The Effect of Liquidity Risk Management on Bank Performance: Evidence from Indian Banking Sector

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Abstract

The concept of liquidity management by the commercial bank indicates the capability of the bank to finance its commitments as and when it gets due, comprising of investment and lending obligations, withdrawals, and other ensued burdens. The effectiveness and efficiency of the banks are majorly the function of its management of the liquidity. Therefore, for managing the short-term obligations, it is of vital importance for the banks to keep a desired liquidity ratio. The decisive objective is to maintain desired balance between liquidity and profitability. Against this backdrop, a sincere effort is being made in this research paper to study the impact on the profitability owing to the prudent liquidity management by the Indian banking sector. Accordingly, various banks from the board spectrum were selected as per the need of the research study comprising of public sector banks (27), private banks (20) and foreign banks (15). The independent variable includes Credit-Deposit Ratio (CRDR), Investment-Deposit Ratio and Cash-Deposit Ratio (CDR), which indicates the Banks' management of liquidity. On the other hand, for gauging the profitability, Return on Equity (ROE) and Return on Assets (ROA) are taken as proxy. Based on the research, statistically no significant relationship found between the liquidity of all the types of banks operating in India and profitability, factoring in all the variables. In the research, coefficients of the regressors found to be negative are for all the types of banks (Public, Private and Foreign). Nonetheless, the relationship lacks statistical significance.

Keywords: Liquidity Management, Cash-Deposit Ratio,Credit-Deposit Ratio, Investment-Deposit Ratio, Return on Assets and Return on Equity.

JEL Classification: E58, E51,E52,G21,G28

Introduction

The financial crisis of 2008 has taught several lessons to policymakers and financial advisors regarding the prudent management of liquidity risk of financial institutions and commercial banks are no exceptions. It is of wider perception that the banks failed to appreciate the criticality of

management of the liquidity risk and possible repercussions of such risk on them and on the whole of the financial system (Gauthier, et al. 2010). It has been recommended by the advisors and policymakers that in order to insulate themselves from the potential and possible liquidity risk, the quantum of liquid assets held by the banks in the past shall be increased. The recommendations of the Basel Committee on Banking Supervision (2010) are the culmination of the support and desire expressed from various quarters to have common and appropriate standards and measures for the management of the liquidity risk.

The liquidity management in the bank indicates the capability to fund its commitments as and when they are due, which comprises ofinvestment and lending obligations, deposits, withdrawals, and other accrued liabilities (Amengor, 2010).The liquidity risk is the reflection of bank'sfailure to meet its obligations at the time of their maturity, although it does not affect the financial health adversely. Nonetheless, for cutting down on the possibility of development of any adverse condition, banks need to be spot on in terms of its ability to manage the liquidity risk and meets its obligations in the timely manner. Hence, the effective and efficient liquidity risk management by a banking entity strides towards bringing down the possibility of development of an untoward event through the enhancement in its capability to meet the obligations in timely and orderly manner. This carries a special importance from the virtue of the fact that liquidity crisis have generally been systemic in nature, where the failure of even one banking institution has wider ramification on the whole of banking sector.

There are two major interrelated strands of the bank liquidity. First, the liability (or cash) liquidity, indicating the ability of a bank to arrange for funds from the market. Second, asset (or market) liquidity refers the chance of bank selling its assets. The significance of the banking institutions has been well appreciated and documented by the virtue of their ability to present an effective and efficient mechanism to mobilize and channelise the resources from relatively less vital to more productive and desirable investments, thereby ensuring and enhancing the overall effectiveness of whole of the banking system in a holistic manner (Wilner,2000).

The financial institutions in their critically important role as financial intermediaries, have provided an effective network between the savers (lenders) and borrowers. The banking industry has a decisive role in achieving the desired rate of economic growth, holistic improvement in the financial sector and most importantly in employment generation in the economy, in the current era of hyper competitiveness.

