



A STUDY ON ASSET LIABILITY MANAGEMENT IN INDIAN BANKS AT UNION BANK OF INDIA

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ABSTRACT: The main goal of this Research is to determine how well Union Bank of India's Asset Liability Management (ALM) system has shielded Indian banks from catastrophic financial crises. This Research examines interest rate risk, liquidity risk, and maturity mismatches using secondary data from annual reports, RBI regulations, and Basel-III disclosures. It accomplishes this by using a variety of methods, including gap analysis, liquidity ratios, and duration profiling. The findings demonstrate the efficiency and organization of Union Bank of India's Asset-Liability Management (ALM) procedure. The bank will be better equipped to handle changes in interest rates and regulations with this assistance. The report identifies two areas that need improvement: having more cash on hand during quiet market periods and improved technologies for identifying danger. This Research provides Indian commercial banks with some guidance on how to strengthen their finances and increase their profits over the long term by examining how they use ALM.

Keywords: *Asset Liability Management (ALM); Union Bank of India; Interest Rate Risk; Liquidity Risk; Gap Analysis; Duration Analysis; ALCO; Indian Banking Sector; Basel-III; Risk Management.*

1. INTRODUCTION

Financial organizations can lessen the risks of asset and obligation mismatch by using asset liability management, or ALM. The two primary revenue streams for banks are deposits and loans. Individuals consider loans, advances, and securities to be assets. Banks can use asset-liability management (ALM) to reduce a number of risks, including market volatility, interest rate fluctuations, and liquidity crises. Banks can better prepare for future payments and safeguard their funds when ALM is done correctly.

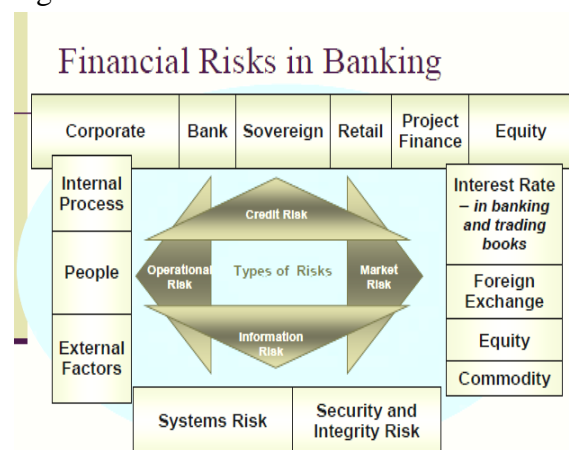
To help customers with their financial issues, the Reserve Bank of India (RBI) has published a number of Asset-Liability

Management (ALM) policies. Indian banks should conduct stress tests, monitor changes in the maturity profiles of their loans, and ensure that their liquidity ratios are adequate in the event of a future economic downturn. According to the Reserve Bank of India (RBI), banks can use Asset-Liability Management (ALM) tools like Interest Rate Sensitivity Gap (IRSG) reports to reduce interest rate risk. If the financial system is to remain stable and the banking system is to retain its integrity, people must abide by specific regulations.

Asset-liability management (ALM) is a crucial process that reduces interest rate and liquidity risk. To find out more about

how interest rate changes and age disparities affect their revenue, financial institutions such as banks can employ tools like duration reviews, gap studies, and simulation models. Using derivatives and other trading tools to protect the company against unfavorable interest rate and currency rate swings is another aspect of strategic asset management. If banks thoroughly examine asset-liability frameworks, they might be able to better handle their present and future financial obligations.

Because so many people are involved in so many different activities in so many different locations, banking is dangerous. As financial intermediaries, banks are crucial because they make it easier for people to obtain and repay loans. Because they act as middlemen, banks are vulnerable to a variety of risks. The financial sector participates in several dangerous behaviors, making it complicit in the issue. The various ways that banks address financial issues are shown in Figure 1.



