Paradigms
Print ISSN 1996-2800, Online ISSN 2410-0854
2020, Vol. 14, No. 1 Page 80-85
DOI: 10.24312/193014012

Impact of Liquidity Risk and Funding Liquidity Risk on Risk Taking of Pakistani Banking Industry

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Cite this paper: Bashir, A, Nadeem, N, Ahmed, H. Z. (2020). Impact of liquidity risk and funding liquidity risk on risk taking of pakistani banking industry. *Paradigms, 14*(1), 80-85.

The study examines the effect of liquidity and funding liquidity Risk on risk taking behavior of the Pakistani banking sector during 2007-2017. By taking various proxies and applying dynamic panel data technique this study reports its findings. Results of the study elaborate that liquidity risks and funding liquidity risks have decreased the risks taken by banks during 2007-2017. Moreover, during Basel III-time period (2013-2017) liquidity risks and funding liquidity risks have also reduced the risks taken by the banks. The results also conclude that liquidity risks and funding liquidity risks have no impact on bank risk taking in post Financial Crisis and pre-Basel III-time period. The results of this study reveal size as a moderator in affecting the risk-taking behavior of Pakistani banks.

Keywords: Bank, Liquidity Risk, Funding Liquidity Risk, Basel Capital Regulations

INTRODUCTION

The theory of financial intermediation states that most important function of bank is liquidity creation. In order to maintain efficiency in financial intermediation and to stimulate economic growth, banks financed their fixed assets with short term deposits. However, Diamond and Rajan (2000) stated that by doing this, banks may face liquidity risk (LR) because banks must provide depositors their deposits on demand while also maintain long term loans. LR can be defined as the incapability of bank to finance cash outflows at specific time and it is related to assets of bank (Strahan, 2008). LR poses major hazard to stability of financial system and financial institutions management (Drehmann & Nikolaou, 2013). Bank liquidity gained more importance since the Global Financial Crisis (GFC) of 2007-2008. According to the DeYoung and Jang (2016) seeds of turmoil of recent GFC can be traced into the LR that resulted in bank failures across the globe during 2007 to 2009. According to Hong, Huang, and Wu (2014) an important factor in bank failures during 2009–2010 was systematic liquidity risk. They were of the view that LR can trigger bank failures through systematic and idiosyncratic channels.

Closely related to LR is funding liquidity and funding liquidity risk (FLR). Funding liquidity is the capability to pay liabilities when it becomes due (Drehmann & Nikolaou 2013). Thus banks' inability to meet its short term liabilities is FLR and it is related to liability side of balance sheet. Funds liquidity is more important when bank deposits becomes mature. The major logic behind this risk is that over a certain period bank will not be in a position to meet its obligations and thus they will incur FLR. Funding liquidity was known as an important factor for risk banks' taking behavior, thus jeopardizing the whole of financial systems' stability. (Khan, Scheule, & Wu, 2017). FLR also played its part in GFC.

In the aftershock of GFC, bank regulators have paid special attention to the liquidity risks. Bank regulators have tried to cater the issue of LR by introducing new liquidity requirements in Basel III Accord (2010). These liquidity requirements are specially designed for internationally active banks. The logic behind these regulations is that by increasing cash and liquid securities, LR and shocks along with risky behavior of banks can be reduced.

According to researcher's knowledge, research work conducted on FLR's impact on the bank risk specifically focusing Pakistani banking industry is very limited. During the last decade or so Pakistan banking industry has gone through lots of consolidation and it has witnessed quite a few mergers and acquisitions. Moreover, during this time period Pakistan has adopted the liquidity guidelines proposed by Basel III as well. So there is a need for an in-depth and comprehensive study to be carried out in Pakistani banking sector with respect to liquidity and funding liquidity risk. This study makes its contributions in several ways. First this study attempts to fill the gaps in literature by providing empirical evidence on the impact of LR and FLR on bank risk exclusively in one of emerging markets banking sector of the world i.e. Pakistan. Second this study quantifies the impact of LR and FLR on bank risk in Basel III-time period. Third this study sheds light on the impact of LR and FLR on bank risk in post Financial Crisis and pre Basel III period. The results of the study are useful for both regulators like State Bank of Pakistan and management of banks to consider the impact of funding liquidity, LR size and capital on the risk taking behavior of Pakistani banks. Thus they can draw and enhance the policy guidelines to improve the regulatory framework for banks with respect to liquidity management and risks associated with it.

