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Liquidity analysis in Indian banking sector: A case study of Punjab national bank

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Abstract
Banking sector is vital financial intermediary in mobilization of public savings (deposits) and effective channelization of mobilized public funds in economy through advances and loans. Banking sector deals with large public funds which are characterized of both demand and time maturity period. In Indian banking sector nearly half of bank liabilities are in the form of current and saving deposits which indicates need of high liquid assets to meet demand and short period liabilities. In contrast, in bank assets more assets are in the form of less liquid assets (medium and long term loans and advances) which indicates mismatch between assets and liabilities management. This mismatch between assets and liabilities adversely affects cash flows, liquidity and ultimately financial strength of the banks. Therefore, compared to corporate sector, banks need to keep high liquid assets line with the proportion of short maturity period liabilities. On the other hand, maintenance of high liquid assets is adversely affects firms growth and profitability. Therefore, a tradeoff between liquidity, growth and profitability is a challenging task to every professional fund managers. Analysis of liquidity in banks sector is a differ compare to liquidity analysis of corporate and other sectors in the economy. Therefore, in the present study we analyzed liquidity position of Punjab national bank for period of ten years (2010-2019). The study found that Punjab national bank cash flows are reported downfall during the study period. This is due to the reason that Punjab national banks has huge outflow of cash in form of investment, advances and other assets and repayment of borrowing at large quantity. Similarly, bank financial strength is not at acceptable level during the study period which indicates its inability to meet additional demand of loan and liquid needs. In contrast, liquidity position of Punjab national bank is at satisfactory level during the study period.

Keywords: financial, Banking, additional, Punjab, Indian banking

1. Introduction

Banking sector is vital financial intermediaries in mobilization of public savings (deposits) and effective channelization of mobilized public funds in economy through advances and loans. Banking sector deals with large public funds which are characterized of both demand and time maturity period. In Indian banking sector nearly half of bank liabilities are in the form of current and saving deposits which indicates need of high liquid assets to meet demand and short period liabilities. In contrast, to this in bank assets more assets are in the form of less liquid assets (medium and long term loans and advances) which indicates mismatch between assets and liabilities management. This mismatch between assets and liabilities adversely affects cash flows, liquidity and ultimately financial strength of the banks. Therefore, compared to corporate sector, banks need to keep high liquid assets line with the proportion of short maturity period liabilities. On the other hand, maintenance of high liquid assets is adversely affects firms growth and profitability. Therefore, a tradeoff between liquidity, growth and profitability is a challenging task to every financial manager in the firm. Analysis of liquidity in banks sector is a differ compare to liquidity analysis of corporate and other sectors in the economy. Therefore, in the present study we analyzed liquidity position of Punjab national bank for period of ten years (2010-2019).

2. Review of Literature

(2018) [1] Taqi and Mustafa have done a comparative empirical Analysis on financial performance of Punjab and HDFC banks in India during 2007-2016. In the study he measured financial performance in parameters of credit deposit ratio, capital to deposit ratio, business per employee, profit per employee, Return on equity, Return on assets. The study revealed that Punjab national bank is financial sound than HDFC bank due to strong banking network, huge advances, rural banking and profitability. (2016) [2] Butaru has emphazied on the risk management practices in six major banks for credit card business during 2009 to 2013. In the study to anticipate the delinquency level in the credit card business he combined the variables extracted from consumer trade line, credit bureau and macroeconomics through using machine-learning technique. In the study he also measured the credit risk and loss probability through appropriate tools and discussed the drivers of delinquency in banking sector. The study observed differentiation in risk affecting factors, sensitiveness and anticipating factors of delinquency among all selected banks. The study also observed variation in risk management practices and efficiency levels among all selected banks. Overall, the study recommended to develop more tailor made approaches for monitoring and regulation of financial institutions based on their

