persistent growth and development can never be achieved without a well-defined financial system because, capital accumulation is the prerequisite for the development of a country. Banks act as a major

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Dr. Hussain Mohi-ud-Din Qadri, Atta Ul Mustafa, Hassnian Ali
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facilitator in providing a channel through which savings is converted into investment. So, the role of banks in economic growth is inevitable.

At the time of partition Pakistan had only two banks such as Habib bank and Australasia bank. After the announcement of partition Habib bank transfer its head office from Mumbai to Karachi while Australasia bank head office was already in Pakistan. The state bank of Pakistan was created on July 1948. The state bank of Pakistan on one hand help the existed banks to further increase their coverage areas and on the other hand established National bank of Pakistan. The policies issued by state bank of Pakistan proved to be fruitful as can be seen from banks total advances during 1947-74. The total advances to different sectors rose from 38 percent in 1952 to almost 89% in 1970.

Islamic banking and finance (IBF) industry in Pakistan has expanded and shows its visible influence in the development of financial system of a country in a very short period of time. In terms of profit making, Islamic banks operating within the border lines of shariah, are gaining more importance and seem very competitive and challenging while comparing with conventional banking. Islamic banks are considerably different than their counter part due to the prohibition of Riba in their operations. Moreover, according to (Anitha et al., 2013; Hadenan & Tamkin, 2006), Islamic banks do not only restrict their operations on borrower and lender basis, but they need to go for equity partnership as well.

The great depression of 2008 led the many financial institutions in the world into a collapse situation. A large number of countries around the world affected from it. Since the crises, the banks are now giving more attention to their liquidity threat than before. Furthermore, this large crisis shows that current liquidity standards for tackling liquidity problems is insufficient and need to be considered again. According to (Adalsteinsson, 2014), the liquidity risk is the most important risk than any other one, because, it can collapse the whole mantle of financial system. Additionally, when banks fail to meet the depositor’s demands, and are unable to sell the liquidity asset in the required time frame could lead to the potential loss of credibility of banks. In addition, when banks lose credibility, they are nearly close to shut down. So, liquidity pose a serious threat to the banking system. The Islamic banks face more severe challenge than conventional banks because of limited access of shariah compliant markets where they can sell their liquid asset to tackle liquidity problem.

The ideal way to assess the bank performance is to check how well the bank is able to meet its depositor’s demand, which is of course can be checked through its liquidity status. According to (Iqbal, 2012) the tackling of liquidity risk is the main core of operation for bank to improve its standing in market regardless of whether bank is Islamic or conventional one. Liquidity risk is the product of bank failure in managing the investment collected as deposit and lending given as financing(Samsudin et al., 2012).

There are various studies that reveal the impact of financial stability on different types of risks faced by banks, however, it is very rare that someone specifically emphasizes about the liquidity risk. According to (Blasko & Sinkey, 2006), there is a strong relationship between management of interest rate risk and lending in real estate sector in USA. (Hayati & Ariff, 2004) proved that lending in risky sector decrease the risk in Malaysian Treasury
Institution. While others such as (Rahman & Shahimi, 2010) found out that financial stability has to do with several risks faced by both Islamic and conventional banks. So, the questions rise that whether actually do financial stability have anything to do with these risks? And secondly whether there is difference in relationship of financial stability and liquidity ratio in Islamic and conventional banks?

