An Empirical Analysis and Comparative Study of Liquidity Ratios and Asset-Liability Management of Banks Operating in India

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Abstract—This paper is focused on the analysis and comparison of liquidity ratios and asset liability management practices in top three banks from public, private and foreign sector in India. The analysis is based upon the liquidity ratios calculation and the determination of maturity gap profiles for the banks under study. The paper also compares these banks maturity gap profiles with their corresponding group's maturity gap profiles. This paper identifies the interest rate sensitivity of the balance sheet items of these banks to determine the gap between rate sensitive assets and rate sensitive liabilities. The results of this study suggest that overall banks in India have very good short term liquidity position and all banks are financing their short term liabilities by their long term assets.

Keywords—ALM, Liquidity ratios, Rate sensitive Assets, Rate Sensitive Liabilities.

I. INTRODUCTION

WHEN analysis of banks performance is done they only concerned about various types of the ratios or the NPA levels of the banks. Also the approach to the asset liability management is not clear. One of the methods to analyze the financial strength of a bank is financial ratio analysis. Liquidity ratios are calculated and analyzed to determine the liquidity strength of a bank. Every financial institute irrespective of its size is generally exposed to market liquidity and interest rate risks. Failure to identify the risk may affect the financial position of the financial institute. One of the strategies for risk management is Asset Liability Management (ALM). ALM is an attempt to analyze the gap between assets and liabilities in terms of their maturities and interest rate sensitivities so that banks can minimize the risk arising from such gap mainly—interest rate risk and liquidity risk. As far as ALM in Indian banking system is concerned, it is still in an early stage. At present ALM has become an essential tool in the banking sector. It is a part of overall risk management system in banks.

ALM is basically a response to the various risks and challenges which any bank is facing or may face in near future. It provides a degree of protection from such risks and prepares the management to accept such risks. The ALM approach can help management to see their bank's current

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market risk profiles and future risk profiles and evaluate the impact of alternative decisions for these risk profiles. By evaluating these risk profiles bank management will be in a position to decide a suitable course of action which suit the risk taking ability of the bank.

This paper delivers a combined approach which encompasses analysis of both liquidity ratios and analysis of maturity gap profiles for the analysis of liquidity position and asset liability management in banks.

A. Need for ALM in Banks

The Changes in the financial markets in recent years as foreign players have gained access to the domestic market, and risks associated with the operations of banks have become complex. Now the management requires strategic management to operate banks successfully. Competition after the entry of foreign banks increased [6]. The volatile interest rates and exchange rate have put the pressure on the banks to design their asset liability portfolio in such a way that the risk in the portfolio is minimized. Banks management needs to maintain a good balance between the gap, profitability and stability. The most important thing for bank management is to manage market liquidity risk and interest rate risk. Hence banks need a framework which enables them to combat these risks and helps them to optimize the performance of the banks. In this scenario ALM is very useful and helpful tool to analyze the liquidity and interest rate risk [12], [13].

B. Literature Review

The amount of literature available about the asset liability management in banks is considerably high. Various researchers have made significant contribution in the field of asset liability management by studying it in different contexts. According to Vaidyanathan (1999) the most important thing which banks require to manage now days is interest risk [16]. He analyzed various types of risks and found that earlier banks were liquidity managed but now we can identify them as liability managed [5]. In a Similar study Vaidya and Shahi (2001) concluded that interest rate risk and liquidity risk are two key inputs in business planning process of banks [19]. According to Bikram De (2003) ownership does not seem to have any effect on the Return on Assets but, public sector banks do seem to have higher Net Interest Margin and Operating Cost Ratio [6]. Ranjan and Nallari (2004) used canonical analysis to examine asset-liability management in Indian banks in the period 1992-2004. They found that SBI

and associates had the best asset-liability management in the period 1992-2004. They also found that, other than foreign banks, all other banks could be said to be liability-managed. Private sector banks were mostly focused on profit generation, while nationalized banks followed a conservative approach about maintaining high liquidity [1], [9]. The Basel committee for banking supervision provides important guidelines for measuring interest rate risk sensitivity [11]. Chabraborty and Mohapatra (2008) stated in their study that public sector banks have an efficient asset-liability maturity pattern. Also they found that the interest rate risk and liquidity risks are the significant risks that affect the bank's balance sheet and therefore, they should be regularly evaluated and managed [2]. In their study on the comparison of the performance of public and private sector banks of India, Kajal Chaudhary and Monika Sharma (2011) stated that public banks must pay attention on their functioning. These banks should select borrower very cleverly and also public banks should decrease the NPA level [4]. Sometimes the perspective of management also defines the risk profile of banks which further determines the liquidity and profitability tradeoff [10].

