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CAPITAL ADEQUACY FOR RISK BASED ASSETS AND LOAN TO ASSETS LIQUIDITY IN BANKING SECTOR OF PAKISTAN

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Abstract

The present outcomes of global financial crisis have started a discussion over the bank's liquidity and its determinants. Due to mismanagement of the liquidity risk, it has become the major hurdle in the funds and capital management policy. In the current study analysis, we have conducted this work in order to examine the capital adequacy of banking sector in Pakistan for the Risk based Assets with their impact on the liquidity position over a period from 2003 to 2011. For this purpose panel data analysis has been performed and both the industry specific and firm specific factors have been considered with the TIER I capital. A conceptual model has been developed for this purpose and key findings have been explained for the financial experts to make the future decision. The outcomes of the study states the fact that there exists a significant relationship of Loan to assets ratio with both firm specific and industry specific factors like Tier I capital, funding cost for the firm, cost to income ratio and GDP growth rate over a period of study.

Keywords: Bank's Liquidity, Capital Adequacy, TIER I capital, GDP growth rate, Risk Based assets, Global Financial crisis

INTRODUCTION

In the financial markets banks are to be considered as the major player. In the recent global economic and financial crisis banks has to adjust their financial aims specially the profitability perspective in accordance with the market risk and protection against the potential outcome of the liquidity risk and uncertainty (Munteanu, 2012). The world financial risks in the banking sector which are still prevailing the market is not eliminated yet because of the systematic or non diversified risk factors and some unregulated financial innovations. From the investor's perspective, liquidity is an important factor while they transfer out the ownership of the securities (Lam & Tam, 2011). So, while for making the investment decision liquidity is considered as an important factor to be examined. Due to the lack of liquidity risk management practices in the banking sectors Latent vulnerabilities have been revealed.

The core purpose of the present study is to examine the optimal relationship in between the liquidity preferences of the banks and capital adequacy. But most importantly we must have to considered while in the earning generation position many banks has been defaulted as in the case of Lehman Brothers in 2008 just because of the mismanagement of the liquidity (Munteanu, 2012). While considering the global financial crisis, it is quite significant to deal with major determinants of liquidity and its ultimate impact on the financial performance of various banks currently working in Pakistan.

LITERATURE REVIEW

Since from the 1908s, number of studies has been conducted to define the major determinants of liquidity. In the microeconomic structure literature point of view three important determinants are price, volume and volatility (Barclay & Smith Jr, 1988; Brockman, Chung, & Pérignon, 2009). On the market liquidity information asymmetric information is very much needed phenomenon (Admati & Pfleiderer, 1988; Kyle, 1985). Such information can be segregated into micro and macro level. Some are related to firm specific information while other is purely considered as industry specific. But the most important one is the firm based information which encourages information based trade (Bushman, Dutta, Hughes, & Indjejikian, 1997). They also stated that through firm specific information such disclosure must have some influence on the liquidity.

From the time of global financial crisis of 2008, which has got the global attention, numerous studies have been conducted on the core concept of liquidity risk in the financial institutions, especially in the banking sector. The fundamental causes of the financial calamity which has created a disturbance for whole financial sector of the global economy, were observed by the (Eichengreen, Mody, Nedeljkovic, & Sarno, 2012). At the same point in time

the core implications for the risk development in this time duration were explained by (Aiyar, 2011; Cornett, McNutt, Strahan, & Tehranian, 2011). Lovin (2013) has explained the liquidity risk has been significantly increased in the year 2008 in both the developed and emerging markets with penalties. Researchers like (Adrian & Brunnermeier, 2011) have developed the model of COVAR in order to recognize those financial institutions which can be considered as thoroughly significant with the core consideration of liquidity risk exposure of the institutions with the various other factors.

Earlier studies which were related to the determinants of liquidity in the banking sector were not in wide range and have provided a limited number of works specifically considering the interbank or more precisely called the internal factors and external determinants known as the macroeconomic variables (Munteanu, 2012). In the study of (Valla, Saes-Escorbiac, & TIESSET, 2006) have explained the negative correlation with the Gross domestic product's real growth and liquidity and with the element of net interest margin as well. in the previous decade study of has proved the capital adequacy ratio as a positive indicator of the liquidity, and the interest rate as well which cause an increase in the susceptibility with the insignificant or more precisely known as the nominal value of the loan (Bunda & Desquilbet, 2008).