The banking sector in India has emerged as the largest employer. For ensuring the optimal level of profitability, there is a strong need of high and appropriate level of analysis. Liquidity has been an important indicator of evaluation of the overall effectiveness of the banks. It is utmost importance for the banks to meet the short-term financial obligation, which can achieve by maintaining a balanced and optimal liquidity ratio. Owing the decisive impact of liquidity on banks' day to day operations, it is essential to gauge the same by the external and internal analysts in an appropriate manner.

In order to maintain tradeoff, the liquidity management by a bank plays the decisive role. The task of leveraging liquidity has become challenging and complicated in the present exceedingly competitiveness scheme of things. The onus lies on the concerned companies to take the decisions of the dynamic nature in order to manage their assets in an effective and efficient manner. Against the given background, it vouches for undertaking a comprehensive research study for the purpose of investigation and finally recommending the possible solutions to the banking sector companies to manage and enhance the level of their profitability. With this objective, the current research paper has made an attempt to understand and analyze the relationship between profitability and liquidity and how profitability is impacted by the liquidity management in reference to the banking sector.

Importance of the study

As uncertainty during the last financial crisis led financial institutions to disperse, a lot of banks end up falling short to meet their financial obligations owing to the shortage of cash with them. Resultantly, many banks in a range of countries either defaulted on their liabilities or left with no

other option but to be merged. Given the criticality of the situation and overall existential crisis looming over the banking sector, the concerned authorities of various countries (including India) pumped in sizeable volume of liquidity in order to stabilize the financial system. In spite of the financial crisis, in a sense the banks fell short of giving the due importance to the management of the liquidity risk and repercussions of the same on the particular bank and overall financial system in general. Given both the goals of critical importance- profitability and liquidity, in the present research study, the primary objective is to study the effect of management of liquidity on the banks' performance.

Review of Literature

D'Souza (2002) found that in the late nineties in comparison to the banks from private and foreign sector, the profitability of the public banks has been higher in relative terms. Nayak (2001) and Mathur (2002) and pointed out that the private sector banks have done better as compared to the public banks only because of the legal support available to the private sector banking, which insulates them from the extraneous pressure and their least participation in the governments' socio-economic schemes and policies. Vijayakumar (2002) opined that the inability of the public banks to utilise their financial resources in a profitable manner has been the major cause of falling gross profit among these banks in the pre reform era. On the other hand,Ketkar and Ketkar (2009) and Bhide, Prasad and Gosh (2002) have asserted that the banking reforms have desired impact on profitability of the public banks, although owing to the lack of risk management system and Priority Sector Lending (PSL) mandate of the RBI, remained the major roadblock in achieving the optimal level of profitability and efficiency. Chauduri (2002) asserted, "The Indian public sector banks are neither very weak nor strong, nonetheless they do not have additional capability to take on the load of policies of the government". Patnaik and Patnaik (2005) asserted that in comparison to the other banks in the public sector, State Bank of India has better profitability. In another comparative study between public and private sector banks by Mohanty and Mehrotra (2018) observed that liquidity risk has s negative but insignificant effect on profitability of banks irrespective of the bank type.

Taking a divergent view on the same, Kaur and Kapoor (2007) emphasised "The efficiency was relatively better for the Nationalised Banks as compared to the SBI and associates banks of the SBI Group". Further, Guruswamy (2012) pointed out "The performance of the SBI and associated banks in terms of profitability, it is reflected that the State Bank of Hyderabad, State Bank of Bikaner, State Bank of Patiala and State Bank of Indore are most dynamic when it comes to profitability in comparison to SBI". Badola and Verma (2006) pointed out, "Explanatory power of spread, non-interest income, provisions and contingencies, operating expenses are significant while credit deposit ratio, NPA as percentage to net advances and business per employee are found with low explanatory power". Bordeleau and Graham (2010), administering sample of banks from Canada and U.S.A., ceteris paribas concluded that those banks holding some liquid assets have, in general, enjoyed improvement in profitability; although this hold true up to a point as after that the banks holding more liquid assets experienced fall in profitability. Finally, it is emphasised that such relationship diverges based on the economic conditions and banks' business model.

