

# **A PROJECT REPORT ON ASSET-LIABILITY MANAGEMENT AS A STRATEGIC TOOL FOR MANAGING FINANCIAL RISKS: A COMPARATIVE STUDY OF SELECTED INDIAN BANKS**

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## ***ABSTRACT***

Managing Asset – liability mix is more important for stabilizing Indian Financial Market which is witnessing the increased volatility of domestic interest rates as well as foreign exchange rates. After liberalization of interest rates, the scenario of banking sector has been changed due to its gap between assets and liabilities. The interest rate gap and maturity gap pressuring the management of banks to maintain a good balance among spreads, long –term viability and profitability. Apart the banks have to operate in competitive and risky environment order to grow and survive Asset-liability management has become a strategic tool. Hence the present research article analyzes four banks namely SBI, ICICI Bank, IDBI Bank and Karur Vysya Bank’s asset – liability management practices in order to manage liquidity risk, interest rate risk and foreign exchange risk using scenario generation model.

Keywords: Asset- liability management, liquidity risk, interest rate risk, foreign exchange risk, NII

## **I. Introduction**

Liberalization of the economy in 1991 reshaped the Indian banking industry. It brought drastic changes into fundamentals of economy. The global environmental conditions are so vibrant and face several challenges. Indian banks are active internationally and strong to face challenges. Implementation of financial sector reforms has shown significant growth in banking sector in terms of financial performance. But there are certain areas of concern which affect efficiency of the banks and also banks’ performance. One of the biggest challenges for Indian banking sector is NPAs (Non – performing Assets). The management of NPAs is also a hindering aspect for banks. The high amount of NPAs creates an adverse impact on the liquidity, profitability and competitiveness of banks. Credit risk is turned into NPAs or defaulters. The post banking reforms scenario has given the chance for new private players and foreign players entrance. This has led to heavy competition in the banking industry. The competitive environment and greater use of information technology required introduction of new products and services. Apart from these factors, the dynamic internal and external environmental conditions are causing various risks. Important among them are interest rate risk and foreign exchange risk.

In this context, Basel norms II such as maintenance of minimum capital requirement, regulatory supervision and market discipline helps the banks to avoid risks. As the banks major focus is to mitigate risks, they have to adopt new strategies within the purview of regulatory framework in order to achieve their vision as well as to develop a sound banking system.

An important tool which is significant to tackle the risks associated with the Indian banking industry is Asset – Liability Management (ALM). ALM is an integrated approach of managing assets and liabilities which ensuring operational viability as well as meeting the competitiveness among banks. ALM helps in effective management of balance sheet through proper restructuring of asset and liability portfolios in the dynamic environment conditions. Despite the implementation of ALM is suffering from various practical difficulties.

Asset – liability management is an integrated approach which ensures matching between the assets and liabilities of banks. ALM is considered to be an integrated model as it is handling with Asset – liability management, risk management, spread management, interest rate gap management put together; it is a process of integrated balance sheet management. The primary objective of ALM is to minimize the risk level tuning with risk – return dimensions of the bank. Hence, banks use NII (Net Interest income) method and NIM (Net Interest Margin) method. These methods do not eliminate risks but they mitigate the risk in such a way that the fluctuations in interest rates will not affect the short run and long run operating viability of the banks.

The practice of mitigating financial risks resulting from a mismatch of assets and liabilities is ALM as stated by CFI (2023). According to CFI, ALM is a strategy which is the combination of risk management and financial planning by financial institutions to manage long term risks that can arise due to changes in environmental conditions.

## II. Objectives of the study

- To study the changes in interest rates and impact of changes on financial position of the banks - measurement of interest rate risk.
- To identify the maturity gaps among assets and liabilities with the statutory liquidity statements – measurement of Liquidity risk.
- To conduct scenario analysis with the increase and decrease of interest rates by 50 basis points and foreign exchange rates by 50 basis points
- To make the comparative study of select banks about its foreign currency risk – measurement of foreign exchange risk
- To suggest banks certain measures to mitigate the risks with the help of ALM best practices.