This paper analyses asset-liability management in banks operating in India using the asset-liability guidelines provided by the Reserve Bank of India. This study has compared these banks maturity gap profiles with their corresponding group hence giving a clear picture for separate groups of banks. Also analysis of the liquidity ratios such as quick ratio and current ratio which shows the short term liquidity of banks is done.

II. Data and Methodology

In this study analysis of short term liquidity for banks is done for a period of 10 years (2002-2011) by analyzing liquidity ratios for respective banks. Also study of asset-liability management is done in top three banks from each group (i.e. public, private and foreign) operating in India by determining the liquidity position of banks in India through maturity profile for the year 2011. The criteria for selecting these banks is their asset size.

TABLE I
CATEGORIZATION OF BANKS

Nationalized Banks	Private Banks	Foreign Banks
SBI	ICICI	CITI Bank
PNB	HDFC	HSBC
CANARA Bank	AXIS Bank	Standard Chartered Bank

These top three banks were purposely selected for the study, keeping in view their role and involvement in shaping the economic conditions of India, specifically in terms of advances, deposits, manpower employment, branch network, new technology etc. The objectives of the study includes to compare the maturity gaps, analyze their interest rate sensitivity in top three public, private and foreign banks in the Indian banking industry and to analyze short term liquidity of banks by analyzing liquidity ratios.

The data for the study is collected from the major financial details (balance sheets, annual reports) of the sample banks and the RBI website i.e. www.rbi.org.

The study is conducted on the basis of the Asset-Liability Guidelines issued by RBI to individual banks. All the balance sheet items will be distributed into time buckets as follows: 1-14 days; 15-28 days; 1-3 months; 3-6 months; 6-12 months; 1-2 years; 2-5 years; and 5+ years. Bank assets and liabilities will be allocated into various maturity periods as per the guidelines issued by Reserve Bank of India.

The maturity gap is computed by subtracting total outflows from total inflows, giving the mismatch in the outflow and inflow in the particular time bucket. A positive maturity gap means that in the particular time bucket, the inflows are more than outflows, while a negative maturity gap means that in the particular time bucket, the inflows are lesser than outflows. Calculation of gap between Rate sensitive assets (RSAs) and Rate sensitive liabilities (RSLs) is done for measuring interest rate risk.

There are some limitations associated with the present study. The actual maturity profiles of some of the balance sheet items were not available from the secondary sources. These balance sheet items were distributed in a pre-determined proportion for all the banks, based on overall demand patterns, as expressed by RBI.

The calculations are based upon the following formulas:

➤ Current Ratio = Total Current Assets/ Total Current Liabilities
➤ Quick Ratio = (Cash + accounts receivables + marketable securities)/ Total Current Liabilities
➤ Quick Assets = Quick Assets / Total Current Liabilities
➤ CRR of banks = Cash with RBI*100/Total Deposits
➤ Maturity gap in selected time bucket = Total inflows in the time bucket – total outflows in the particular time bucket
➤ GAP for Interest rate sensitivity = Rate sensitive assets in the particular time bucket - Rate sensitive Liabilities in the particular time bucket.

Interrelationship between GAP and Net Interest Income:

TABLE II
RELATIONSHIP BETWEEN GAP AND NII

Sl. No.	GAP	Changes in Interest Rate	Changes in Net Interest Income
1	RSAs = RSLs	Increase	No change
2	RSAs = RSLs	Decrease	No change
3	RSAs ≥ RSLs	Increase	Increase
4	RSAs ≥ RSLs	Decrease	Decrease
5	RSAs ≤ RSLs	Increase	Decrease
6	RSAs ≤ RSLs	Decrease	Increase

The ideal situation for a bank will be when RSAs = RSLs, then the increase or decrease in interest rate will have no effect on its net interest income.