The objective of this study is to measure the financing structure relationship with liquidity risk. Most of the previous studies used simple liquidity ratios for liquidity risk, for instance (Akhtar et al., 2011; Almumani, 2013; Iqbal, 2012; Ramzan & Zafar, 2012; Anam et al., 2008) used cash to total asset as a proxy for liquidity risk while, (Sulaiman et al., 2013) used total deposit to total asset ratio as a measure of liquidity risk. (Abdullah & Khan, 2012) used capital to total asset ratio. However, this paper adopts the latest liquidity risk indicators Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) proposed by Basel III. The LCR suggest the bank to hold an optimal amount of liquidity assets to withstand the liquidity pressure for 30 days. While the NSFR refers to funding risk extend beyond loan (Yi Wu, Elif Ture, 2014). We try to overcome the large gap in literature in following ways: firstly, there are only few studies which tries to explain relationship between financial stability and liquidity risk. The studies so far in this field show that the relationship between the two, are either explained on theoretical basis or emphasize the relationship between financial stability and other risks. Secondly, even though (Cucinelli, 2013) explored the LCR and NSFR, but this study is different in a sense, that she studied the determinants of liquidity risk in European countries and explored conventional banks only. While our study looks at link between financial stability and liquidity risk, and we compare this relationship from both perspectives such as Islamic and conventional banks, which was not done in case of Pakistan. In addition to that, we use three financial stability indicators and two liquidity risk indicators that will help us to get the result for both short and long run risks. So, it will provide a more comprehensive understanding in exploring the hypothesis of this study.

II. Literature Review

Liquidity risk is defined as when bank is unable to meet the depositor’s demand without indulging in severe cost or to raise fund for the purchase of new assets. Specifically, liquidity problem arises due to the unexpected large withdrawals and bank becomes unable to tackle it due to low amount of available funds (Iqbal, 2012). In real world, banks always have challenges in managing assets with the right amount of liability and equity, so, banks need to be very careful as it may cause insolvency issues.

The liquidity risk has two types, mainly the funding liquidity risk and market liquidity risk (Banks & Banks, 2014; Ebrahim, 2011; Ruozzi & Ferrari, 2013). The first one denotes a situation when bank face challenges in tackling their obligations immediately or in a low-cost manner. The second one describes a situation when bank is not been able to transform its liquid assets into cash.

There are many researchers that measures liquidity risk but all of them take simple liquidity measures such as ratio of cash to total asset (Akhtar et al., 2011; Almumani, 2013; Anam et al., 2008), ratio of total deposit to total asset (Mohamad et al., 2013), ratio of
current asset to total liabilities (Ahmed et al., 2011) and ratio of capital to total asset Abdullah & Khan (2012) in measuring the various determinants of liquidity risk. In addition, (Buch & Goldberg, 2015) measure liquidity risk through expectations of investor toward liquidity risk. Ahmad & Arif (2004) by using single factor analyses, they concluded that investment in risk do affect the exposure of deposit taking bank towards market risk. So, to cut the story short the previous literature shows that financial stability has something to do with insolvency risk but none have shown its relationship with liquidity risk.

For Pakistani banks, Abdullah & Khan (2012) used capital to total asset ratio as proxy to liquidity risk. There finding concluded that liquidity risk and debt to equity ratio have direct relationship in case of domestic bank, while total loans to total deposit and debt to equity ratio have a significant association with liquidity risk of foreign based banks. Using the same dependent while different independent variables, Ahmed et al. (2011) they also measured the liquidity risk indicators in Pakistani banks. They found out that tangibility, leverage and different age are most important factors that affect liquidity risk. Their findings oppose the (Ramzan & Zafar, 2012) who also examined the same Pakistani banks but with different time span. They use different proxy for liquidity measures with same explanatory variables, they found that only the size matters. Their different measures for liquidity could be the possible reasons for their contradictory results.

There are some studies that instead of just trying to learn about banks they compare Islamic and Conventional banks on the same front (Akhtar et al., 2011; Iqbal, 2012). Anam et al. (2008) tried to found the relationship between liquidity risk of Islamic and conventional banks for the time span of 5 years. They used ROA, ROE, Size and networking capital in their research. They concluded that networking capital and size have negative association with liquidity risk for both Islamic and conventional banks. The Mohamad et al. (2013) also tried to find out the determinants of liquidity risk in case of Malaysian Islamic banks. His main contribution was the inclusion of macroeconomic variables into analysis. Before him, people mostly remained confined to bank specific variables and there was hardly anyone who considered macroeconomic variables. He introduced 3-month interbank money market, money supply, inflation and GDP as macroeconomic variables. He used 16 years data of 17 Islamic banks and concluded that inflation and GDP have a negative association with liquidity risk. There are various opinions that support the result with the argument that as economy grows it provides the bankers with more opportunity in increasing their income thus, reducing the liquidity risk.