## III. Review Of Literature

**Susie Fair (2003)** defines ALM as the process of evaluating balance sheet risk and making prudent decisions that enable credit unions to remain financially viable as economic conditions change. A sound ALM process integrates strategic, profitability and net worth (capital) planning with risk management,

**According to Patrick Totty, (2003)** ALM measures balance sheet risk by predicting how earnings and other key performance benchmarks react in alternative interest-rate environments and economic conditions. ALM helps the bank in the efficient management of their assets and liabilities with a special focus on profitability, capital adequacy, liquidity and risk factors in a dynamic and competitive economic environment, Asset-liability management views the financial

institution as a set of interrelationships that must be identified, coordinated and managed as an integrated system (Moynihan, Purushothaman, Mcleod, and Nichols, 2002).

**According to Prof. (Dr) Kanhaiya Singh (2013)** In India asset liability mismatch in balance sheet of commercial banks posed serious challenges as the banks were following the traditional methods of recording assets and liabilities at the book value. The liberalization process in the economy coupled with multifaceted global developments exposed banks for various kinds of risks viz. interest rate risk, liquidity risk, exchange risk, operational risk etc. which have direct impact on their operations, profitability and efficiency to compete with. The Central Bank of the country focused and advised banks for taking concrete steps in minimizing the mismatch in the asset-liability composition

In order to manage mismatches between assets and liabilities, the risk arising out of those mismatches the banks in India form an Asset – Liability Management committee (ALCO). The major role of ALCO is to formulate a policy on maintenance of a balance sheet by trading off between risk and return. ALCO ensures the banks liquidity in short run and solvency in long run. This committee helps the banks to identify risks, analyze, frame the appropriate risk mitigation strategies and implement strategies for efficient management of risks.

#### **IV. NEED OF THE STUDY:**

- The study helps in understanding the importance of Asset–Liability Management (ALM) in managing liquidity risk, interest rate risk, and foreign exchange risk in banks.
- It identifies the impact of mismatch between assets and liabilities on profitability, Net Interest Income (NII), and financial stability of banks.
- The study is important in evaluating the effectiveness of ALM techniques such as gap analysis and scenario analysis in mitigating financial risks.
- The study provides comparative insights into the ALM practices and risk management efficiency of selected Indian banks under changing economic conditions.

#### **V. SCOPE OF THE STUDY**

- The study focuses on the Asset–Liability Management (ALM) practices of selected Indian banks such as State Bank of India, ICICI Bank, HDFC Bank, Kotak Mahindra Bank, and Axis Bank.
- The study examines liquidity risk, interest rate risk, and foreign exchange risk management through various ALM techniques.
- The research is based on secondary data collected from annual reports, RBI publications, journals, research articles, and financial statements of banks.
- The study covers maturity gap analysis, cumulative gap analysis, Net Interest Income (NII) analysis, and scenario analysis to evaluate the effectiveness of ALM practices.

## V. RESEARCH DESIGN AND METHODOLOGY

In order to examine the assets – liabilities management of banks, four banks namely SBI bank, ICICI Bank, IDBI Bank and Karur Vysya Bank were considered. The risks associated with the banks were analyzed with the help of appropriate techniques.

### Methodology

The present study has been presented in three sections. Section -1 deals with the interest rate risk. Interest rate risk refers to changes in interest income due to changes in the interest rate. It arises due to different principal amounts and different maturity periods of banks' assets and liabilities. The changes in interest rates and exposed to interest rate risk effects the financial position of banks.

There will be an adverse impact on the financial aspects of banks because of interest rate risk exposure. Interest rate risk reduces the banks interest income, earnings and capital adequacy. The changes in interest rates also affect the underlying value of assets and liabilities and also off – balance sheet items

Interest rate risk refers to volatility in Net Interest Income (NII) is the difference between Interest income and interest expense and changes in Net Interest Margin (NIM) is the division of NII by earning assets. The formulae of NII and NIM are given below:

$$\text{NII} = \text{Interest income} - \text{Interest expense}$$

$$\text{NIM} = (\text{Interest income} - \text{Interest expense}) / \text{Earning asset}$$

The Gap is calculated as a difference between Rate Sensitive Assets (RSA) and Rate Sensitive Liabilities (RSL) of Banks belonging to various maturity buckets. If the calculated gap is positive which means RSAs are more than RSLs indicating that the bank will get benefit out of a rise in interest rate. On the other hand if the calculated gap is negative which means RSAs are less than RSLs indicating that the bank will lose out of a fall in interest rate. Gap analysis is also used as an interest rate sensitivity analysis; to mitigate interest rate risk arises due to changes in interest rates for rate sensitive assets and liabilities. Fixed rate assets and fixed rate liabilities will not be get affected by the changes in interest rates. So, those fixed rate assets and fixed rate liabilities are not prone for interest rate risk.