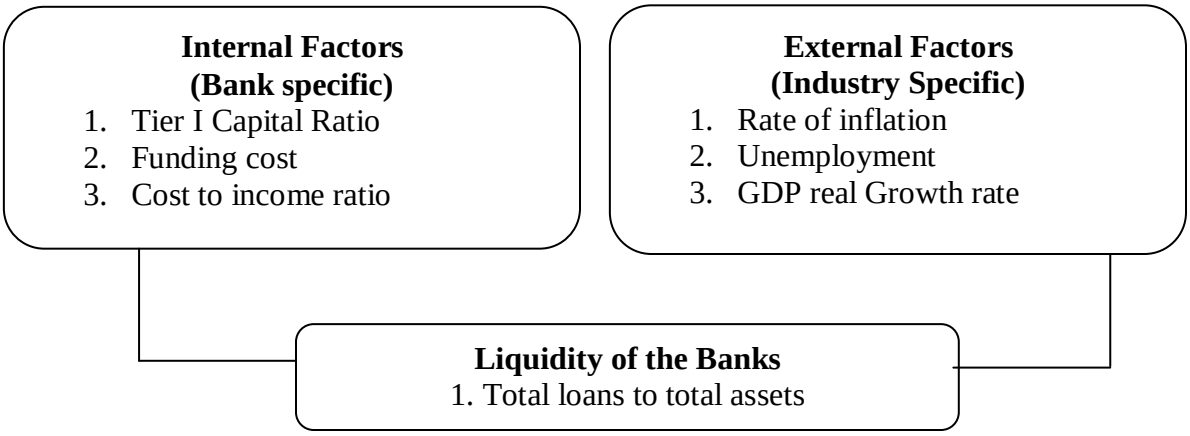
At the same time in the study of (Lucchetta, 2007) has given the confirmation about the lending capacity of the European banks which is directly related to the liquidity of the bank. Meanwhile the low level of credit risk of the bank will leads to the higher position in terms of liquidity where the credit risk of is measured as the loan loss provision and net interest revenue over a period of time. in the study of (Rauch, Steffen, Hackethal, & Tyrell, 2009) the core concept of liquidity is associated with monetary policy, interest rate and level of unemployment in the German Economy. Sample is selected for the state owned saving banks and outcomes have demonstrated that liquidity of these banks is negatively related to the described set of the factors.

RESEARCH FRAMEWORK

Diagram below present the various internal so called banks specific and external/macroeconomic / industry specific factors over a period of study. All these factors are to be considered as the major explanatory variables for defining the liquidity position of the banking firms.

However the level of liquidity for the selected banking firms is measured through with the help of total loans of the firms or total borrowings to total assets of the business.

Figure 1: Liquidity Determinants Model



RESEARCH METHODOLOGY

The sources of the data collection for the selected set of the major explanatory and explained variables are through official websites of the banks and published annual reports over the period of the study for the bank specific so called internal factors and for the industry specific factors is world development indicators (WDI). The time period for the study is from the year 2003 to 2011.

Econometric Model

In Present study analysis while determining the various measures of banking industry liquidity as dependent variables and both internal and external factors from the selected set of independent variable. The simple and easy to understand regression equation for the pooled data sets of 17 Banking firms over 2003 to 2011 which is quite unrestricted and highly flexible having distinct slope coefficients and parameters for each period of the study observed our cross sectional units over time series period is as under:

$$\boldsymbol{y_{it} = \beta 1_{it} + \beta 2_{it} x 2_{it} + \beta 3_{it} x 3_{it} + \cdots\cdots \beta N_{it} x N_{it} + e_i} \qquad \textbf{\textit{Equ}.1.0}$$

Where, y_{it} denotes the dependent variable of the present study which is liquidity of the banking firms over a period of time *t*, and the intercept terms $\beta 1_{it} \beta 2_{it} \beta 3_{it} \beta N_{it}$ for the selected set of independent variables and the term $x2_{it} x3_{it} xN_{it}$ indicates the independent variables.