Shahchera (2012), studied the sample of the listed banks of the Iran through the application of panel data pertaining the period between 2002 and 2009, and established a nonlinear relationship between holdings of liquid asset and profitability, grounded on an evidence. Lastly, Antwi and Boadi (2013),based on study of 7 out of 9 banks, that were registered on the Ghana Stock Exchange, during the timeframe 2005-2010; concluded "a very weak positive relationship between profitability and liquidity". Nimer, Warrad and Omari (2013), established that there is negative impact of the liquidity on the profitability as the banks having more than the desirable liquid assets has an opportunity cost attached with the same in terms of the opportunity lost to earn return on investing these financial resources elsewhere, based on the study of financial reports of the 15 banks listed at Amman Stock Exchange (ASE), Jordan for the time frame between 2005 and 2011.

Munteanu (2013), based on the study of the commercial banks of Eastern and Central European pertaining the period between 2003 and 2010 by applying the panel data,

established "a slight positive and negative impact of liquidity on both Return on Equity and Return on Asset, thereby establishing a non-linear relationship". Ibe (2013) studied the banks of Nigeria and concluded that there is a significant association between cash and short term fund on the one hand and the profitability of the banks on other hand. Mohanty and Sarkar (2020) conducted a study in PSU banks in India during 2012–2013 to 2016–2017 and concluded, "The liquidity risk has a significant negative affect on profitability of the PSU banks".

Research Questions and hypotheses Development

The chieffunction of banks is to arrange for collecting the money (deposits) from the public and supported by its own financial resource to meet the financial needs of customers in a timely manner, to meet the expenses associated with running the business, and payment of the interest to the depositors.

In order to undertake these activities, the banks need to balance between maintaining the desired level of liquidity and earn the optimal profit from its operations, which is far more crucial as compared to other businesses. However, there lies contradiction between these concepts- liquidity and profitability as if a bank chases more profitability it has to bring down its liquidity and if it goes for higher liquidity it has to compromise on profitability.

Based on the review of the literature in holistic and rigorous manner in the given domain of banks, the association between profitability and liquidity risk turned out to be conflicting in nature. Nonetheless, the researchers are divided in their opinion about the relationship between profitability and liquidity as some pointed a positive relationship between these variables and other asserted on the negative relationship.

The present research study is driven by two major reasons: paucity of reliable and consistent evidence owing to differing opinion and mixed conclusions in the literature and lack of comprehensive research in the Indian perspective.

Accordingly, the following research questions are attempted to be gauged in the research study:

(i) Does any relationship exist between liquidity management &financial performance of banks?

(ii) Does the liquidity management effects the financial performance of banks?

Based on the review of extant literature, the following hypotheses were developed;

H01: There is no significant relationship between liquidity management and profitability of public, private and foreign sector banks.

H02: There is no significance difference in the effect of liquidity management on financial performance of three different bank groups in India.

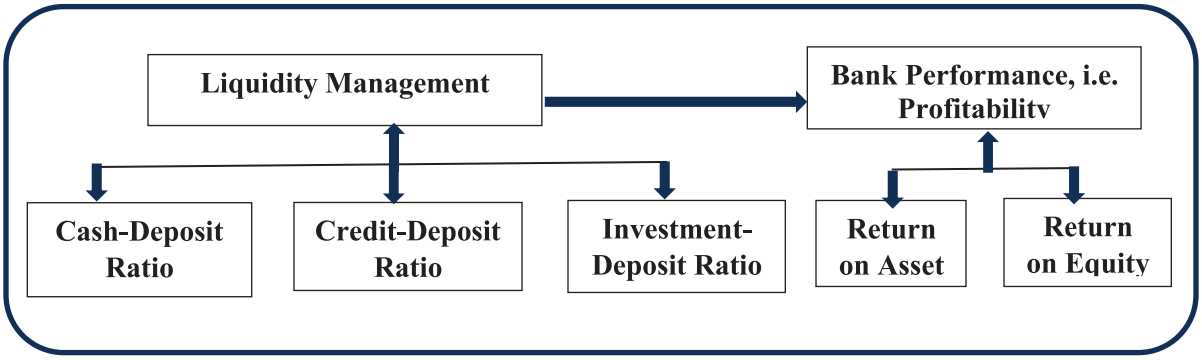
Objectives of the study

- To study the relationship between management of liquidity risk and financial performance of different banks in India
- To scrutinize the impact of liquidity risk management on financial performance of three different bank groups in India