LITERATURE REVIEW

The theoretical motivation behind this research stems from the work of Acharya and Naqvi (2012). They theoretically show that when funding liquidity risk of banks is reduced by attracting large amount of deposits, the management of banks has the motivation in indulging high risk to increase their compensation. Since performance of bank management is directly related to no. of loans

they make, bank managers grant more loans by reducing the lending rates of loans. By taking large amount of deposits as cushion that they will not incur funding liquidity. However, they may experience the shortage of capital by virtue of non-performing loans as a result of aggressive lending which may enhance the banks' failure risk.

Dahir, Mahat, and Ali (2018) studied the impact of liquidity risk and funding liquidity risk on the risk-taking of the banks operating in BRICS countries during 2006 to 2015. By employing system GMM techniques they noted that both liquidity and funding liquidity risk has significant influence on the risk bearing behavior of banks. They observed that banks having low funding liquidity risk carry extra risks and vice versa. As for as the impact of liquidity risk is concerned, when liquidity risk reduce it results in higher risk taking by bank. Ha and Quyen (2018) studied data of Vietnamese commercial banks during 2002 to 2016 to check the effect of funding liquidity risk on the banks' risk taking behavior. They concluded that banks with high funding liquidity risk tried to take less risk. They also noted that big banks take less risk and fails to find any association between financial crisis and risk taking behavior of banks in their sample. Same phenomena are searched by Rokhim and Min (2018) in Southeast Asian banks during 2002 to 2016. They findings concluded that banks having low liquidity risks indulge in less risky activities. Bashir and Hassan (2017) looked at the effect of liquidity and various capital regulations on the risks of Pakistani commercial banks from 1997 to 2015. They concluded that banks with low liquidity take more risks. There were of the view that low liquidity increase funding cost which forces banks to take extra risks.

Ghenimi, Chaibi, and Omri (2017) investigated the impact of liquidity risk on the bank stability of MENA countries. They studied 49 banks during 2006–2013 for checking bank stability using Z score as proxy. They reported that banks having high liquidity risks have high probability of default. A large amount of liquid assets lowers the probability of default of banks. In other word a high liquidity risk increases bank risk. Khan et al. (2017) examined the relationship between funding liquidity, liquidity and bank risk taking of U.S. bank holding companies. By taking quarterly data from 1986 to 2014 in their sample, they arrived at their conclusion. According to their findings banks with low funding liquidity risk take more risk and vice versa. They concluded that by virtue of high deposits, banks have low chance of incurring funding shortfall and these high deposits might restrict their audit. Vazquez and Federico (2015) investigated bank funding structure and its influence on the financial stability in 11,000 US and European banks in pre financial crisis period of 2001 to 2008. They concluded that banks with weak funding liquidity position in the pre-crisis period were likely to fail in after crisis period. Drehmann and Nikolaou (2013) explored the relationship between funding liquidity risk and market liquidity in European banks from June 2005 and October 2008. They concluded that overall liquidity risk is low with the exception of financial crisis time period. They also concluded that both funding and market liquidity are simultaneously determined in equilibrium.

Hypothesis

H1: Liquidity risk has negative impact on bank risk

H2: Funding liquidity risk has negative impact on bank risk

H3: Liquidity risk has negative impact on bank risk in Basel III-time period

H4: Funding liquidity risk has negative impact on bank risk in Basel III-time period

H5: Liquidity risk has negative impact on bank risk in post financial crisis (pre Basel III) time period

H6: Funding liquidity risk has negative impact on bank risk in post financial crisis (pre Basel III) time period

METHODOLOGY

Dynamic panel data methodology has been used to explore the impact of funding liquidity risk on bank risk-taking. System Generalized Method of Moments (GMM) approach is used to overcome the problem of the endogeneity of the explanatory variable. Roodman (2006) is of the view that to estimate GMM, instruments must be less than number of banks. Hansen test of over-identifying restrictions is being employed to check the validity of the instruments.

Sample Selection and Data Gathering

All listed commercial banks of Pakistan from 2007 to 2017 are included in study sample. The data is obtained from the financial statements of those banks from their websites. Orbis database, which contains widespread data of banks worldwide, including banks' balance sheets and income statements have been used to validate the omitted data.

Empirical Model

Generic model of this study is as follows.