The changes in interest rate will affect the net interest income of banks. Hence, NII is calculated at various scenarios to alert the banks from the exposure that they may face due to interest rate fluctuations.

$$\text{NII} = \text{RSA} - \text{RSL}$$

$\text{NII} = \text{RSAs} \times \text{Li rA} - \text{RSL} \times \text{Li rl}$  Where  $\text{Li rA}$  = change in interest rate on RSAs  $\text{Li rl}$  = change in interest rate on RSLs, If  $\text{Li rA} = \text{Li rl}$  i.e. changes in interest rate on RSAs and RSLs is the same for the time period chosen then the change in net interest income can be written as  $\text{Li NII} = (\text{RSAs} - \text{RSLs}) \times \text{Lir}$  Since GAP was earlier expressed as a difference between RSAs and RSLs, a relationship can be expressed between a change in interest rates and a change in the bank's net interest income.  $\text{Li NII} = \text{GAP} \times \text{Li r}$  It is thus evident that a bank can immunize its net interest income over a given planning horizon by eliminating its funding Gap or when its RSAs are equal

to its RSL.

#### Section -2 deals with Liquidity Risk

ALM is based on measurement and management of liquidity risk. Any mismatch in maturity profile of assets and liabilities of bank's balance sheet leads to interest risk. According to RBI guidelines, if any bank faces this mismatch up to one year bucket would be considered as early warning signal. Hence banks need to focus on short term buckets such as 1-14 days and 15-28 days. Moreover the banks need to concentrate on cumulative mismatches by having the internal prudential committees.

#### Section -3 deals with foreign gap analysis

A foreign currency gap analysis will be conducted so that the banks can identify their risk position by comparing their foreign currency inflow and outflows.

### **VII. LIMITATIONS OF THE STUDY**

1. The study is based entirely on secondary data collected from published sources, which may contain inherent limitations regarding accuracy and reliability.
2. The research is restricted to selected Indian banks and may not represent the entire banking sector.
3. The study focuses mainly on liquidity risk, interest rate risk, and foreign exchange risk, while other banking risks are not analyzed extensively.
4. The analysis is limited to specific maturity buckets and selected scenario assumptions.
5. Variations in economic conditions, RBI policies, and market fluctuations may influence the study results.
6. The study covers a limited time period and may not capture long-term changes in banking operations and risk management practices.
7. Lack of access to confidential internal banking data restricts detailed analysis of ALM decision-making processes.

## VIII. DATA ANALYSIS AND INTERPRETATION

TABLE NO.1 LIQUIDITY RATE RISK :

Rs. in crores											
Time Bucket	1 day	2-7 days	8-14 days	15-30 days	31 days – upto 2 mont hs	Over 2 mont hs upto 3 mont hs	3-6 mont hs	6mot hs -1 year	1 year – 3 years	3 years-5 years	Over 5 years
<b>SBI BANK</b>											
Assets	62,02 1.01	81,88 3.25	45,82 7.82	64,12 0.64	88,68 8.93	60,03 6.93	1,82,9 52.43	10,66, 628.6 6	9,63,1 43.94	5,25,5 12.40	12,82, 981.9 2
Liabilities	43,12 5.35	18,21 4.44	16,96 2.84	41,10 5.18	79,90 2.61	60,55 7.90	1,89,5 65.69	2,38,6 45.46	11,55, 432.8 4	4,33,6 65.73	9,22,0 92.26
Gap	18,89 5.66	63,66 8.81	28,86 4.98	23,01 5.46	8,786 .32	- 520.9 7	- 6,613. 26	8,27,9 83.20	- 1,92,2 88.90	91,84 6.67	3,60,8 89.66
Cumulative Gap	18,89 5.66	82,56 4.47	1,11, 429.4 5	1,34, 444.9 1	1,43, 231.2 3	1,42,7 10.26	1,36,0 97.00	9,64,0 80.20	7,71,7 91.30	8,63,6 37.97	12,24, 527.6 3
<b>HDFC Bank</b>											
Assets	12,84 4.60	13,47 6.73	11,77 8.20	23,83 9.60	41,38 1.23	54,64 1.54	83,34 7.05	1,39,4 65.60	8,09,6 84.22	1,90,4 40.80	2,19,6 86.33
Liabilities	29,90 8.08	75,02 5.08	41,03 0.46	39,16 3.66	51,36 7.10	45,63 0.01	1,14,6 98.70	1,70,7 73.44	8,02,4 28.32	15,14 3.18	4,98,2 26.62
Gap	- 17,06 3.48	- 61,54 8.35	- 29,25 2.26	- 15,32 4.06	- 9,985 .87	9,011. 53	- 31,35 1.65	- 31,30 7.84	7,255. 90	1,75,2 97.62	- 2,78,5 40.29
Cumulative Gap	- 17,06 3.48	- 78,61 1.83	- 1,07, 864.0 9	- 1,23, 188.1 5	- 1,33, 174.0 2	- 1,24,1 62.49	- 1,55,5 14.14	- 1,86,8 21.98	- 1,79,5 66.08	- 4,268. 46	- 2,82,8 08.75