Research Methodology

Analytical Framework of Research

Liquidity of bank refers to reserves of cash, securities, bank's ability to convert an asset into cash, and unused bank lines of credit. Liquidity must be adequate to meet all maturing unsecured debt obligations due within a one-year time horizon. Despite different approaches that can be used to analyze bank's liquidity, the following are the key ratios that can be used to examine bank's liquidity: Cash-Deposit Ratio, Credit-Deposit Ratio and Investment-Deposit Ratio and whether they could be converted quickly to cover redemptions (Credit and Finance Risk Analysis, 2012). On the other hand, profitability of the bank determines its ability to increase capital (through retained earnings), support the future growth of assets, absorb loan losses and provide return to investors. The key financial ratios that are used in assessing the profitability of a bank include: Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin to Total Assets, and Operating Profit to Total Assets (Credit and Finance Risk Analysis, 2012). The conceptual framework of the research is shown in Figure 1 below:



Explanations of Ratio Used in the Study

Cash - Deposit Ratio (CDR): It suggests the ability of a bank to lend from the deposits it has mobilized. It is determined by - Cash in hand + Balances with RBI/ Total deposits. Ideally, this ratio should be little above cash reserve ratio.

Credit-Deposit Ratio (CRDR): It indicates the capacity of a bank to create the loan assets out of the deposits received by it. It is depicted by – Advances/Deposits. The tradition & prudence indicate that the ideal CRDR is between 80 and 90%.

Investment-Deposit Ratio (IDR): It is the total of all the investment done by a bank in other sources like share market, banks, loans and advances out of the total deposits received by the bank. Currently, banks are maintaining a relatively high margin of investment to deposit ratio to safeguard profitability position of banks due to excessive volatility in bond prices.

Return on Assets (ROA): It is reflects the profitability of a bank in reference to the total assets held by it. It is calculated as- Annual Earnings/ Total Assets.

Return on Equity (ROE): It scales the profit generated by a bank on the owners' capital. It is determined by dividing Net income by Shareholders' equity.

Sampling Technique and Study Design

On the website of the RBI as on December 2016, in total there are 93 scheduled commercial banks are mentioned, covering all types of the banks (source: www.rbi.org.in). In the research study, 27 public sector banks,20 private sector banks and 15 foreign sector bankswere taken into consideration. The purposive sampling method has been resorted to for the present research. The independent variable for representing the liquidity management of the banks are - CDR, CRDR and IDR. On the other hand, the dependent variable for denoting the banks' profitability are- ROA) and ROE.

Data Source & Reference Period

The research study utilized the secondary data, collected from the publications of the RBI like "Annual Report on Trends and Progress of Banking in India", "Annual Reports of RBI", other sources chiefly including RBI Bulletin, IBA Report, etc.

The research confined itself to the time frame between 2008-09 and 2017-18.Once the data was collected, the same was compiled and analyzed as per the need and objectives of the research study. It is worth mentioning that the secondary data is considered to be accurate, free of biasness and offers prospect for replication.

Tools Used in the Study for Analysis

In the study, in reference to the banks, CDR, CRDR, and IDR are representing the liquidity management and slated as independent variable. On the other hand, ROA and ROE are proxy variables for denoting the profitability.

For analysing the association between the variables, correlation analysis has been resorted to. Furthermore, for measuring the effect of liquidity management on profitability, regression models are used.