So, to conclude the above discussion, the researchers previously used the simple ratios for determining the liquidity risk. So, we are going to use liquidity coverage ratio and net stable funding ratio for measuring the liquidity risk for short and long run as introduced in BASEL 3. The advantage of this approach is that it covers both the aspects of long and short run with precise accuracy. Moreover, we will also explore both Islamic and conventional banks and see the effects of these liquidity risk measures separately and in more detailed manner.
III. Methodology

The model used in this study is consisted of both bank specific variables and macroeconomic variables. The model is based on study conducted by (Rahman et al., 2018). The data is collected through banks’ annual report and for macroeconomic variables, we use WDI (World bank database) for its collection. We use 10-year time span from 2009-18. This paper used pooled regression, fixed effect model and random effect model decided on the basis of dummy joint significant test. The model is as follows:

$$
LCR_t = \beta_0 + \beta_1\text{SPEC}_t + \beta_2\text{LCC}_t + \beta_3\text{VART}_t + \beta_4\text{TA}_t + \beta_5\text{ROA}_t + \beta_6\text{NPF}_t + \beta_7\text{FIN}_t + \beta_8\text{CAR}_t + \beta_9\text{RISKY}_t + \beta_{10}\text{GDP}_t + \beta_{11}\text{INFL}_t
$$

(1)

$$
\text{NSFR}_t = \beta_0 + \beta_1\text{SPEC}_t + \beta_2\text{LCC}_t + \beta_3\text{VART}_t + \beta_4\text{TA}_t + \beta_5\text{ROA}_t + \beta_6\text{NPF}_t + \beta_7\text{FIN}_t + \beta_8\text{CAR}_t + \beta_9\text{RISKY}_t + \beta_{10}\text{GDP}_t + \beta_{11}\text{INFL}_t
$$

(2)

LCR = Liquidity Coverage Ratio

NSFR = Net Stable Funding Ratio

SPEC = Financing Concentration

LCC = Lending Composition Change

VART = Variance of Traditionality Index

TA = Log of Total Asset

ROA = Return on Asset

NPF = Non-Performing Financing

FIN = Financing ratio

CAR = Capital Adequacy Ratio

RISKY = Investment in Risky Sector

GDP = Gross Domestic Product

INFL = Inflation

3.1. Financing concentration (SPEC)

Its build is as follows

$$
\text{SPEC} = \sum_{i=1}^{14} S_i^2
$$

$S_i$ represent the annual investment in industry $i$. The value of 1 indicates that investment is highly concentrated while value of 0 shows a severe level of diversity in investment portfolios.
3.2. Lending-Composition Change (LCC)

LCC is the measure of short-term stability in investment. It is measured by:

\[ \text{LCC} = \sum_{i=1}^{14} \min (S_{it}, S_{it-1}) \]

The value of 1 represents no change in investment with respect to the previous year while 0 indicates that the specific industry is not funded by banks in the previous year. So, a high value shows the short-term stability in investment.

3.3. Variance of traditionality index (VART)

VART is the representative of medium-term stability in financial composition. It is calculated by taking variance of traditionality index. Which is calculated by using three-year interval for every industry involved. Such that value for 2006 is calculated from data of 2005-07.

\[ \text{TI}_{it} = \sum_{i=1}^{14} \text{C}_{i,t-2}/5 \]

The non-performing financing, financing ratio is calculated by dividing both of these with total asset of the specific year. The capital adequacy ratio is calculated by firstly adding tier 1 and tier 2 capital and then by dividing it with total asset. The return on asset is calculated by dividing profit after taxation with total asset. The investment in risky sector is sum of the investment in risky sectors in each year. While for GDP and inflation both of these are taken from world bank database.