Net interest income is the major source of income for banks. Any increase or decrease in interest rate affects the net interest income of the banks. So banks have to formulate the strategy in such a manner that any changes in interest rate

have minimum effect on its net interest income. Also ALM committee has to predict the correct change in interest rate. If they cannot predict the movement of interest rate than it can result in wrong strategy formulation [3], [7], [17], and [18].

So the ALM process is so critical that it can have adverse effect on the whole banking system.

III. RESULTS

The various ratios have been calculated in order to analyze liquidity position in banks. Table III shows the position of current ratio for all the banks in time period 2002-2011.

TABLE III
ANALYSIS OF CURRENT RATIO

BANKS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
SBI	5	5	5	4	5	5	7	4	4	4
PNB	5	4	3	3	3	3	2	2	2	3
CANARA	4	4	4	2	2	2	2	2	1	2
ICICI	10	13	11	9	8	9	11	13	14	11
HDFC	6	6	3	3	4	4	4	4	3	6
AXIS	3	4	4	6	4	3	3	3	3	2
CITI	4	3	3	4	4	6	6	7	6	8
HSBC	3	5	4	4	5	6	7	9	6	7
STANDARD CHART.	5	4	4	5	6	7	7	6	8	9

It was found by the analysis of quick ratio for these banks that quick ratio is very high in case of CANARA BANK. It is very interesting to see that in last three years it has increased significantly, which means that either the quick assets have increased or inventory / current liabilities have decreased in this time period. One reason for the increase in quick ratio is the maturing assets in one year (Table IV). So the total quick assets increases resulting an increase in quick ratio.

TABLE IV
ANALYSIS OF QUICK RATIO

BANKS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
SBI	2.97	3.17	3.51	4.79	5.5	6.52	6.15	5.74	9.07	8.5
PNB	8.53	8.72	7.05	5.98	10.6	11.1	9.4	9.75	20.4	22.24
CANARA BANK	9.99	8.54	8.06	9.46	10.1	9.49	9.17	11.2	26.9	30.86
ICICI	3.27	3.84	4.18	4.98	6.64	6.04	6.42	5.94	14.7	15.86
HDFC	4.24	4.39	3.39	5.61	5.18	4.07	4.89	5.23	7.14	6.89
AXIS BANK	8.25	9.41	9.17	11.5	6.52	7.39	9.23	9.52	19.1	19.6
CITI BANK	4.54	6.54	5.42	5.98	7.21	7.88	9.11	10.1	12.1	14.31
HSBC	3.41	3.66	4.6	5.13	4.8	6.7	7.23	7.79	9.56	11.6
STAN CHART BANK	3.12	5.87	5.1	4.9	5.9	5.01	7.9	9.8	10.6	12.95

Cash Reserve Ratio (CRR) is a very crucial measure to determine any firm's strategy in handling the cash. CRR is reviewed periodically by RBI. Currently CRR is 5.50 %. It means banks have to keep 5.5 % of their total deposits with the Reserve Bank of India [14], [15].

TABLE V
ANALYSIS OF CASH RESERVE RATIO

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
SBI	8.08	4.6	5.97	5.6	5.69	7.67	9.58	7.49	7.62	10.1
PNB	7.95	8.66	7.67	9.16	11.64	8.84	9.16	8.13	7.35	7.59
CANARA BANK	12.27	7.77	7.98	5.14	6.77	7.68	8.67	5.37	6.69	7.48
ICICI	5.53	10.14	7.94	6.35	5.41	8.11	12.01	8.03	13.61	9.26
HDFC	6.86	9.3	8.35	7.28	5.92	7.58	12.45	9.47	9.24	12.03
AXIS BANK	9.14	9.43	18.02	10.75	6.05	7.92	8.33	8.02	6.7	7.33
CITI BANK	8.19	9.37	8.51	10.68	8.73	7.64	9.78	6.07	5.95	8.38
HSBC	9.32	8.64	6.99	7.66	5.48	9.03	11.26	7.21	6.91	8.78
STANCHART BANK	7.72	6.82	6.1	5.27	5.68	7.62	12.02	7.41	7.47	7.16
RBI DEFINED CRR	5	4.5	5	5	5.25	7.5	7.75	5	6	6

It is clear from Table V that all banks have always maintained CRR well above the minimum limit as specified by Reserve Bank of India.

It is observed for all type of banks that in the year 2007-08 banks increased their cash with RBI because of the global recession situation. Banks considered it safe to keep their cash

with RBI at a lower rate than to invest it, because investment and loans bring more risk with them.