EMPIRICAL RESULTS AND DISCUSSIONS

Table1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
LOANASET	152	0.7856771	0.3083	0	1.329529
TIER I	153	10.50436	11.881	0	78.7786
FUNDINGCOST	152	3.73E+16	5.6523	0	1.28E+18
CIR	151	52.40006	23.233	0	121.613
GDPGR	138	5.060386	1.9866	0	7.667304
CPIINF	150	10.59195	4.7681	0	20.28612
UNEMP	153	5.955555	1.0828	5	7.7

Table above describe the outcomes of descriptive statistic of the study. Here we can see that the mean value for cost to income ratio is maximum which is 52.4006 and loan to assets ratio has a minimum value of mean which is .1084157. The value for the standard deviation is min for Loan to Total Assets ratio which is .3083. The min value for majority of the variables is zero while the maximum value is 20.28612.

Table 2: Correlation Matrix

	LOANASET	TIER I	FNDCOST	CIR	GDPGR	CPI	UNEMP
LOANASET	1						
TIER I	-0.1815	1					
	0.0252**						
FNDCOST	-0.0805	-0.1191	1				
	0.3258	0.1438					
CIR	0.0698	0.3774	-0.1281	1			
	0.3947	0.000***	0.1169				
GDPGR	0.0957	-0.117	-0.0359	-0.3047	1		
	0.266	0.1716	0.6767	0.003***			
CPI	-0.0626	0.115	0.0656	0.2761	-0.7123	1	
	0.4479	0.1612	0.4253	0.007***	0.000***		
UNEMP	0.2167	-0.1484	-0.0864	-0.4034	0.6568	-0.7208	1
	0.0073***	0.0672*	0.2901	0.0000***	0.0000***	0.0000***	

, **, * demonstrate that correlation is significant at 10, 05 and 01 % respectively*

Before going for the further analysis it is going obvious to check the level of correlation between the selected set of variables; the problem of multicolinearity. Table above describe the correlation matrix between all the major variables which were selected for the present study analysis. From the above table it can be seen that there is no high degree of correlation between all the selected set of variables of the study. So, we have selected all the variables for the further analysis. In order to provide the supplementary evidence regarding correlation analysis, variance inflation factor has also been calculated which is presented below in the table.

Table 3: VIF Value

Variable	**VIF**	**1/VIF**
CPI	2.63	0.380867
UNEMP	2.35	0.425067
GDGGR	2.26	0.44164
TIER I	1.04	0.958495
FUNDINGCOST	1.03	0.969878
Mean VIF	1.86	

The value of variance inflation factor (VIF) is not more than 05 in individual cases and in the overall mean value so we have included all the variables for the further panel data analysis.

Table 4: Regression Outcomes

	LSDVM		**FEM**		**REM**		**PRM**	
LOANASET	**Coef.**	**P>t**	**Coef.**	**P>t**	**Coef.**	**P>t**	**Coef.**	**P>t**
TIER I	-0.00402	0.224	-0.00402	0.224	-0.0038448	0.014**	-0.00384	0.015**
FUNDINGCOST	6.13E-21	0.981	6.13E-21	0.981	8.35E-20	0.0507*	8.35E-20	0.0508*
CIR	0.001942	0.146	0.001942	0.146	1.93E-03	2.70E-02**	0.001933	0.029**
GDPGR	0.017894	0.119	0.017894	0.119	0.0209812	0.063*	0.020981	0.065*
CPIINF	0.005166	0.291	0.005166	0.291	0.0058186	0.232	0.005819	0.235
UNEMP	0.003985	0.873	0.003985	0.873	0.0051237	0.819	0.005124	0.819
_cons	0.559579	0.012	0.640198	0.007	0.6070591	0.001	0.607059	0.001

, **, * demonstrate that coeffiecnts value is significant at 10, 05 and 01 % respectively*

Table above describe the various outcomes of panel data analysis for dependent variable which is loan to total assets ratio of banking firms currently working in Pakistan. The results in the above table demonstrate the outcomes for least square dummy variable model so called LSDVM, Fixed effect model FEM, Random Effect Model REM and pooled regression Model

PRM. The outcomes revealed the fact that among all the models, the coefficient value of TIER I ratio, Cost to income ratio, Gross Domestic Product growth rate GDPGR are significant at 05 % and 01 respectively. Such findings are explaining the fact that the all these explanatory variables have a significant impact of in determining the loan to total asset ratio of the business over a period of time.