individual credit risk forecasting models.
(2013) [3] B. selvaraja & vadivalagan has analyzed the Priority sector advances in detail under three major heads, viz., Agriculture, Small Scale Industries and Other Priority Sector. Further weaker section advances, which forms part of Priority sector, have also been studied during 2001-2011. Agriculture advances have registered a 7 fold net increase, SSI advances have set a record net increase of 8.5 times and the advances to other priority sector have made a net increase of 4.5 times, that of their respective figures in 2001–02. The overall Priority sector advances have registered a 6.5 fold increase over that of 2001–02 in 10 years period. Indian Bank has been successful in controlling the NPAs. The NPAs have been reduced from Rs 791.98 Cr in 2001-02 to Rs 223.00 Cr in 2008-09. However in 2009-10 and 2010-11, the NPAs have grown at an alarming rate from Rs 223 Cr in 2008-09 to Rs 495.00 Cr in 2010-11 in two years. However, Indian Bank could register a net decrease in NPAs by Rs 296.98 Cr in 10 years. In case of Public Sector Banks, the NPAs have shown a slow decreasing trend from 2001-02 to 2005-06 and then there are fluctuations up to 2010-11. An alarming increase in NPAs in Public Sector Banks is seen in 2009-10 and 2010-11 and registered a net increase of `16105.66 Cr in 10 years.
(2012) [4] Chandan Chatterjee-Jeet Mukherjee-Dr. Ratan DA have attempted to focus mainly on comparative study of NPA‟s of public sector banks, private sector banks and foreign sector banks. In case of public sector banks the NPA in priority sector has shown increasing trend i.e from 53.8% to 58.01% on the other hand the non-priority sector NPA shown falling trend i.e. from 41.09% to 17.5% during the study period. Similarly the falling of NPAs in priority sector observed even in private and foreign sector banks. Therefore it is suggested that the banks has to focus on the concentrating on the provision of more credit to the priority sector that non-priority to tackle the problems of NPAs. (2012) [5] Vohra and Dhamuhas emphatically point out that the NPAs have a direct impact on profitability, liquidity and equity of the banks. The authors observe that NPA of Indian banks are relatively very high by global standards. Thus, they recommend restricting of lending operations only to secured advances with adequate collateral securities. They also list a few common reasons for an asset turning NPA, considering economy, industry, borrower and lender sides separately.
(2012) [6] Gert Wehinger has focused on the different views of bank representatives and other experts discussed in roundtable conference of OECD (2012) [6] on recent problems and serial crisis to which banking sector is exposed regularly and resulted in the loss of investor confidence across European periphery. In the conference various topics relating to banking sector are discussed such as industry outlook, business risks, business models, ethics and approaches towards risk. Participants of the conference opined that adjustment in business models and downsizing led to improvement in risk management capacity of banking sector. The study also pointed out that the portion of decreased lending rate of banks has substituted by non-banking institutions. In the conference participants opposed the regulatory separation of banking business due to inadequate risk management practices in European banking system which is a major concern of the periphery. The conference concluded with a uniform decision that regulatory reforms should be characterized by specific target, balancing with penalties and rewards, more corporate governance norms, proactive, co-coordinative and complemented to strong micro and macro factors. (2010) [7] Muniswarmy has evaluated the trend in NPAs and financial performance of SBI group banks and compared with total public sector banks during the 2000-2009. The gross NPA and net NPA of SBI group have shown decrease trend from 2000-01 to 2005-06 but thereafter started increasing. As result of this, the share of SBI in GPAs among public sector banks started fallen from 35.55% (2001) to 30.32% (2006) but thereafter reached to the highest of 40.64 %(2009), during the same period net NPA has increased continuously from 31.02% (2001) to 51.09% (2009) during the study period except in 2003 and 2004. The study also revealed that the non-priority sector is the major sector contributing to NPA against the advances granted i.e. from 0.60% to 37.05%, on the contrarily priority sector NPA reduced significantly like as in agriculture (14.71% to 3.26),SSI(42.60% to 23.99) and weaker sections (21.99 to 2.10) during the study period. On the other hand the provision of the group has increased significantly from 24.95% to 42.11% during the study period which implies erudition of bank profits by NPAs.