Overall these ratios indicate that short term liquidity position of all banks is very strong and banks have maintained a decent liquidity position throughout the span of 10 years. It

is one of the reason why Indian banking sector is considered as world's strongest banking system [8].

Table VI shows the maturity gap for the sample banks in different time buckets:

TABLE VI
ANALYSIS OF MATURITY GAP FOR LIQUIDITY RISK

BANKS	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years
SBI	21763.01	9536.82	-1279.51	-20198.19	-93691.82	59356.98	-53970.78	78483.49
PNB	-1270.36	-26489.8	9511.47	11580.25	-1872.73	-6457.94	26785.65	-11786.86
CANARA BANK	4564.56	103.56	1745.81	3190.49	-34299.52	5419.8	4272.89	15002.41
ICICI BANK	12180.66	4724.08	550.03	-9794.78	-21263.05	-673.4	34427.54	-20152.38
HDFC BANK	11922.4	2206.91	6659.85	10088.69	26093.69	-61671.28	-5540.65	10241.13
AXIS BANK	13828.43	-1395.25	-10271.2	-4837.41	-18926.59	21479.59	13769.42	-13646.97
CITI BANK	9397.75	7687.04	6251.62	4414.61	-1584.98	-15612.38	3871.83	-14426.02
HSBC BANK	-3678.91	4040.92	7968.05	7375.63	1999.06	-9592.67	683.3	-8794.54
STANDARD CHARTERED BANK	-1749.12	848.07	-2733.91	4017.91	3944.99	-3395.71	3339.13	-4258.35

It can be observed from Table VI that all the private sector banks have excess liquidity in 1-14 days time buckets also out of 9 banks only three banks have liquidity deficiency in this bucket.

Table VII shows the calculated cumulative maturity gap for the sample banks in different time buckets:

TABLE VII
ANALYSIS OF CUMULATIVE MATURITY GAP

BANKS	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years
SBI	21763.01	31299.83	30020.32	9822.13	-83869.69	-24512.71	-78483.49	0
PNB	-1270.36	-27759.84	-18248.37	-6668.12	-8540.85	-14998.79	11786.86	0
CANARA BANK	4564.56	4668.12	6413.93	9604.42	-24695.09	-19275.29	-15002.51	0
ICICI BANK	12180.66	16904.74	17454.77	7659.99	-13603.06	-14276.46	20152.08	0
HDFC BANK	11922.4	14129.31	20789.16	30877.85	56971.54	-4699.74	-10240.39	0
AXIS BANK	13828.43	12433.18	2161.96	-2675.45	-21602.04	-122.45	13646.97	0
CITI BANK	9397.75	17084.79	23336.41	27751.02	26166.04	10553.66	14425.49	0
HSBC BANK	-3678.91	362.01	8330.06	15705.69	17704.75	8112.08	8795.38	0
STANDARD CHARTERED BANK	-1749.12	-901.05	-3634.96	382.95	4327.94	932.23	4271.36	0

Cumulative maturity gap is calculated to determine the liquidity position if the gaps are financed from the earlier time buckets. It is the running total of deficit or surplus of all time buckets.

The maturity gap for determining interest rate sensitivity is shown in the Table VIII.

TABLE VIII
ANALYSIS OF MATURITY GAP FOR INTEREST RATE SENSITIVITY

BANKS	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years	Non sensitive
SBI	69736.6	19440.0	39394.1	5326.46	-99813.8	122648.1	-53630.5	-5888.9	-55406.7
PNB	12860.3	7673.14	6401.57	7396.41	-4007.61	-7448.62	34415.6	3126.13	-58913.3
CANARA BANK	23667.5	103.56	439.15	4659.07	-35537.6	866.47	-9994.01	35852.4	-25298.8
ICICI	24655.6	9252.86	-1586.28	-6952.22	-23216.2	-4330.39	32934.2	26914.5	-51556.1
HDFC	21161	7012.41	6659.85	21366.0	17590.7	-61671.28	-6541.18	22151.1	-28129.0
AXIS BANK	12443.5	5138.54	-10998.3	-5265.4	-19982.7	20001.72	16512.0	6667.06	-25480.8
CITI BANK	16595.6	7314.45	4261.97	4630.95	-3953.93	-22968.44	2016.87	-3637.56	-4259.81
HSBC	5704.01	7133.93	7255.16	6529.03	-654.95	-10568.79	-16999	3146.4	3407.17
STANDARD CHARTERED BANK	11399.3	848.07	-2733.91	4268.89	126.97	-3395.71	3339.13	8803.93	-18460.5

The gap between rate sensitive assets and rate sensitive liabilities is positive for 1-29 days. So it is very clear that all

these top banks are not taking any risk on their short term liquidity.