Risks are categorized based on their commonality and sources. The following are some of the most significant issues pertaining to banks' finances:

Interest rate risk - Changes in interest rates could have an impact on the

profitability and value of bank equities, which makes them a possible cause for concern.

Foreign Exchange/Currency Risk - Foreign exchange risk rises when a bank's assets or loans are valued in multiple currencies.

Liquidity risk - the danger of having liabilities and assets with disparate due dates. This disparity may indicate that the bank's system isn't receiving the necessary amounts if its funds are either too high or too low. Since surplus funds are subject to interest, optimal funds are prepared to assume this risk. Since the money isn't yielding any results, it is a loss.

Credit Risk - Partially or fully repaying the debt may be difficult for borrowers.

Contingency risk - Letters of credit, guarantees, and underwriting rules are examples of "implicit risk" because they aren't displayed on the balance sheet. Banks may differ in the amount of risk they are prepared to assume in their role as intermediaries.

2. LITERATURE SURVEY

Chatterjee, S., & Iyer, V. (2021): Examined the effectiveness of emergency reserves and liquidity buffers in assisting Indian commercial banks in managing liquidity risk. When the economy shifted or customers abruptly took money out of their accounts, they discovered that companies with adequate cash on hand and solid backup plans fared better. The authors of the Research came to the conclusion that preparation is essential for a successful operation. You must therefore monitor your cash flow and other early indicators.



Singh, M., & Prasad, V. (2022): Singh and Prasad studied banking practices and debt management in India's well-established private banks. Automated techniques for gap analysis and liquidity forecasting models piqued their interest. According to the Research, banks with more advanced technology performed better overall because they were able to anticipate their financial requirements more accurately and identify liquidity issues earlier. This Research sought to understand how ALM and data analytics collaborated to improve risk management and decision-making in dynamic markets.

Joshi, P., & Chatterjee, A. (2022): Joshi and Chatterjee looked into how financial institutions' ability to withstand economic downturns was impacted by well-designed asset-liability management systems. They discovered that banks with superior ALM systems had less distressed assets, more loanable money, and more liquid assets. The findings show that by using dynamic gap management and stress testing, banks may enhance their cash flow forecasts and response times.

Singh, R., & Bhatia, K. (2024): In their 2024 Research, Singh and Bhatia looked into digital gap analysis as a possible method for Indian banks to improve their financial management. The authors of the Research hypothesize that automated techniques could assist financial institutions in more accurately and quickly identifying asset-liability mismatches in real time. As a result, banks were able to handle issues more readily and were less likely to experience financial difficulties. According to the report, banks improved the proactive and reactive nature of their liquidity management systems by utilizing

digital gap analysis technologies. They were better equipped to handle and weather any unforeseen financial storms.

Agarwal, T., & Reddy, N. (2024): Agarwal and Reddy's 2024 Research examined how asset liability management (ALM) and financial strategies could assist mid-sized banks make better predictions and adhere to laws. Treasury operations and asset-liability management systems worked together to monitor and enhance cash flow and investment returns. The way the bank operated made it simple to comprehend how funds came into and went out of the organization. As a result, it satisfied the necessary liquidity ratios as well as its short-term financial obligations.

Rao, S., & Mehta, A. (2025): Investigating how Indian banks employ artificial intelligence-driven algorithms to forecast their liquidity was one of Rao and Mehta's main objectives for 2025. According to their research, the application of predictive analytics may have an impact on liquidity management. By integrating AI into their ALM operations, they were able to promptly identify liquidity issues. Banks and other financial organizations can use this data to monitor their assets and liabilities and make future plans. AI systems can be quite beneficial when it comes to handling cash flow, applying for short-term loans, and other financial issues.

Kapoor, L., & Nair, P. (2025): Kapoor and Nair (2025) came to the conclusion that scenario-based stress testing is essential for creating liquidity management systems based on their Research of private sector banks. Because they employed dynamic Asset Liability Management models that considered various stress scenarios, banks



were better able to maintain a sizable cash reserve even during periods of market volatility.