IV. Results and Analysis

We run total of six regressions with liquidity coverage ratio and net stable funding ratio as a dependent variable in three different regressions. The two regressions are for Islamic, two for conventional and two for overall banking sector including both Islamic and conventional banks. The inflation and GDP are both parts of all regressions. The Breusch Pagan test and white test is conducted which proves that data is free from heteroskedasticity problem. Moreover, other estimation is done which shows that data is even free from normality, serial correlation and multicollinearity problem. The dummy variable joint significance test is conducted to choose either pooled OLS or random and fixed effect model are best. So, for some regressions pooled OLS fitted while for others random or fixed effect model suited.

| Table 1. Correlation Matrix for Islamic Banks |
|---------------------------------------------|
|      | SPEC | LCC T | VAR T | TA T | ROA T | NPF T | Fin T | CAR T | RISK T | GDP T | INFL T |
| SPEC | 1.00 |
| LCC  | 0.00 | 1.00 |
|      | 0.03 |
| VAR  | 0.06 | -    | 1.00 |
| T    | 0.04 | 0.08 | 0    |
|      | 0.67 |
| TA   | 0.00 | 0.05 | 0.80 | 0.00 |

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The above matrix shows the correlation between explanatory variables in case of Islamic banks. You can see that the highest correlation found between GDP and inflation rate. However, the rest of the variables do have a correlation with each other. But no one has any severe correlation. So, we conclude that data is free from multicollinearity problem.

### Table 2. Correlation Matrix for Conventional Banks

| SPEC | LCC | VAR | TA | ROA | NPF | Fin | CAR | RISK | GDP | INFL |
|------|-----|-----|----|-----|-----|-----|-----|------|-----|------|
| SPEC | 1.00|     |    |     |     |     |     |      |     |      |
| LCC  | -    | 1.00|    |     |     |     |     |      |     |      |
|      | 0.01 |     | 0  |     |     |     |     |      |     |      |
|      | 8    |     |    |     |     |     |     |      |     |      |
| VAR  | -    | -   | 1.00|     |     |     |     |      |     |      |
| T    | 0.31 | 0.15| 0  |     |     |     |     |      |     |      |
|      | 22   | 3   |    |     |     |     |     |      |     |      |
| TA   | -    | -   | -  | 1.00|     |     |     |      |     |      |
|      | 0.01 | 0.13| 0.01| 00  |     |     |     |      |     |      |
|      | 5    | 1   | 64 |     |     |     |     |      |     |      |
| ROA  | 0.08 | 0.06| 0.06| 1.00|     |     |     |      |     |      |
|      | 3    | 71  | 0.02| 6   | 0   |     |     |      |     |      |
|      |     |     |    |     |     |     |     |      |     |      |
| NPF  | 0.06 | 0.29| -  | -   | -   | 1.00|     |      |     |      |
|      | 86   | 3   | 0.17| 0.63| 0.11| 0   |     |      |     |      |
|      |      | 42  | 2  | 3   |     |     |     |      |     |      |
| Fin  | 0.29 | -   | 0.05| 0.12| -   | -   | 1.00|      |     |      |
|      | 6    | 0.03| 6  | 4   | 0.01| 0.07| 0   |      |     |      |
|      |      | 0   | 0  | 2   |     |     |     |      |     |      |
| CAR  | -    | 0.01| 0.11| 0.03| 0.32| -   | 1.00|      |     |      |
Again, in the above correlation matrix you can see that inflation and GDP have a high correlation but except these two variables there is no other variables which have a high correlation. So, we are safe to say that data is free from multicollinearity.