BR= f (bank liquidity, Bank Capital, Profitability, Size, Macroeconomics Variable)

BR= f (Liquidity Risk, Funding Liquidity Risk, Bank Capital, Profitability, Size, GDP)

The following equations are used in the study.

$$NPLGL_{i,t} = \beta_1 + \beta_2\, FGAP_{i,t} + \beta_3\, TDTA_{i,t} + \beta_3 ETA_{i,t} + \beta_4 ROA_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 GDPGR + ei,t, \quad \textbf{(1)}$$

Variables and their Measurement

Bank risk is measured as Non-Performing loans to gross loans (NPLGL). A high value indicates bank has large percentage of non-performing loans in the gross loans made by the banks and thus is symbol of high risk and vice versa. Bashir and Hassan (2017) have used this proxy in their research. The effect of liquidity risk (LR) is captured by financing gap to total assets. Financing gap is obtained by subtracting customer's deposits from loans made by the bank. Its high ratio is signal of high liquidity risk and vice versa. Chen, Shen, Kao, and Yeh (2018) have employed this ratio in their research. Funding liquidity risk (FLR) is obtained by dividing total deposits to total assets in line with (Acharya & Naqvi, 2012; Khan et al., 2017). Bank capital (BC) is measured by dividing total equity to total assets (ETA) in line with (DeYoung & Jang, 2016; Khan et al., 2017). Proxy used for bank profitability (PROF) is Return on Asset (ROA). It tells that how much profit a company makes by virtue of capital invested in its assets. Bank size is measured by taking natural logarithm of total assets of bank. Similarly, study also used

the GDP growth rate (GDPGR) of country. All these three variables are being used following the work of Rokhim and Min (2018).

ANALYSIS

Descriptive Statistics

This section explains Descriptive Statistics of the study.

Table 1: Descriptive Statistics for Banks

Variable	Mean	Std. Dev.	Min	Max
FGAP%	-0.29	0.13	-0.59	0.06
TDTA%	13.79	27.64	0.4	85.73
ETA %	12.12	11.43	-2.48	78.80
ROA %	0.55	2.69	-028	5.30
SIZE	18.77	1.38	15.05	21.42
GDPGR %	3.81	1.40	1.61	5.74

The table 1 shows the central tendency, distribution and the dispersion of the variables for all sample banks. By observing table 1, it is apparent that Pakistani banks have average 10.78% non-performing loans to gross loans ratio during 2007-2017. The deviation between maximum and minimum non-performing loans to gross loans ratio is 8.74. The maximum value of non-performing loans to gross loans ratio is 89% approximately and its lowest value is zero (Standard Chartered Bank 2017). The mean value of total debt to total asset stands at 13.80% roughly. It has a high value of 85.73% and low value of .40% (NIB 2016). The normal value of funding gap ratio stands at almost -.29%. It value ranges from a high of 0.06% (NIB 2016) to low of -0.59% (BOK 2016) roughly. Equity to total assets average value stands at 11.52% with high of around 79% to low of -2.50% (BOP 2011). Return on asset has mean value of 0.56% and its highest value is 5.3% and lowest is -28.00% (BIS 2008). Size of bank is used by taking its log and it has mean value of 18.74 however its maximum and minimum value is 21.05 and 15.05. Similarly, macroeconomic variable is also reported in table 1.

DIAGNOSTIC TEST

Testing for Multicollinearity

To test multicollinearity, variance inflation factor (VIF and Pearson correlation are used. Correlation among coefficients of independent variables for panel data (2007-2017) is presented in table 2. Gujarati (2009) explained that value above 0.8 or 0.9 is the signal of multicollinearity. As can be seen from the table though some correlation does exist but it is not too high so multicollinearity is unlikely to be a problem.

Table 2: **Correlation Analysis**

	NPLGL	FGAP	TDTA	ETA	ROA	SIZE	GDPGR
NPLGL	1.00						
FGAP	0.14	1.00					
TDTA	0.27	-0.13	1.00				
ETA	0.09	0.04	-0.02	1.00			
ROA	0.01	-0.06	0.10	-0.18	1.00		
SIZE	-0.04	-0.27	0.06	-0.57	0.34	1.00	
GDPGR	-0.16	-0.24	-.004	-0.17	0.11	0.31	1.00

This research also used the variance inflation factor (VIF) to check multicollinearity. VIF values greater than 10 shows the existence of multicollinearity (Gujarati, 2009). As can be seen from the values in table 3 multicollinearity is not an issue.

Table 3: Variance Inflation Factor Risk Equation

Variable	VIF	1/VIF
FGAP	1.61	.621
TDTA	1.51	.662
ETA	1.69	.589
ROA	1.78	.561
SIZE	1.71	.582
GDPGR	1.55	.645

Mean VIF = 1.64

Testing for Homoscedasticity

Assumption of hetroskedasticity is checked by using Breusch-Pagan/Cook-Weisberg test. The results in table 4 shows the hetroskedasticity does exist in the data.