Regression Model, in reference to the Public Banks, for measuring effect of liquidity management on profitability

$$Y_1 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$Y_2 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Regression Model, in reference to the Private Sector Banks, for measuring effect of liquidity management on profitability

$$Y_1 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$
$$Y_2 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Regression Model, in reference to the Foreign Banks, for measuring effect of liquidity management on profitability

$$Y_1 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$
$$Y_2 = \alpha + \beta.X_1 + \beta.X_2 + \beta.X_3 + \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

where, Y1(ROA) and Y2(ROE) are the predictor variables. On the other hand, X1 (CDR), X2 (CRDR)and X3 (IDR) are criterion variables. The test of significance at overall level were determined based on F-test and Multiple Coefficient of Determination (R2) along with Adjusted R2to gauge the explanatory power.

Result and Discussion

There are three parts covering the results and associated discussion. The first part presents the liquidity & profitability of the selected Banks centered on relevant financial ratios covering the period between 2008-09 and 2017-18. The second part concerned with the explanation of the relationship between the variables. The third part explains as to how the profitability of the banks (Public and Private)has been impacted by the liquidity management.

The descriptive statistics is shown in Table below.

Table-1: Descriptive Statistics

Measures/ Variables	Range	Minimum	Maximum	Mean	Std. Deviation	Coefficient of Variation
Public Sector Banks						
CDR	.74	4.86	5.60	5.360	0.306	0.057
CRDR	50.34	27.51	77.85	66.724	21.955	0.329
IDR	2.03	28.59	30.62	29.612	0.891	0.030
ROA	1.08	-0.20	0.88	0.488	0.426	0.873
ROE	18.80	-3.47	15.33	8.268	7.292	0.882
Valid N	27					
Private Sector Banks						
CDR	.87	5.33	6.20	5.836	0.372	0.064
CRDR	8.40	81.90	90.30	85.042	3.440	0.040
IDR	10.39	34.45	44.84	40.250	4.748	0.118
ROA	.18	1.50	1.68	1.598	0.079	0.049
ROE	2.65	13.81	16.46	15.496	1.051	0.068
Valid N	20					
Foreign Sector Banks						
CDR	3.19	5.18	8.37	6.7800	1.245	0.183
CRDR	12.27	79.24	91.51	83.4380	4.753	0.056
IDR	18.21	61.30	79.51	69.8940	7.848	0.112
ROA	0.38	1.54	1.92	1.7200	0.173	0.100
ROE	3.53	8.00	11.53	9.9180	1.408	0.141
Valid N						

The table indicates that criteria applied for gauging profitability- Return on Asset and Return on Equity-averaged 0.488 and 8.268 respectively for public sector banks whereas the same ratio were found to be 1.598 and 15.496 respectively in case of private counterpart and 1.72 and 9.918 respectively for foreign banks. It shows that private sector banks were best based on ROE, followed by foreign and public sector banks whereas performance of foreign banks in terms of ROA was maximum, followed by foreign and public sector banks. Further, it is interesting to note that the coefficients of variation values of profitability in case of public sector banks happened to be higher than liquidity measures, suggesting high volatility of the measures of profitability, whereas the same was not found either in private or in foreign banks.

When it comes toCDR, there is no significant difference in different groups of banks. However,when it comes to CRDR, both private & foreign banks happened to be most restrained as compared to public ones.Itcan be attributed higher IDR. In overall analysis, both the private & foreign banks have done better.

The correlation is shown in the Table below.