The maturity gap between RSAs and RSLs from 6 month to 1 year bucket is negative for almost all banks.

All the banks have been ranked based on their maturity profiles for the selected times buckets. The ranks are shown in Table IX.

TABLE IX
RANKING OF ALL BANKS BASED UPON THEIR MATURITY GAP

Maturity Gap	1 - 14 day	15 - 28 days	29 days to 3 months	Over 3 to 6 month	Over 6 to 1 year	Over 1 to 3 year	Over 3 to 5 year	Over 5 years
SBI	1	1	7	9	9	1	9	1
PNB	7	9	1	1	5	6	2	6
CANARA BANK	6	7	5	6	8	3	4	2
ICICI BANK	3	3	6	8	7	4	1	9
HDFC BANK	4	5	3	2	1	9	8	3
AXIS BANK	2	8	9	7	6	2	3	7
CITI BANK	5	2	4	4	4	8	5	8
HSBC BANK	9	4	2	3	3	7	7	5
STAN CHART BANK	8	6	8	5	2	5	6	4

Table IX shows the rankings for the different banks for different time buckets. It can be easily concluded from the table that banks that are good at maintaining short term liquidity need not to do it in long term.

A. Comparison of Maturity Gap for Each Bank with Respect to Their Corresponding Group

The comparison of maturity gap of these banks with their group has been made to study whether they are behaving as their respective group or they are following different strategy.

The maturity gap for each bank in the study is compared to the overall maturity gap for the respective sector of the bank.

In Table X maturity gap of selected nationalized banks is compared to the overall maturity gap of all nationalized banks

In Table XI the maturity gap for all private sector banks is compared to the overall maturity gap of their group

Table XII shows the comparison of overall maturity gap for foreign banks.

TABLE X
COMPARISON OF MATURITY GAP FOR NATIONALIZED BANKS

Maturity Gap	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years
SBI	21763.01	9536.82	-1279.51	-20198.1	-93691.8	59356.98	-53970.8	78483.49
PNB	-1270.36	-26489.5	9511.47	11580.25	-1872.73	-6457.94	26785.65	-11786.86
CANARA BANK	4564.56	103.56	1745.81	3190.49	-34299.5	5419.8	4272.78	15002.41
All NATIONALIZED BANKS	-36518.11	43478.1	-74536	-63528.9	-135560	-62942.8	208936.3	127956.31

TABLE XI
COMPARISON OF MATURITY GAP FOR PRIVATE BANKS

Maturity Gap	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years
ICICI BANK	12180.66	4724.08	550.03	-9794.78	-21263.1	-673.4	34428.54	-20152.3
HDFC BANK	11922.4	2206.91	6659.85	10088.69	26093.69	-61671.3	-5540.65	10241.13
AXIS BANK	13828.43	-1395.2	-10271.2	-4837.41	-18926.6	21479.59	13769.42	-13646.9
ALL PRIVATE BANKS	14121.07	8217.09	-9786.04	4548.24	-40179.5	-18408.8	71624.24	-37280.0

TABLE XII
COMPARISON OF MATURITY GAP FOR FOREIGN BANKS

Maturity Gap	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 to 5 years	Over 5 years
CITI BANK	9397.75	7687.04	6251.62	4414.61	-1584.9	-15612	3871.8	-14426
HSBC BANK	-3678.91	4040.92	7968.05	7375.63	1999.06	-9592.6	683.3	-8794.5
STANDARD CHARTERED BANK	-1749.12	848.07	-2733.9	4017.91	3944.99	-3395.7	3339.13	-4258.3
ALL FOREIGN BANKS	-35304	5650.90	17943	28496.8	6600.52	-25065	-7661.3	-56240