3. Significance of Study

After review of above literature it is observed that earlier research studies focused on comparative performance evaluation, priority sector advances, NPA, risk and management practices and no research studies recently focused on both short and long term liquidity evaluation in Indian banking sector, particularly in public sector banks. Therefore, to fill up this gap present study focused on both short and long liquidity position analysis of Punjab national bank for ten years period i.e. 2010-19. Punjab national banks has selected for the present study due to reason that it stood recently in news due to huge stressed assets and serial financial frauds which adversely affected its profitability and hampered its reputation in public. Therefore, analysis of liquidity position of Punjab national bank gains significance.

4. Objectives of the Study

- To analyze the cash flow efficiency of the Punjab national bank during 2010-2019
- To examine the financial strength of the Punjab national bank during 2010-2019
- To evaluate the liquidity position of the Punjab national bank during 2010-2019

5. Research Methodology

Present study is based purely on secondary data collected from banks annual reports which covers the study period of ten years i.e. 2010-2019. In the present study both short and long term liquidity position of Punjab national bank examined through analyzing of cash flow efficiency, financial strength and liquidity positions through ratios. Cash flow efficiency is analyzed by two ratios cash flow ratio and operating cash flow ratio, similarly, financial strength is analyzed by two more ratios namely advances to deposits and advances to total deposits ratios and finally liquidity position is examined by four ratios i.e. liquidity ratio, non-core funding to long term assets ratio, deposit ratio and liquidity coverage ratio. Both statistical and financial techniques are used in the present study.

Table 1: Cash Flow Ratios of Punjab National Bank during 2010-2019(%)

Ratios	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Avg
Cash flow ratio	7.95	7.88	6.33	5.70	8.24	9.29	11.05	12.26	12.49	9.73	9.09
Operation Cash flow	41.82	77.14	11.64	-2.63	128.13	46.37	117.29	88.07	12.75	-10.1	46.86

***Source*:** Computed from bank annual reports 2010-2019

Table 01 speaks about cash flow operations of Punjab national bank during 2010 to 2019 in India. Cash flow ratio is calculated as cash + short term investments/ Total assets. This ratio is an indication of quantity of cash available for bank to meet regular cash withdrawals and unexpected additional demand for loans. (Cash items comprise of cash & balances with RBI, Balances with Banks, money at call and short notice). This table also included another ratio called operation cash flow which is an indicator for how well bank net operating cash flows covered current liabilities for short period. This ratio is also a measure of company ability to meet its near future expenses without need to sell assets. Operating cash flow ratio is calculated as cash generated from operations/ current liabilities.

It is observed that Punjab national bank has reported cash flows ratio of 7.95 percent in 2009-10 which is slightly decreased to 7.88 percent in next year. Down trend of bank's cash flow ratio has continued even to next two years such as 6.33 percent in 2011-12 and 5.70 percent in 2012-13. In contrast, cash flow ratio has increased to 8.24 percent in 2013-14. Uptrend of cash flow ratio has continued even for next four years also such as 9.29 percent in 2014-15, 11.05 percent in 2015-16, 12.26 percent in 2016-17 and 12.49 percent in 2017-18. But, in the final year cash flow ratio has again fallen to 9.73 percent which is lowest value in last four years. Down trend of cash flow ratio in first four years is attributable to the reason that slow growth of cash items (particularly cash in hand and balances with RBI) than growth of total assets. However, in five years growth in cash items has increased than growth in total assets during the study period. In overall period, Punjab bank has maintained an average of 9.09 percent of cash availability in total assets during the study period. In the table we also analyzed another cash flow ratio named operation cash flow ratio. The analysis revealed that in 2009-10 bank's net operating cash flows covered 41 percent of net current liabilities which has increased to 77.14 percent of coverage in the next year. But, this coverage has fallen to 11.64 percent in 2011-12 which has further turned into negative cash flows in 2012-13 which is result of huge cash outflows than cash inflows from operating activities. The negative operating cash flows of banks in 2012-13 have turned to positive cash flow and even more than current liabilities which indicates good liquidity position. Similarly, in 2014-15 and 2015-16 company operating cash flows covered 46 percent and hundred percent of current liabilities respectively. This trend has continued in next two years also such as 88.07 and 12.75 percent in 2016-17 and 2017-18. In the last year operating cash flows of the Punjab bank again fallen to negative value. In overall, company could cover an average of 46.86 percent current liabilities during the study period. Bank has reported negative cash flows in 2013 and 2019 due to huge outflow of cash in form of investment, advances and other assets and repayment of borrowing at large quantity.