ve											
Gap											
ICICI Bank											
Asset											
s	10,04 2.40	1,16, 565.8 0	95,99 9.80	2,39, 586.3 0	4,44, 361.0 0	4,57,2 84.20	6,65,0 75.00	10,81, 144.6 0	28,83, 348.7 0	18,91, 304.2 0	23,11, 671.1 0
Liabi											
lities	1,27, 754.2 0	5,64, 803.8 0	2,28, 411.9 0	1,94, 054.5 0	5,59, 170.4 0	9,01,1 57.00	5,59,1 70.40	9,01,1 57.00	15,88, 983.4 0	35,21, 292.8 0	35,02, 420.5 0
Gap	- 1,17, 711.8 0	- 4,48, 238.0 0	- 1,32, 412.1 0	- 45,53 1.80	- 1,14, 809.4 0	- 4,43,8 72.80	1,05,9 04.60	1,79,9 87.60	12,94, 365.3 0	16,29, 988.6 0	11,90, 749.4 0
Cum											
ulati											
ve											
gap	- 1,17, 711.8 0	- 5,65, 949.8 0	- 6,98, 361.9 0	- 6,52, 830.1 0	- 7,67, 639.5 0	- 12,11, 512.3 0	- 11,05, 607.7 0	- 9,25,6 20.10	3,68,7 45.20	- 12,61, 243.4 0	- 24,51, 992.8 0
Kotak mahindra bank											
Asset											
s	1,553 .16	2,642 .88	3,061 .59	5,074 .61	10,83 7.81	12,14 0.90	15,80 7.61	45,95 1.14	1,31,1 41.29	2,275. 74	59,37 4.48
Liabi											
lities	10,74 1.88	17,06 7.46	9,838 .68	8,290 .28	16,73 9.01	14,52 6.90	44,61 7.13	54,38 7.26	1,84,6 54.71	1,812. 81	419.9 3
Gap	- 9,188 .72	- 14,42 4.58	- 6,777 .09	- 3,215 .67	- 5,901 .20	- 2,386. 00	- 28,80 9.52	- 8,436. 12	- 53,51 3.42	462.9 3	58,95 4.55
Cum											
ulati											
ve											
gap	- 9,188 .72	- 23,61 3.30	- 30,39 0.39	- 33,60 6.06	- 39,50 7.26	- 41,89 3.26	- 70,70 2.78	- 79,13 8.90	- 1,32,6 52.32	- 1,32,1 89.39	- 73,23 4.84

Axis bank											
Assets	16,75 9.25	35,14 8.43	19,80 6.80	25,46 4.69	37,95 3.46	39,82 3.61	51,88 7.72	1,16,1 97.84	32,91 8.35	2,805. 78	5,68,1 79.28
Liabilities	0	3,348 .59	5,278 .84	4,316 .13	6,609 .57	13,05 2.58	18,90 9.50	30,20 6.47	65,77 1.37	19,15 5.71	19,65 1.28
Gap	16,75 9.25	31,79 9.84	14,52 7.96	21,14 8.56	31,34 3.89	26,77 1.03	32,97 8.22	85,99 1.37	- 32,85 3.02	- 16,34 9.93	5,48,5 28.00
Cumulative gap	16,75 9.25	48,55 9.09	63,08 7.05	84,23 5.61	1,15, 579.5 0	1,42,3 50.53	1,75,3 28.75	2,61,3 20.12	2,28,4 67.10	2,12,1 17.17	7,60,6 45.17

### Interpretation

Table 1 describes the maturity pattern of rate sensitive assets and rate sensitive liabilities of four banks for the next years.