Table 4: Homoscedasticity Test Breusch- Pagan / Cool-Weisberg test Risk Equation

Chi2(1)	= 99.00
Prob>chi2	= 0.000

Testing for Endogenity

First endogenity in equation 1 is tested as banking literature expects bank liquidity risk and funding gap risk be to endogenius. Durbin and Wu–Hausman test is employed for this purpose and values reported in table 5 are highly significant. So both these variables are endogenous.

Table 5: Endogenity Testing

Regressors tested	TDTA FGAP
Instrument Variable Used	L.TDTA L.FGAP
Hausman test for endogeneity	8.990
(*p*-value)	(0.0112)

EMPIRICAL RESULTS

Liquidity Risk and Funding Liquidity Risk as determinants of bank risk:

The table 6 shows the impact of liquidity risk and funding liquidity risk on the risks of commercial banks of Pakistan during 2007-17. According to the results presented in table 6 liquidity risk has negative impact on the bank risk and it is significant at 10%. The results of this study are accepting H1. These findings are in line with outcomes of Khan et al. (2017). The same can be said funding liquidity risk and it is also highly significant at 1% accepting H2. Findings of Dahir et al. (2018) portray the same picture. So from the table 2 it is pretty much clear that banks, which face funding or liquidity problem, take less risk. In other words, banks exposed to high funding liquidity risks or liquidity risks take fewer risks to mitigate the liquidity problems. Deposit protection laws are only applicable to nationalize banks and they are very few in numbers in Pakistan, so the absence of deposit insurance in majority of Pakistan banks can be cited for this inverse relationship.

The impact of bank capital on bank risk is positive and significant at 5% also. One possible justification may be to bank capital allows cushion to take more risk. As for as the influence of bank profitability on bank risk is concerned, more profitable banks take more credit risks and vice versa. Here by virtue of extra profits banks can afford to take more risk as profitability gives them the leverage to indulge in risky activities. There is no impact of size on the bank risk taking as the coefficient is though positive, however statistically insignificant. As for as macroeconomic variable GDPGR is concerned it has negative impact on the risk taking of banks in the sample. This is against the expectations as banks are expected to take more risk in the time of growth in economy as

depicted by positive increase in GDP growth. However, though GDP growth is positive but it has grown at modest rate of 0.25% during this period. This very low value of GDP growth might have forced the banks not to indulge in risk activities.

Table 6: Impact of liquidity risk and funding liquidity risks on bank risk (NPLGL)

Variable	Coefficient	Standard Error
L.NPLGL	-0.066 ***	0.010
FGAP	-9.355 *	4.909
TDTA	-0.643 ***	0.056
ETA	0.234 **	0.118
ROA	1.663***	0.232
SIZE	1.330	0.998
GDPGR	-2.610 ***	0.177
Chi Sq	568.67	
Observations	238	
Banks	30	
Instruments	22	
Hansen test (p-value)	0.145	
AR(2)	0.393	

***, **, * Significant at the 1%, 5%, and 10% levels

In order to generalize the results, this study checks the impact of bank liquidity and funding liquidity risk on another proxy of risk taken by the banks. This other proxy of risk taken by the banks is Loans Loss Provision to Gross Loans (LLPGL). This is an expense put to one side to cover for non-performing loans. It high ratio is a signal of high risk and vice versa. Table 7 explains the results of effect of bank liquidity risk and funding liquidity on LLPGL. Here results are replicating the similar picture presented in table 7 i.e. accepting H1 and H2. Banks take less risk having high liquidity or funding liquidity risk.

Table 7: Impact of liquidity risk and funding liquidity risk on bank risk (LLPGL)

Variable	Coefficient	Standard Error
L.NPLGL	-0.066 ***	0.010
FGAP	-9.355 *	4.909
TDTA	-0.643 ***	0.056
ETA	0.234 **	0.118
ROA	1.663***	0.232
SIZE	1.330	0.998
GDPGR	-2.610 ***	0.177
Chi Sq	568.67	
Observations	238	
Banks	30	
Instruments	22	
Hansen test (p-value)	0.145	
AR(2)	0.393	

***, **, * Significant at the 1%, 5%, and 10% levels

So from the results presented in the table 6 and 7 it is pretty much clear that funding liquidity and liquidity risks have decreased the risks taken by banks. One reason of this negative impact can be usually Pakistani banks don't face liquidity problems as they have fair amount of liquid assets in their balance sheet, however, due to lack of deposit protection schemes for almost all of Pakistani banks, they might find themselves vulnerable and prone to default. So due to this fear of bankruptcy, banks having high liquidity and funding risk take less risks and vice versa.