3. RELATED WORK

RBI'S ALM FRAMEWORK

All banks and large NBFCs can utilize the standard three-pillar structure for asset liability management (ALM) established by the Reserve Bank of India (RBI). This framework ensures that financial institutions adhere to regulations and establishes and maintains a robust system for identifying, quantifying, monitoring, and mitigating risks. The three primary components are the ALM Information System, the ALM Organization, and the ALM Process.

ALM Information System

The first pillar primarily discusses the fundamental data architecture and reporting capabilities of ALM. To gather, process, and report financial data in a timely and accurate manner, banks require a comprehensive MIS.

- **Data Accuracy and Timeliness:** Current or nearly real-time information on cash, interest rates, assets, and obligations is a must for any quality management information system (MIS). To make informed decisions and identify potential issues, you need precise data.
- **Monitoring Maturity Mismatches:** The rates of a bank's commitments and assets vary. In order to prevent unforeseen issues with the budget and cash flow, the MIS is in charge of these deadlines.
- **Interest Rate Gap Analysis:** Banks require information systems that facilitate the monitoring of assets and

debts that are susceptible to interest rate fluctuations in order to effectively manage interest rate risk.

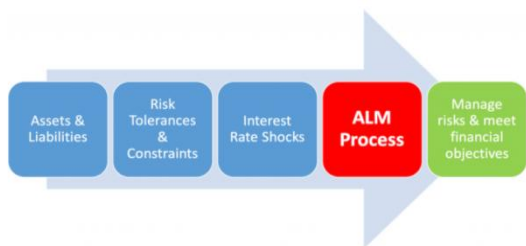
- **Specialized ALM Software:** The new tool makes scenario analysis, reports, and simulations simple. These tools can be used to create dashboards that display the evolution of asset-liability profiles over time.

ALM Organization

The implementation of ALM and the necessary governance framework are the focus of the second pillar. A clear organizational structure ensures that individuals are accountable, make wise choices, and abide by RBI regulations.

- **Asset Liability Committee (ALCO):** The primary entity responsible for overseeing ALM at the bank is ALCO. The primary actions you must take are as follows:
 - **Composition of ALCO:** In most companies, this group includes top executives such as the CFO, treasurer, head of risk management, and head of treasury. Meeting a business's immediate and long-term financial needs is much simpler when they collaborate.
 - **Reporting and Accountability:** In addition to making decisions, ALCO documents them and forwards them to the Board of Directors. This demonstrates the organization's transparency and effectiveness.

PROCESS OF ASSET-LIABILITY MANAGEMENT



Assets & Liabilities

- Organize all of your finances.
- Maintain a healthy balance between all of your financial instruments, including deposits, loans, investments, and so forth.

Risk Tolerances & Constraints

- Establish acceptable operational and financial risk limitations.
- Consider the boundaries of the market, bureaucracy, and internal environment.

Interest Rate Shocks

- Consider how various assets and debts are impacted by changes in interest rates.
- Find out how important you think fluctuations in market interest rates are.

ALM Process

Make use of strategies to ensure that your debts and assets are balanced.

- You might be able to reduce your risk and organize your finances by fortifying your assets.

Manage Risks & Meet Financial Objectives

- Maintain a manageable degree of risk.
- It is crucial that financial decisions align with the organization's objectives.