The coefficient value for TIER I ratio is -.00384 which is significant at 05 % level, explicating the fact that one unit change in the value of TEIR I ratio will leads towards the significant and negative change in the value of Loan to total asset ratio of banking sector which is the measuring tool of liquidity of banking firms. The overall outcomes of the above table reveals the fact that the major determinants towards the liquidity or the marketability of the investment which cannot be sold or bought to prevent the loss in the business are TIER I ratio (the measurement of bank's financial strength from regular perspective), funding cost, cost to income ratio and Gross domestic product growth rate over a period of study. For this purpose management of the business should consider the above factors significantly while deciding the liquidity determinants from loan to total assets perspective.

CONCLUSION

From the above discussion it is quite clear that discussing the determinants of liquidity is not an independent decision. It is affected by number of factors. The key factors which have a significant contribution both from industry specific and firm specific are the TIER I ratio, funding cost, cost to income ratio and Gross Domestic Product Growth rate. It is under observation that from the industry specific only the GDP Growth rate has its momentous impact on the cash and cash equivalent to total assets ratio for the banking firms. So the key financial experts and decision makers must have to consider the above mention factors which are explaining the determinants for the banking sector in both the developed and developing economy. For the further future analysis, we recommend to extend the sample size of the study to the other similar financial institutions which are working in the economy.

REFERENCES

Admati, A. R., & Pfleiderer, P. (1988). A theory of intraday patterns: Volume and price variability. *Review of Financial studies, 1*(1), 3-40.

Adrian, T., & Brunnermeier, M. K. (2011). CoVaR: National Bureau of Economic Research.

Aiyar, S. (2011). How Did the Crisis in International Funding Markets Affect Bank Lending?: Balance Sheet Evidence from the United Kingdom: Bank of England.

Barclay, M. J., & Smith Jr, C. W. (1988). Corporate payout policy: Cash dividends versus open-market repurchases. *Journal of Financial Economics, 22*(1), 61-82.

Brockman, P., Chung, D. Y., & Pérignon, C. (2009). Commonality in liquidity: A global perspective. *Journal of Financial and Quantitative Analysis, 44*(04), 851-882.

Bunda, I., & Desquilbet, J.-B. (2008). The bank liquidity smile across exchange rate regimes. *International Economic Journal, 22*(3), 361-386.

Bushman, R., Dutta, S., Hughes, J., & Indjejikian, R. (1997). Earnings Announcements and Market Depth*. *Contemporary Accounting Research, 14*(1), 43-68.

Cornett, M. M., McNutt, J. J., Strahan, P. E., & Tehranian, H. (2011). Liquidity risk management and credit supply in the financial crisis. *Journal of Financial Economics, 101*(2), 297-312.

Eichengreen, B., Mody, A., Nedeljkovic, M., & Sarno, L. (2012). How the subprime crisis went global: Evidence from bank credit default swap spreads. *Journal of International Money and Finance, 31*(5), 1299-1318.

Kyle, A. S. (1985). Continuous auctions and insider trading. *Econometrica: Journal of the Econometric Society*, 1315-1335.

Lam, K. S., & Tam, L. H. (2011). Liquidity and asset pricing: Evidence from the Hong Kong stock market. *Journal of Banking & Finance, 35*(9), 2217-2230.

Lovin, H. (2013). Determinants of the Liquidity in Romanian Interbank Deposits Market. *Procedia Economics and Finance, 5*, 512-518.

Lucchetta, M. (2007). What do data say about monetary policy, bank liquidity and bank risk taking? *Economic Notes, 36*(2), 189-203.

Munteanu, I. (2012). Bank liquidity and its determinants in Romania. *Procedia Economics and Finance, 3*, 993-998.

Rauch, C., Steffen, S., Hackethal, A., & Tyrell, M. (2009). Determinants of bank liquidity creation.

Valla, N., Saes-Escorbiac, B., & TIESSET, M. (2006). Bank liquidity and financial stability. *Banque de France Financial Stability Review*, 89-104.