Funding Liquidity Risk and Liquidity Risk as determinants of bank risk in Basel III:

This research also quantifies the impact of liquidity and funding liquidity risk on bank risk in Basel III-time period i.e. from 2013 to 2017. As Basel III specifically talks about liquidity risks and banks have to counter liquidity risk. By observing table 8, it is apparent there is negative impact of liquidity risk on bank risk accepting H3. As for as impact of funding liquidity risk is concerned it also reduces the risk taking of banks in our sample accepting H4. This negative effect of bank liquidity risk and bank funding liquidity risk in Basel III-time period was as Basel III specifically talks about liquidity regulations. In order to align itself with international community the State Bank of Pakistan (SBP) instructed the banks in Pakistan to implement the Basel III started from December 31, 2013 through BSD Circular # 6 of August 15, 2013 and banks acted accordingly. This might have restricted banks to take extra risk. The negative impact of bank capital on bank risk taking can be explained by the fact that low capital is signal of bank unsoundness so banks having low capital take extra risk. Similar arguments can be presented in case of profitability, where less profitable banks tend to have higher risk.

Table 8: Determinant of Bank Risk (NPLGL) in Basel III

Variable	Coefficient	Standard Error
L.NPLGL	0.733***	0.034
FGAP	-0.404***	0.115
TDTA	-0.101***	0.015
ETA	-0.073***	0.024
ROA	-1.415***	0.145
SIZE	-0.111	0.137
GDPGR	-0.423**	0.180
Chi Sq	484416.09***	
Observations	96	
Banks	26	
Instruments	25	
Hansen test (p-value)	.476	
AR(2)	0.434	

***, **, * Significant at the 1%, 5%, and 10% levels

Similarly, table 9 reports the determinants of LLPGL in Basel III-time period. Here results of this study are complementing the results reported in table 8 i.e. accepting H3 and H4.

Table 9: Determinant of Bank Risk (LLPGL) in Basel III

Variable	Coefficient	Standard Error
L.NPLGL	0.847***	0.245
FGAP	-6.642**	2.506
TDTA	-0.053**	0.023
ETA	0.003	0.027
ROA	-1.560**	0.618
SIZE	0.310	0.230
GDPGR	-0.607***	0.176
Chi Sq	118.43***	
Observations	96	
Banks	26	
Instruments	16	
Hansen test (p-value)	0.363	
AR(2)	0.151	

***, **, * Significant at the 1%, 5%, and 10% levels

Findings of table 8 and 9 report that liquidity and funding liquidity risks have reduced the risk taking in Pakistani banks during Basel III-time period. This is according to the expectations as Basel III guidelines are aimed at reducing the risks incurred by liquidity problems faced by the banks.

Liquidity Risk and Funding Liquidity Risk as determinants of bank risk after Financial Crisis:

During the implementation of Basel framework in Pakistan, world witnessed International Financial Crisis of 2008. And this crisis sowed the financial system of develop countries like USA and

UK. Pakistan being a developing country has also been affected by this. This study seeks to shed light on the impact of funding and liquidity risk on the risk taking behavior of banks during financial crisis and after it. As the no. of observation for Financial Crisis 2007-2008 are not enough to apply GMM, so time period is extended to 2008-2013 to arrive at meaningful results. The reason for choosing 2012 is that this is last year before Pakistani banks started implemented Basel III guidelines. So this time period covers both post FC and pre Basel III-time period. Study results presented in table 10 showed that there is no significant impact of funding and liquidity risk on bank risk taking post Financial Crisis and pre Basel III-time period thus rejecting H5 and H6 in both proxies of risk i.e. NPLGL and LLPGL.