According to table 1, HDFC Bank and ICICI Bank are negative cumulative gap for most of the buckets of maturities. This reflects the future interest rate movements. The assets and liabilities profile of Kotak Mahindra Bank, showing a positive cumulative gap in case of 1-14 days, 15-30 days, 31 days – upto 2 months, 3-6 months, 6 months -1 year and 1 year – 3 years buckets. During the bucket periods 3 years- 5 years and above 5 years. Axis bank has shown a positive cumulative gap for all buckets. The ALM of banks is very important for

The assets and liabilities profile of ICICI The assets and liabilities profile of ICICI bank reveal that the bank has a positive cumulative gap in case of the very short term bucket of 1-14 days and 15- 28 days and for over 5 years bucket. For all-the other maturity buckets, ICICI is maintaining a negative gap. The ALM of the bank is quite sound for the current falling interest rate scenario. However, it shall have to be very vigilant about a possible interest rate reversal in the near future and adjust its asset-liability profile, Citi bank is maintaining a negative cumulative gap for most of the buckets of maturities. This reflects the banks' expectations of interest rate movements in the future. The strategy that Citibank is following is a sound one, as it will help the Table 1: Liquidity Risk Assessment of Banks, 2003 bank to take advantage of the falling interest rates by increasing the NII. However, this strategy is not without risk. Since all the shorter duration gaps are negative, a sudden firming up of interest rates will sharply reduce the NII of the bank

## INTEREST RATE RISK

A low level of risk or zero risk is always an objective for any financial institutions. This improves liquidity position of the bank, but also improves the bankers ability to achieve profitability, growth, capitalization and dividend goals for long run. The bank managers set a policy that keep potential losses due to adverse movements in market rates at affordable levels. Through the effective risk management, both interest rate risk as well as the credit risk in order to avoid the risk.

There are two different interest rate scenarios which affect the net interest income of the banks. Banks need to conduct analysis, in order to adjust its asset – liability profile to reduce the negative impact on NII. This information is also useful for hedging against the risks that are associated with banks using different hedging instruments like interest rate swaps, forward rate agreements, collars etc.

Table 2 shows the interest rate risk for four banks

Time Bucket	1 day	2-7 days	8-14 days	15-30 days	31 days – upto 2 months	Over 2 months upto 3 months	3-6 months	6 months -1 year	1 year – 3 years	3 years - 5 years	Over 5 years
Change of NII = Gap X (Change in interest rate )											
-50 basis point											
Rate sensitive assets											
SBI	-	-	-	-	-	2.604	33.0	-	961.44	-	-
BA	94.478	318.3	144	115.0	43.931	85	663	4139	45	459.	1804.
NK	3	4405	.32 49	773	6			.916		2333	4483
HD	85.317	307.7	146	76.62	49.929	-	156.	156.	-	-	1392.
FC	4	4175	.26 13	03	35	45.05 765	7582 5	5392	36.279 5	876. 4881	7014 5
ICI	588.55	2241.	662	-	574.04	2219.	-	-	-	8149	5953.
CI	9	19	.06 05	227.6 59	7	364	529. 523	899. 938	6471.8 265	.943	747
KO	45.943	72.12	33.	16.07	29.506	11.93	144.	42.1	267.56	-	-
TA	6	29	885 45	835			0476	806	71	2.31 465	294.7 7275
K											
AXI	-	-	-	-	-	-	-	-	164.26	81.7	-
S	83.796	158.9	72.	105.7	156.71	133.8	164.	429.	51	4965	2742.
	25	992	639 8	428	945	5515	8911	9568 5			64