Table 3. Correlation Matrix for all Banks

| SPEC | LCC | VAR | TA | ROA | NPF | Fin | CAR | RISK | GDP | INFL |
|------|-----|-----|----|-----|-----|-----|-----|------|-----|------|
| SPEC | 1.00| -   | -  | -   | -   | -   | -   | -    | -   | -    |
| LCC  | 1.00| -   | -  | 0.05| -   | 0.05| 0.05| 0.05 | -   | -    |
| VAR  | 0.05| 0.06| 0.01| 0.21| 0.21| 0.21| 0.21| 0.21 | 0.19| 0.19 |
| T    | 0.06| 0.06| 0.21| 0.9  | 0.9  | 0.9  | 0.9  | 0.9  | 0.9  | 0.9  |
| TA   | -   | 0.04| 0.01| 0.01| 0.01| 0.01| 0.01| 0.01 | 0.01| 0.01 |
| ROA  | -   | -   | 0.04| 0.04| 0.04| 0.04| 0.04| 0.04 | 0.04| 0.04 |
| NPF  | 0.25| 0.08| 0.09| 0.02| 0.02| 0.02| 0.02| 0.02 | 0.02| 0.02 |
| Fin  | 0.02| 0.08| 0.09| 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  |
| CAR  | 0.01| 0.11| 0.32| 0.03| 0.03| 0.03| 0.03| 0.03 | 0.03| 0.03 |
| RISK | 0.16| 0.19| 0.32| 0.13| 0.13| 0.13| 0.13| 0.13 | 0.13| 0.13 |
| Y    | 9   | 0.29| 0.27| 0.25| 0.25| 0.25| 0.25| 0.25 | 0.25| 0.25 |
| GDP  | -   | 0.37| 0.32| 0.15| 0.15| 0.15| 0.15| 0.15 | 0.15| 0.15 |
| INFL | 0.20| 0.31| 0.39| 0.14| 0.14| 0.14| 0.14| 0.14 | 0.14| 0.14 |
The above tables show the correlation matrix scenario in case of all banks. Even again in this case there is high correlation between inflation and GDP. And even again there is no high correlation problem between any other variables. So, again we are free multicollinearity problem.

| Table 4. Random Effect Model for Islamic Bank with LCR |
|-----------------------------------------------|
| **LCR** | **Coef.** | **Std. Err.** | **Z** | **P>|z|** |
| SPEC | -2.2148 | 2.05 | -1.0 | 0.917 |
| LCC | -2.327 | .7485 | -3.1 | 0.756 |
| VART | 2.67e-15 | 6.91e-15 | 0.39 | 0.699 |
| TA | 13.702 | 12.195 | 1.12 | 0.261 |
| ROA | 13.49 | 13.23 | 1.02 | 0.308 |
| NPF | 6.73 | 40.103 | 0.17 | 0.867 |
| Fin | 8.935 | 5.11 | 1.75 | 0.081 |
| CAR | -4.955 | 12.06 | -0.41 | 0.681 |
| RISKY | -2.38e-07 | 1.33e-07 | -1.79 | 0.074 |
| GDP | 13.636 | 7.316 | 1.86 | 0.062 |
| INFL | 5.749 | 2.600 | 2.21 | 0.027 |

The above table shows the case scenario of Islamic banks with liquidity coverage ratio as a dependent variable. There is only one explanatory variable which is inflation that have positive relationship with liquidity coverage ratio and the relationship is significant as well. The other variables do have a relationship but we couldn’t conclude because, of high p and low t values.

| Table 5. Pooled OLS for Islamic Bank with NSFR |
|-----------------------------------------------|
| **LCR** | **Coef.** | **Std. Err.** | **t** | **P>|z|** |
| SPEC | -0.61231 | 2.437 | -0.25 | 0.803 |
| LCC | -2.035 | .888 | -2.29 | 0.028 |
| VART | 1.26e-14 | 8.20e-15 | 1.54 | 0.133 |
| TA | 11.985 | 14.478 | 0.83 | 0.413 |
| ROA | -25.744 | 15.714 | -1.64 | 0.11 |
| NPF | -24.02 | 47.60 | -0.50 | 0.617 |
| Fin | 8.19 | 6.07 | 1.35 | 0.186 |
| CAR | -1.21 | 14.32 | -0.09 | 0.933 |
| RISKY | -4.24e-07 | 1.58e-07 | -2.68 | 0.011 |
| GDP | 5.75 | 8.68 | 0.66 | 0.512 |
| INFL | 2.191 | 3.087 | 0.71 | 0.48 |
| Cons | 54.74 | 135.25 | 0.40 | 0.68 |