Table 10: Determinant of Bank Risk in Post FC

Var	NPLGL		LLPGL	
	Co	Std Error	C	Std Error
L.DV	0.0	0.018	0.	0.169
FGAP	-11	9.522	- .011**	4.561
TDTA	0.0	0.046	0.	0.038
ETA	- .275*	0.152	0.	0.043
ROA	0.2	0.415	0.	0.097
SIZE	-1.	0.975	0. *	0.338
GDPGR	-0.	0.529	- .532*	0.284
Chi Sq	31.95***		85.02***	
Observations	118		118	
Banks	29		29	
Instrument	18		13	
Hansen test (p-va	0.655		0.340	
AR (2)	0.113		0.210	

***, **, * Significant at the 1%, 5%, and 10% levels

Results presented in table 10 point out that liquidity and funding liquidity risk did not decrease or increase the risks of Pakistani banks during Basel II or post Financial Crisis time period. One possible reason for this insignificant effect is the absenteeism of amalgamation of the domestic financial sector with the international financial sector. More over this could be due to low share of Pakistani banks in international financial markets. According to a senior Pakistani banker "We have been able to escape the affect not because of some superior more efficient safeguards that we had but because we are too weak to figure in global financial matrix"

Impact of Moderating Effect of Size

Moderating effect of bank size on the relationship between funding liquidity risk and bank risk taken.is reported in table 11. A necessary condition for expected moderator is that it should be that it must be an independent variable and then it can be used as interaction term (Keppel & Zedeck 1989). So this study employs size as moderator by using the interaction term of bank funding liquidity risk and bank size. The negative significant effect of the interaction term on the bank risk supports the notion of bank size role as moderator in decreasing the risks taken by the banks in this study. Economies of scale enjoyed by the large Pakistani banks by virtue of their size can be credited with this reduced risk taking behavior. Bashir and Hassan (2017) also report the same findings.

Table 11: Moderating effect of Size on the Relationship between Funding Liquidity Risk & Risk

Var	NPLGL		LLPGL	
	Coeff	Std Err	Coeff	Std Err
L.DV	0.474***	0.051	0.187***	0.030
FGAP	-8.00	6.732	-4.917	4.338
TDTA	0.830***	0.131	-0.704***	0.100
BC	-0.073	0.081	0.185***	0.053
ROA	-0.284	0.278	0.969***	0.151
SIZE	-1.447*	0.856	1.747***	0.418
GDPGR	-0.620**	0.297	-1.092***	0.163
FLR* SIZE	0.532***	0.185	-0.544***	0.114
Chi Sq	1826.92***		250.55***	
Observations	238		238	
Banks	30		30	
Instruments	19		22	
Hansen test (p-val	0.799		0.102	
AR (2) test	0.365		0.363	

***, **, * Significant at the 1%, 5%, and 10% levels

Moderating effect of bank size on the relationship between liquidity risk and bank risk is presented in table 12. Here findings are supporting the moderating effect of size in reducing the risks taken by the banks in case of NPLGL and it increases risk taking in LLPGL

Table 12: Moderating effect of Size on the Relationship between Liquidity Risk & Risk

Var	NPLGL		LLPGL	
	Coeff	Std Err	Coeff	Std Erro
L.DV	-0.043 ***	0.012	0.117***	0.035
FGAP	340.360***	47.22(	166.298***	30.318
TDTA	-0.504 ***	0.054	-0.341***	0.054
ETA	-0.063	0.081	0.264***	0.050
ROA	1.825***	0.274	0.694***	0.212
SIZE	-6.010***	1.622	3.880***	0.857
GDPGR	-2.841***	0.170	-0.709***	0.126
LR* SIZE	-19.085***	2.741	8.332***	1.677
Chi Sq	660.20***		264.01***	
No. of Observati	238		238	
Banks	30		30	
Instruments	22		22	
Hansen test (p-va	0.163		0.121	
AR (2) test	0.465		0.424	

***, **, * Significant at the 1%, 5%, and 10% levels

CONCLUSION

This purpose of this study is to find the effect of liquidity risk and funding liquidity risk on risks of the Pakistani banking sector during 2007-2017. The results reveal that overall liquidity risk and funding liquidity risk have reduced the bank risks taking. The results of this study highlight that liquidity risk and funding liquidity risk are effective in decreasing the risks taken of Pakistani banks during Basel III-time period. Basel III liquidity regulations can be credited with this low risk taking behavior of banks. The results of this study also point out that liquidity risk and funding liquidity risk are ineffective in increasing or decreasing the risks taken of Pakistani banks during post financial crisis of 2008 and pre Basel III-time period. This insignificant effect can be attributed to the absenteeism of amalgamation of the domestic financial sector with the international financial sector or this could be due to low share of Pakistani banks in international financial markets. Furthermore, it can be argued that Pakistani banks were not taking extra risks even before the implementation of Basel III liquidity regulations. Moreover, size is playing its role of moderator in increasing/decreasing the risks taken by Pakistani banks.

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