Cumulative											
SBI BA NK	- 94.4 783	- 412.8 2235	- 557.147 25	- 672.2 2455	- 716.15 615	- 713. 551 3	- 680. 485	- 4820 .401	- 3858 .956 5	- 4318.1 8985	- 6122. 6381 5
HD FC	85.3 174	393.0 5915	539.320 45	615.9 4075	665.87 01	620. 812 45	777. 5707	934. 1099	897. 8304	21.342 3	1414. 0437 5
ICI CI	588. 559	2829. 749	3491.80 95	3264. 1505	3838.1 975	605 7.56 15	5528 .038 5	4628 .100 5	- 1843 .726	6306.2 17	1225 9.964
KO TA K	45.9 436	118.0 665	151.951 95	168.0 303	197.53 63	209. 466 3	353. 5139	395. 6945	663. 2616	660.94 695	366.1 742
AXI S	- 83.7 962 5	- 242.7 9545	- 315.435 25	- 421.1 7805	- 577.89 75	- 711. 752 65	- 876. 6437 5	- 1306 .600 6	- 1142 .335 5	- 1060.5 8585	- 3803. 2258 5
+100 basis point											
SBI BA NK	18.8 956 6	63.66 881	28.8649 8	23.01 546	8.7863 2	- 0.52 097	- 6.61 326	827. 9832	- 192. 2889	91.846 67	360.8 8966
HD FC	- 17.0 634 8	- 61.54 835	- 29.2522 6	- 15.32 406	- 9.9858 7	- 9.01 153	- 31.3 5165	- 31.3 0784	- 7.25 59	175.29 762	- 278.5 4029
ICI CI	- 117. 711 8	- 448.2 38	- 132.412 1	45.53 18	- 114.80 94	- 443. 872 8	105. 9046	179. 9876	1294 .365 3	- 1629.9 886	- 1190. 7494
KO TA K	- 9.18 872	- 14.42 458	- 6.77709	- 3.215 67	- 5.9012	- 2.38 6	- 28.8 0952	- 8.43 612	- 53.5 1342	0.4629 3	58.95 455
AXI S	16.7 592 5	31.79 984	14.5279 6	21.14 856	31.343 89	26.7 710 3	32.9 7822	85.9 9137	- 32.8 5302	- 16.349 93	548.5 28
Cumulative											
SBI BA NK	18.8 956 6	82.56 447	111.429 45	134.4 4491	143.23 123	142. 710 26	136. 097	964. 0802	771. 7913	863.63 797	1224. 5276 3
HD FC	- 17.0 634	- 78.61 183	- 107.864 09	- 123.1 8815	- 133.17 402	- 124. 162	- 155. 5141	- 186. 8219	- 179. 5660	- 4.2684 6	- 282.8 0875

	8					49	4	8	8		
ICI	-					-	-				
CI	117.7118	-565.9498	-698.3619	-652.8301	-767.6395	1.5123	1105.6077	-925.6201	368.7452	-1261.2434	-2451.9928
KO	-					-	-				
TA	9.18872	23.6133	30.39039	33.60606	39.50726	41.89326	70.70278	79.1389	132.65232	132.18939	73.23484
K											
AXI	16.75925	48.55909	63.08705	84.23561	115.5795	142.35053	175.32875	261.32012	228.4671	212.11717	760.64517
S											

### Interpretation

The table 2 shows the interest rate for four selected banks, explaining two different scenarios-

Scenario 1 – Interest rate decrease by 50 basis points

Scenario 2 – Interest rate increase by 100 basis points

Both the scenarios have been forecasted for next year showing the impact of decrease or increase in interest rates on Rate sensitive assets and Rate sensitive liabilities as well as on NII of four banks.

As SBI is showing a positive gap commulative gap, the decrease in interest rate by 50 basis points will have a negative NII of 6122.63 crores, where as if interest rate rose by 100 basis points in future, the NII of SBI bank will increase by 1224.52 crores. The scenario of rising interest rate is always desirable for SBI bank considering the presento situation into account.

In case of HDFC bank it is showing a negative Gap, but due to fall in interest rate the NII may be increased to Rs. 1414.04 crores, if the interest rate estimated to be increased then the NII will be showing a negative value as -282.80875.

ICICI Bank is also having negative cumulative gap of -24,51,992.80, if the interest rate is decrease by 50 basis the NII may be increased to Rs. 366.1742 crores, on the other hand if the interest rate is increased by 100 basis points the NII may be decreased to Rs. -2451.9928 crores.

KOTAK Mahendra bank is showing a negative cumulative gap of -73,234.84, if the interest rate is decrease by 50 basis the NII may be increased to Rs. 366.1742 crores, on the other hand if the interest rate is increased by 100 basis points the NII may be decreased to Rs. -73.23484 crores.

AXIS bank is showing a positive cumulative gap of 7,60,645.17, if the interest rate is decrease by 50 basis the NII may be decreased to Rs. -3803.22585 crores, on the other hand if the interest rate is increased by 100 basis points the NII may be increased to Rs. 760.64517 crores.