Table-2: Correlation between Liquidity Management & Profitability

Variables		CDR	CRDR	IDR	ROA	ROE
Public Sector Banks						
CDR	Pearson Correlation	1	-.481	-.643	-.429	-.398
	Sig. (2-tailed)		.242	.471	.507	
CRDR	Pearson Correlation	-.481	1	-.278	-.469	-.497
	Sig. (2-tailed)	.412		.650	.426	.395
IDR	Pearson Correlation	-.643	-.278	1	.749	.741
	Sig. (2-tailed)	.242	.650		.145	.152
ROA	Pearson Correlation	-.429	-.469	.749	1	.999**
	Sig. (2-tailed)	.471	.426	.145		.000
ROE	Pearson Correlation	-.398	-.497	.741	.999**	1
	Sig. (2-tailed)	.507	.395	.152	.000	
Private Sector Banks						
CDR	Pearson Correlation	1	-.052	-.097	.324	.165
	Sig. (2-tailed)		.934	.877	.594	.791
CRDR	Pearson Correlation	-.052	1	-.962**	-.328	-.787
	Sig. (2-tailed)	.934		.009	.590	.114
IDR	Pearson Correlation	-.097	-.962**	1	.080	.628
	Sig. (2-tailed)	.877	.009		.898	.257
ROA	Pearson Correlation	.324	-.328	.080	1	.819
	Sig. (2-tailed)	.594	.590	.898		.090
ROE	Pearson Correlation	.165	-.787	.628	.819	1
	Sig. (2-tailed)	.791	.114	.257	.090	
Foreign Sector Banks						
CDR	Pearson Correlation	1	.561	.791	.413	.729
	Sig. (2-tailed)		.325	.111	.489	.162
CRDR	Pearson Correlation	.561	1	.863	.664	.769
	Sig. (2-tailed)	.325		.059	.222	.129
IDR	Pearson Correlation	.791	.863	1	.356	.638
	Sig. (2-tailed)	.111	.059		.557	.247
ROA	Pearson Correlation	.489	.222	.557		.027
	Sig. (2-tailed)	5	5	5	5	5
ROE	Pearson Correlation	.729	.769	.638	.921*	1
	Sig. (2-tailed)	.162	.129	.247	.027	

** *Correlation is significant (5% LoS,2-tailed).*

The data set reflects inter-correlational values between liquidity and profitability,happened to be mixed one (+ve and -ve). The "r" values are negative however lacks significance between the variables of profitability as gauged by return on asset and liquidity variables as reflected by CDR (-0.429), CRDR (-0.469) respectively. While, the correlation between RoA and liquidity variables as gauged by IDR was (0.749), positive but statistically insignificant.

Similarly, correlation between profitability and liquidity has been negative but statistically insignificant. While the correlation between RoA and liquidity variables as indicated by Investment-Deposit Ratio was (0.741), positive but statistically insignificant. While, for private banks, the 'r' values were positive but statistically insignificant between variable of profitability as indicated by return on asset and liquidity variables as measured by

Cash-Deposit Ratio (0.324), Investment-Deposit Ratio (0.80) respectively. On the other hand, the correlation between ROA and liquidity variables was negative (-0.328), but statistically insignificant.

Likewise, the correlation between profitability and liquidity were positive but statistically insignificant. While the correlation between RoA and liquidity variables as gauged by CRDR was negative (-0.787), but statistically insignificant.

Thus, the null hypotheses gets accepted. The findings of thepresent research are in conformity with findings of other similar studies by Niresh A.J. (2012) and Mwizarubi, Singh and Prusty (2015).

Effect of liquidity management on profitability

Distinct regression models have been applied for gauging the same.

The regression model summary is shown in Table below.

Table 3: Model Summary

Public sector Banks		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	15.197	28.340	28.340	.687
	CDR	-1.632	1.882	-.563	.545
	CRDR	-.022	.021	-1.040	.488
	IDR	-.152	.591	-.258	.839
R =.0.890, R Squared = 0.791, Adj. R Squared =0.165, F Value = 1.263 at p value = 0.561					
Private sector Banks		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	11.474	4.224	2.716	.225
	CDR	-.044	.088	-.504	.703
	CRDR	-.085	.035	-1.472	.245
	IDR	-.059	.025	-1.330	.258
R =.0.936, R Squared = 0.876, Adj. R Squared =0.504, F Value = 1.353 at p value = 0.439					
Foreign sector Banks		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	11.745	1.136	1.536	.367
	CDR	-.133	.073	-1.824	.319
	CRDR	-.068	.023	-2.923	.210
	IDR	-.044	.019	-2.330	.258
R =.0.956, R Squared = 0.913, Adj. R Squared =0.653, F Value = 1.512 at p value = 0.369					

The coefficients of the regressors' pertaining topredictor variables were negative, pointing out a negative relationship between return on asset (measure of profitability) and the explanatory variables (measures of liquidity) for public & private banks. Nevertheless, the absolute t-values for both the explanatory variables were less than 1.96 (5% significance level) suggestingabsence of significance.