IV. DISCUSSION

The results of the study suggest that current ratio for all the banks were well above the minimum limit set by RBI (Table III). The reason behind this strategy of the banks can be a conservative approach followed by all the banks. From the analysis of the current ratio of top three nationalized bank, it is clear that initially in 2002, all three banks were having higher current ratio as compared to 2011. All banks kept more liquidity in past and now they are shifting towards investing the cash in various instruments like government securities,

stocks, bonds etc. Earlier the banks are not permitted to invest the cash as it increases the risk exposure of banks. But now days to increase the profitability and earnings banks are investing their money that's why the trend is downward (Table III). From last three years the trend of current ratio, quick ratio and CRR is either stable or increasing (Tables IV, V), this can be due to the threat of financial crisis of various economies. Banks have now again started keeping more cash with them to avoid any such situation.

Analysis of maturity gap profiles suggests that nationalized banks have maintained a healthy liquidity position in almost all time buckets. However it is critical to say that these banks are now slowly changing their strategies. Overall public sector banks had a better short term liquidity position than the private sector banks and foreign banks. It can be seen from Table VI that all banks are in position to finance their gaps till 6 months from the earlier time bucket, after it the gap widen and a deficit occurs.

Private Banks have adopted the similar strategy as public sector banks as their cumulative gap is also negative in this time bucket.

Overall, the top three private sector banks also had a comfortable short-term liquidity position. They have managed their short-term liquidity better than the public sector banks. This could be a major factor contributing to the higher overall profitability of the private sector banks.

But foreign banks did not have a comfortable liquidity position in short term. So there is great scope for improvement in liquidity for the foreign banks.

The cumulative maturity gap for all nationalized banks is negative in 6 time buckets. The positive maturity gap is found only in 15-28 days, 3-5 years and over 5 years time bucket. The trend is somewhat different in short and long run but in medium run they all following the same trend. So we can say that although the strategies of banks are different but characteristics are not. In long run SBI has gone from deficit to surplus (Table VII).

Foreign banks have adopted a very different and aggressive in terms of their asset and liability management (Table VII). The cumulative gap for CITI Bank is here commendable as it doesn't have any deficit in any time bucket. So it can be concluded that it is managing its assets and liabilities more efficiently, keeping in mind both liquidity and profitability. So as far as cumulative maturity gap is concerned CITI Bank turns out to be best bank with the best ALM practices.

If the effect of interest rate is considered for the banks than it is found that for most of the banks gap is positive hence if the interest rate increases the net interest income will increase and if interest rate decreases the net interest income will decrease.

The high amount of non-sensitive assets indicates that banks do not want to take more risk hence they are keeping large number of liabilities as non sensitive.

The comparison of the overall maturity gap of the corresponding group for these banks shows that it is not necessary that top three banks follow the same asset-liability management practices as the other banks in group follow.

In case of private banks, all banks have not followed the same trend as their group. In some time buckets the maturity gap for group is different from the maturity gap for the individual bank. We can see that all the foreign banks are following same trend. The reason behind this is that all foreign banks follow more or less the similar ALM strategies. Also it is clear that these banks maturity gap is in sync with their overall groups' maturity gaps (see Table XII).

The ranking of these banks shows that all top ranks are occupied by public sector banks (Table IX). This means that these banks are maintaining higher amount of liquidity as compared to their counterparts. And also foreign banks have good ranks than private banks. It suggests that these banks are also shifting towards liquidity management as now a day the bank with higher liquidity is the king as the global banking system is facing huge shortage of liquidity.

V. CONCLUSION

Liquidity management and asset liability management are the practices most often carried out in every organization which is concerned about performance and profits. Asset-Liability Management has now become essential for all financial institutions in India.

From this study we can conclude that overall the liquidity structure of banks in India is stable but the amount of cash they maintain with them can create problems in long run as it is deteriorating their profits.

As we have seen in case of nationalized banks the trend for SBI is different from the overall trend. These top banks can influence the overall structure of maturity gap in their corresponding group but it is also clear from the study that ALM practices purely depends on the management of the banks and they can design a suitable ALM structure which they see as more comprehensive. But we cannot deny the fact that in most of the time buckets all the banks have followed the same trend.

This study is carried out for top three banks of each segment. These banks are the benchmark for their respective sectors. Hence this study can be very helpful in we can implement these practices at any other bank if they are found to be successful. Since the study covers top three banks from each sector, we can also make comparison between these banks and then give some suggestion to match the best in the business.

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