Table 2: Financial strength ratios of Punjab national bank during 2010-2019 (%)

Ratios	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Avg
Advances to deposits	74.84	77.38	77.39	78.84	77.38	75.90	74.55	67.47	67.54	67.79	73.90
Advances to Total assets	62.91	63.99	64.12	64.47	63.46	63.07	61.78	58.24	56.64	59.13	61.78

***Source*:** Computed from bank annual reports 2010-2019

Table 02 clearly speaks about financial strength of Punjab national bank during 2010-2019. In the present study financial strength of the Punjab national bank has measured with two ratios namely advances to total deposits and advances to total assets ratios. Advances to deposits ratio indicates to what extent liquid assets are funded by stable liabilities. Advances to deposits ratio between to 85-95 percent is acceptable level for good financial strength of the firm. On the other hand, table also reflects another ratio which is an indication of firm's efficiency to meet loan and liquid needs. The acceptable level of advances to total assets ratio is 70-80 percent. Increase in both ratios indicates increase in financial strength of the bank and vice versa.

It is observed from the above table that advances to deposit ratio of Punjab national bank has shown uptrend in four years such as 74.84 percent in 2009-10, 77.38 percent in 2010-11, 77.39 percent in 2011-12 and 78.84 percent in 2012-13, in contrast, advances to deposit ratio has reported down trend in next four years such as 77.38 percent in 2013-14, 75.90 percent in 2014-15, 74.55 percent in 2015-16 and 67.47 percent in 2016-17. But in last two years this ratio has reported marginal increase to 67.54 percent and 67.79 percent in 2017-18 and 2018-19 respectively. Punjab national bank's advances to deposits ratio has not stood at acceptable level (85-95) during the study period which indicates that bank's liquid assets are not funded more by stable liabilities. On the hand, proportion of advances to total assets stood at 62.91 in 2009-10 which has gradually increased to 63.99 percent in 2010-11, 64.12 percent in 2011-12 and 64.47 percent in 2012-13. In contrast, in next five years it proportion of advances to total assets has shown downtrend such as 63.46 percent in 2013-14, 63.07 percent in 2014-15, 61.78 percent in 2015-16, 58.24 percent in 2016-17 and 56.64 percent in 2017-18. But, in last year advances has increased to 59.13 percent in total assets. However, Punjab national bank has kept maximum of 64.47 percent in 2012-13 and lowest of 56.64 percent in 2017-18 of advances proportion in total assets with an average of 61.78 percent during entire study period. Advances to total assets of Punjab national bank is not at acceptable level of 70-80 percent during the study period which indicates banks inefficiency to meet loan and liquid needs.

Table 3: Liquidity ratios of Punjab national bank during 2010-2019(%)

RATIOS	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Avg
Liquidity ratio	2.90	3.10	2.87	2.48	3.59	4.05	5.67	6.85	5.80	1.02	3.83
Non-core funding /long term assets	50.22	53.86	57.81	48.64	58.31	48.81	93.62	29.88	62.13	52.48	55.57
Deposits ratio	84.05	82.71	82.84	81.77	82.01	83.10	82.87	86.31	83.86	87.24	83.67
Liquidity coverage ratio	**	**	**	**	**	96.79	74.93	143.2	111.2	121.2	109.4