We apply pooled OLS with net stable funding ratio as a dependent variable. We apply pooled test because, the joint dummy variable test shows that pooled OLS is best suited instead of fixed or random effect model. There are two variables such as LCC and RISKY which have statistically significant relationship with net stable funding ratio. The LCC and RISKY sector have negative association with net stable funding ratio. Which concludes that change in lending composition (investing in same industry throughout different years) and
increase of investment in risky sector will bring a distortion impact on medium- or long-term liquidity management. The others variables do have an impact as well but their relationship is statistically insignificant so, we not going to mention that variables.

**Table 6. Pooled OLS for Conventional Banks with LCR**

|   | Coef. | Std. Err. | t   | P>|z| |
|---|-------|-----------|-----|-----|
| SPEC | 1.213 | 2.003 | 0.61 | 0.251 |
| LCC | -0.634 | 0.5446 | -1.16 | 0.251 |
| VART | 6.13e-16 | 5.38e-16 | 1.14 | 0.262 |
| TA | 55.55 | 33.48 | 1.72 | 0.094 |
| ROA | -27.99 | 187.47 | -0.15 | 0.882 |
| NPF | 177.01 | 104.28 | 1.70 | 0.09 |
| Fin | 0.1242 | 0.419 | 0.30 | 0.769 |
| CAR | 1187.97 | 636.483 | 1.87 | 0.07 |
| RISKY | -7.48e-08 | 4.08e-08 | -1.83 | 0.075 |
| GDP | 5.905 | 6.305 | 0.94 | 0.355 |
| INFL | 4.464 | 2.05 | 2.18 | 0.036 |
| Cons | -427.88 | 310.69 | -1.37 | 0.177 |

The above table shows the pooled OLS regression result of conventional banks with liquidity coverage ratio as a dependent variable. In this regression only, inflation have statistically significant relationship with liquidity coverage ratio. So, as inflation increase the liquidity management for short term period also improves. The other variables do have relationship but again the relationship is not statistically significant.

**Table 7. Random Effect Model for Conventional Bank with NSFR**

|   | Coef. | Std. Err. | t   | P>|z| |
|---|-------|-----------|-----|-----|
| SPEC | -2.49 | 2.43 | -1.03 | 0.305 |
| LCC | 0.4593 | 0.6619 | 0.69 | 0.48 |
| VART | 1.58e-15 | 6.54e-15 | 2.41 | 0.016 |
| TA | -25.80 | 40.69 | -0.63 | 0.526 |
| ROA | 85.34 | 227.83 | 0.37 | 0.708 |
| NPF | -91.42 | 126.72 | -0.72 | 0.471 |
| Fin | -.0897 | 0.510 | -1.76 | 0.078 |
| CAR | -577.42 | 773.50 | -0.75 | 0.455 |
| RISKY | -2.54e-08 | 4.96e-08 | -0.51 | 0.608 |
| GDP | .6964 | 7.66 | 0.09 | 0.928 |
| INFL | 1.38 | 2.491 | 0.56 | 0.577 |
| Cons | 403.86 | 377.57 | 1.07 | 0.285 |

The above table shows the Random Effect Model result for conventional bank with net stable funding ratio as a dependent variable. The VART have only variable with statistically significant association with long term liquidity management. However, the value is too low. The other variables again have association but with not statistically significant value.