Further, the two-tail p-values were greater than 0.05, reflectingabsence of significance. Finally, when it comes to the public sector banks, the F calculated value happened to be less than the table value (more than 0.05 significance).

likewise, private banks, the F calculated value also happened to be less than the table value. Therefore, significant relationship absent statistically between the profitability &liquidity management.

The coefficients of regressors were negative for all types of banks. However, the relationship lacks significance(5% level of significance).

The summary of the regression model is shown in Table below.

Table 4: Model Summary

Public sector Bank		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	250.558	490.445	.511	.699
	CDR	-26.961	32.566	-.828	.560
	CRDR	-.374	.362	-1.031	.490
	IDR	-2.460	10.220	-.241	.850
R =.0.887, R Squared = 0.787, Adj. R Squared =0.147, F Value = 1.230 at p value = 0.566					
Private sector Bank		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	108.976	59.219	1.840	.317
	CDR	-.502	1.233	-.407	.754
	CRDR	-.849	.484	-1.753	.330
	IDR	-.456	.352	-1.296	.418
R =.0.929, R Squared = 0.864, Adj. R Squared =0.455, F Value = 1.933 at p value = 0.459					
Foreign sector Banks		**Coefficients**		**'t' value**	**Significance**
		B	**Std. Error**		
1	(Constant)	14.518	7.945	1.827	.319
	CDR	-1.176	.512	-2.299	.261
	CRDR	-.400	.162	-2.467	.245
	IDR	-.243	.133	-1.823	.319
R =.0.967, R Squared = 0.935, Adj. R Squared =0.741 , F Value = 1.824 at p value = 0.320					

The coefficients of the regressors' pertaining to predictor variables happened to be negative, forthe public and private banks. Further, absolute t-values suggested absence of significance. The two-tail p-values indicatedabsence of significance.

Finally, when it comes to the public sector banks, the F calculated was less than the table value. Likewise, private banks, the calculated value of F calculatedwas less than the table value (5% Level of Significance).

Based on the given results, it can be inferred that significant relationship does not exist between profitability & liquidity management in both Public and Private banks. The coefficients of the regressors are negative forall types of banks, although lacking significance(at 95%confidence level).

Conclusions

The profitability and liquidity trade-off has been a critical issue and the same has been deliberated upon by the researchers, practitioners, and analysts at length as both of them are major facets of any business. They are even of much greater importance for the banking sector. The inferential statistical tests indicates that the relationship between the variables lacked significance based on factoring in the relevant variables for all types of commercial banks in India. Therefore, the profitability can be raised without upsetting the liquidity and the other way round. Nonetheless, it is not a certaintyas the prevailing scenario take a turn and change, more specifically in the domain of macroeconomic environment which are beyond the control of the banking industry. There lies a prominent opportunity for the researchers to undertake the study using a different time frame-frame and sample, which might throw up interesting results.

Implications for future research

The research study could not able to institute a relationship of significant nature between profitability and liquidity. It is

hoped research endeavors in future involving more variables covering diverse time-frame may end up concluding on presence of the relationship. The present research study is critical from the perspective of the major stakeholders of the banking industry- depositors, regulatory bodies and shareholders. The shareholder strives for having more profitability as the same would lead to the wealth maximization. On the different scale, the depositors would be more inclined towards higher liquidity to facilitate on time and urgent withdrawal from the banks. Resultantly, it would open up novel opportunities in future for research endeavors in this domain.

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