**FOREIGN CURRENCY GAP – PERCENTAGE IN ASSESTS**

Time Bucket	1 day	2-7 days	8-14 days	15-30 days	31 days – upto 2 months	Over 2 months upto 3 months	3-6 months	6 months - 1 year	1 year – 3 years	3 years- 5 years	Over 5 years
SBI	-49.3292	18.62881	7.011121	12.88037	-4.59977	-0.77135	-24.71238216	-32.04174579	45.52547024	40.65796306	66.47309
HDFC	83.96139	64.14396	-52.3694	31.55953	7.994633	-17.7746	-52.28867466	-203.7779408	-720.275933	-699.8481905	-1697.69
ICICI	95.4475331	72.77870946	-57.4254	0.711167	43.08871379	30.33267	-0.471827691	23.83098928	-380.987136	-163.1486595	23.29461
KOTAK	61.3151428	80.05664621	68.410157	85.1199334	85.27371342	81.87835	29.88911737	-231.7237789	68.65056783	38.63709212	100
AXIS	95.8113591	82.45775819	70.489361	51.8581638	-43.41356821	-47.6257	-123.395652	-418.7388868	-135.009997	31.83415103	58.32596482

**Interpretation**

It is observed from the above table that the SBI is having a negative gap in foreign currency in various buckets such as 1 day, 31 days -upto 2 months, over 2 months -upto 3 months, 6 months – 1 year. For days, over remaining all buckets it is showing a positive gap. For HDFC, for Over 2 months upto 3 months, 3-6 months, 6moths -1 year, 1 year – 3 years, 3 years- 5 years, Over 5 years the foreign currency is showing negative gap. For ICICI duration buckets of 8-14 days, 3-6 months, 1 year – 3 years, 3 years- 5 years showing negative gap. In case of KOTAK Bank, only bucket i.e. 6moths -1 year is showing a negative foreign currency gap and for AXIS Bank, 31 days – upto 2 months, Over 2 months upto 3 months, 3-6 months, 6 moths -1 year, 1 year – 3 years term bucket are showing negative gap. This can be concluded that the performance pf KOTAK bank is good when comparing to other select banks.

## IX. FINDINGS OF THE STUDY

- State Bank of India and Axis Bank maintained positive cumulative gaps in several maturity buckets, indicating better performance during rising interest rate conditions. SBI recorded a cumulative positive gap of nearly ₹12,24,527.63 crore under the +100 basis point scenario.

HDFC Bank and ICICI Bank showed negative cumulative gaps in most maturity buckets, indicating higher exposure to interest rate risk and fluctuations in Net Interest Income (NII).

- The NII analysis revealed that a 50 basis point decrease in interest rates reduced SBI's NII by about ₹6,122.63 crore and Axis Bank's NII by around ₹3,803.22 crore, whereas HDFC Bank showed a positive NII impact of nearly ₹1,414.04 crore.

- Foreign currency gap analysis showed that Kotak Mahindra Bank had comparatively lower foreign exchange risk exposure, with only one maturity bucket showing a negative gap.

- The study concluded that effective Asset–Liability Management practices, continuous gap monitoring, and scenario analysis help banks improve liquidity position, profitability, and overall financial stability under changing market conditions.

## X. CONCLUSION

Therefore, each and every bank should understand the importance of interest rate fluctuations and it is very important the bank also has sufficient flexibility to change its asset – liability ratio according to the movement in interest rate. As the risk is inevitable especially in financial intermediation and banking sectors, they have to realise the robust risk management with appropriate assets and liabilities portfolio. This will ensure the sustainable profitability and operational efficiency of the banks over a long period. The level of risks that the banks are facing is multiple dimensions. The result of domestic and international markets presence as well as the competition from them, the banks should adopt an ALM techniques that can withstand various risk exposures and to increase the risk tolerance of the bank management.

## XI. SUGGESTIONS OF THE STUDY

- Banks should strengthen their Asset–Liability Management practices by continuously monitoring maturity gaps and interest rate movements to reduce liquidity and interest rate risks.

- Banks need to adopt advanced risk management tools such as scenario analysis, stress testing, and hedging techniques to minimize the impact of fluctuations in interest rates and foreign exchange rates.

- ALCO committees should regularly review asset and liability portfolios and formulate effective strategies to improve profitability, maintain liquidity, and ensure long-term financial stability.

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