**Table 8. Random Effect Model for Banks with LCR**

|   | Coef. | Std. Err. | t   | P>|z| |
|---|-------|-----------|-----|-----|
| SPEC | -2.49 | 2.43 | -1.03 | 0.305 |
| LCC | 0.4593 | 0.6619 | 0.69 | 0.48 |
| VART | 1.58e-15 | 6.54e-15 | 2.41 | 0.016 |
| TA | -25.80 | 40.69 | -0.63 | 0.526 |
| ROA | 85.34 | 227.83 | 0.37 | 0.708 |
| NPF | -91.42 | 126.72 | -0.72 | 0.471 |
| Fin | -.0897 | 0.510 | -1.76 | 0.078 |
| CAR | -577.42 | 773.50 | -0.75 | 0.455 |
| RISKY | -2.54e-08 | 4.96e-08 | -0.51 | 0.608 |
| GDP | .6964 | 7.66 | 0.09 | 0.928 |
| INFL | 1.38 | 2.491 | 0.56 | 0.577 |
| Cons | 403.86 | 377.57 | 1.07 | 0.285 |
The above table shows the Random Effect Model result for all banks with liquidity coverage ratio as a dependent variable. The only two variables GDP and Inflation have positive significant association with short term liquidity management with statistically significant z and p values. The other variables do have relationship but with not statistically significant relationship.

Table 9. Fixed Effect Model for Banks with NSFR

|         | Coef. | Std. Err. | t     | P>|z| |
|---------|-------|-----------|-------|-----|
| SPEC    | -3.430| 1.663      | -2.06 | 0.042|
| LCC     | -.2312| .4685      | -0.49 | 0.623|
| VART    | 4.83e-16| 4.87e-16  | -0.49 | 0.623|
| TA      | -4.024| 4.357      | -0.92 | 0.359|
| ROA     | -12.46| 10.767     | -1.16 | 0.251|
| NPF     | -29.939| 32.633     | -0.92 | 0.362|
| Fin     | -.0838| .0471      | -1.78 | 0.079|
| CAR     | -.1008| 11.40      | -0.01 | 0.993|
| RISKY   | 2.41e-08| 4.64e-08  | 0.52  | 0.605|
| GDP     | -1.448| 4.955      | -0.29 | 0.711|
| INFL    | .8329 | 1.625      | 0.51  | 0.610|
| Cons    | 223.686| 54.805     | 4.08  | 0.000|

The above table shows the Fixed Effect Model result for all banks with net stable funding ratio as a dependent variable. The only variable which have statistically significant relationship with net stable funding ratio is SPEC. So, increase in SPEC will bring a negative impact on long term liquidity management. Again, all the other variables do not have statistically significant relationship with long term liquidity management.

So, to conclude all the above discussion, in case of LCR the significant variables are inflation (Islamic bank), inflation (conventional bank), and GDP and inflation (all banks). While in case of NSFR the significant variables are LCC and RISKY Sector (Islamic banks), VART (conventional bank), and SPEC (all banks). It means in case of LCR the significant variables
are only macroeconomic variables while in case of NSFR the bank specific variables are significant. To summarize, the high macroeconomic variables means high amount of liquid assets bank needs to maintain in order to tackle the liquidity stress for 30 days (Short term). In Islamic banks change of lending composition and investment in risky sector will increase the liquidity risk in long run, similarly in conventional banks the long-term stability depends positively only on VART ratio, but the vale is too low. And in case of all banks, the long-term stability depends negatively on financing concentration, such that increase of financing concentration in one sector increase the overall liquidity risk in the long run. Over result is same as found by (Ramzan & Zafar, 2012).

V. Conclusion and Recommendation

This study used the data from banks’ annual report from 2009-18 and concluded that SPEC have a relationship with long term liquidity management only in case of all banks while lending composition change and risky sector have an association with net stable funding ratio too but in case of Islamic banks. The other two variables GDP and Inflation show a relationship short term liquidity management for both Islamic and conventional banks and in case of all bank’s scenario as well. However, for other bank specific variables we found relationship with statistically insignificant value of p and t. So, we are safe to conclude that according to over data time period, there is an association with bank specific variable and liquidity management in long term. While in short term only macroeconomic variables have association with liquidity risk. Our results are consistent with (Ramzan & Zafar, 2012) who found the same behavior but with different dependent variables. So, the study suggest that in case of Islamic banks, the Islamic banks may refrain from investing in risky sectors and do not alter their lending composition. While in case of all banks, the banks may not fully invest all of their resources in one sector, as it will have a distortionary impact on their liquidity management.
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