***Source*:** Computed from bank annual reports 2010-2019 ** Indicates that not applicable.

Above table (03) reflects liquidity performance of Punjab national bank during 2010-19. The liquidity evaluation of bank has done through four ratios namely liquidity ratio, non-core funding to long term assets ratio, deposits ratio and liquidity coverage ratio. Liquidity ratio indicates ability of the banks to pay its short term debts with short term assets when they become due. General rule for liquidity ratio is 2:1 however, in case of banking sector around 1.7 is also indicates good liquidity position, below this indicates severe liquidity position to meet debt. Similarly, non-core funding to long term assets is an indication of how much long term earning assets funded by non-core funds. None core funds comprises of short term deposits and borrowings which maturity period is less than 12 months and long term assets comprises of advances and investments which maturity period is more than 12 months. Lower ratio of non-core funding to long term assets is better for the low banks liquidity needs. Core deposit ratio (deposit/total assets) also included in the above table which is indicates to what extent banks assets are funded by stable deposits, acceptable level is 55 percent. As part of Basel II norms since 2015 banks introduced liquidity coverage ratio which reflects the proportion of high liquid assets in to meet short term obligations at once. Liquidity coverage ratio calculates as proportion of high liquid assets to current liabilities.

It is observed from the study that liquidation position of the Punjab national bank stood in between two to four percent during 2010-2014, similarly, for next five years liquidity position has increased to four to seven percent (2014-2018), but in last year liquidity position has fallen to 1.02 percent due to huge increase in current liabilities in last year. Similarly, in first six years around 48-58 percent of long term assets funded by non-core funds, but in 2015-16 93 percent and in 2016-17 only 29.88 percent of long term assets funded by non-core funds. This indicates that firm's liquidity needs are more than half of liabilities. The deposit ratio of Punjab national bank stood at acceptable level during entire study period i.e. in between 80-87 percent. This indicates that around eighty percent of bank assets are funded by stable deposits. Similarly, liquidity coverage ratio of banks stood in the range of 96-114 percent during the study period which indicates that bank has high liquid assets to meet current liabilities.

6. Findings and Suggestions

- The study on the cash flow ratio analysis of Punjab national bank found that in initial four years availability of cash is low, but, in next five year cash availability has increased at substantial rate. The study also observed that cash portfolio of Punjab national bank has strongly shifted from unproductive cash components such as cash in hand and balance with RBI (three-fourth) to risk less low rate of return assets as near liquid or very short period items such as balances with other banks, money at call and short notice (three-fourth). Similarly, operating cash flow ratio of Punjab national bank has witnessed positive and negative coverage of current liabilities during the study period. However, company has reported positive operating cash flows eight out of ten years of study period which is good indication of company's liquidity position.
- It is found from the study downtrend in proportion of total advances to both total deposits and total assets during the study period. In case of Punjab national bank proportion f total advances total deposits and total assets are not up to acceptable level. The down trend in proportion of total advances affects adverse impact on bank's business growth and inefficiency to meet loan and liquid needs. Therefore, it is suggested to maintain both ratios at acceptable level to avoid adverse impact on business growth and liquidity.
- It is observed that banks liquidity position has stood at satisfactory level with an average of 3.83 percent during the study period. Punjab national bank has reported highest liquidity of 6.80 percent in 201-17 and lowest of 1.02 percent in 2018-19 during the study period. The study also observed that liquidity needs of Punjab national bank stood at an average of more than half during the study period. The study also found that more than eighty percent of long term assets funded by stable deposits during the study period. Similarly, liquidity coverage ratio as per Basel II norms is satisfactory.

7. Conclusion

In overall, the study concludes that Punjab national bank cash flows are reported downfall during the study period. This is due to the reason that Punjab national banks has huge outflow of cash in form of investment, advances and other assets and repayment of borrowing at large quantity. Similarly, bank financial strength is not at acceptable level during the study period which indicates its inability to meet additional demand of loan and liquid needs. Punjab national bank liquidity position is at satisfactory level during the study period.

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