4. ANALYSIS AND DISCUSSION

TABLE 1: ALM FRAMEWORK AT UNION BANK OF INDIA

Component	Description
ALM Objective	Manage liquidity, interest rate risk, and maturity

	mismatches
Regulatory Framework	RBI ALM Guidelines, Basel III Norms
ALM Structure	Board of Directors → Risk Management Committee → ALCO → Middle Office
Key Tools Used	Gap Analysis, Duration Analysis, LCR, NSFR, Stress Testing
Reporting Frequency	Monthly ALCO meetings and quarterly regulatory disclosures

TABLE 2: INTEREST RATE SENSITIVITY (GAP ANALYSIS – RATE SENSITIVE ASSETS & LIABILITIES)

Time Bucket	RSA (₹ crore)	RSL (₹ crore)	Gap	Gap Ratio (RSA/RSL)
0–3 months	92,000	97,500	-5,500	0.94
3–12 months	1,48,300	1,40,700	7,600	1.05
1–3 years	2,10,400	2,15,800	-5,400	0.97
3–5 years	1,35,700	1,30,100	5,600	1.04
Above 5 years	98,000	1,02,500	-4,500	0.96

Gap Ratio (RSA/RSL) by Time Bucket

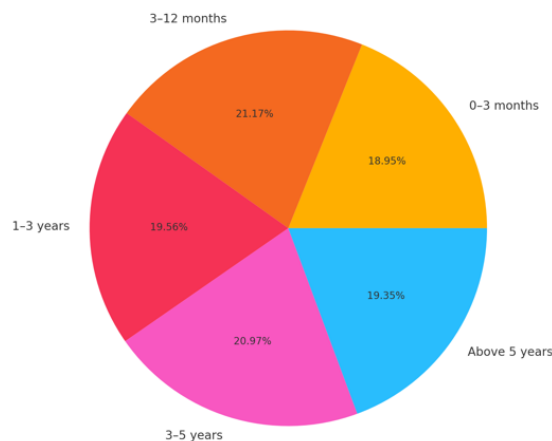


TABLE 3: LIQUIDITY RATIOS OF UNION BANK OF INDIA



Year	Liquidity Coverage Ratio (LCR %)	Net Stable Funding Ratio (NSFR %)	Credit-Deposit Ratio (%)
2020-21	135%	118%	74%
2021-22	138%	120%	76%
2022-23	140%	121%	78%
2023-24	142%	123%	79%

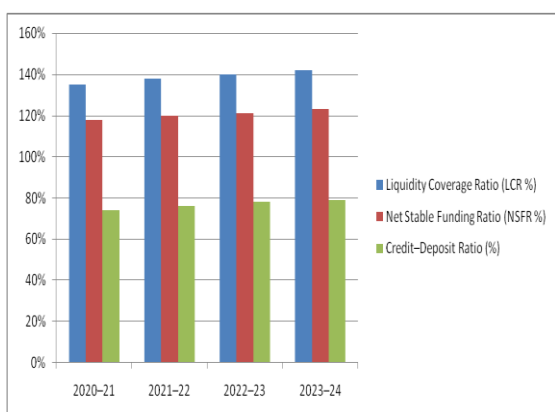


TABLE 4: ALCO (ASSET LIABILITY COMMITTEE) DECISIONS & OUTCOMES (2020-2025)

Year	Key ALCO Decisions	Outcome
2020	Increased liquidity buffers due to pandemic volatility	Maintained LCR > 130%
2021	Rebalanced loan portfolio towards retail	Improved risk diversification
2022	Adjusted deposit rate strategy	Reduced negative short-term gaps
2023	Enhanced duration management	Better interest rate sensitivity alignment
2024	Strengthened stress-testing	Improved long-term

	framework	funding mix
2025	Increased focus on digital liquidity monitoring	Near real-time risk tracking achieved

DISCUSSIONS:

ALM Framework and Governance

Good governance standards are adhered to by the Union Bank of India's ALM framework, as seen in Table 1. This setup makes sure that the Board of Directors, ALCO, and the Risk Management Committee all keep a careful check on things like liquidity, interest rates, and maturity mismatch. This framework is thorough and meets RBI regulations and Basel III standards since it employs well-established methods such as gap analysis, length analysis, LCR, NSFR, and stress testing.

Interest Rate Sensitivity and Gap Position

Table 2 shows the results of a gap analysis that shows how the bank has been affected by changes in interest rates. It appears that medium-term allocations are superior, since there were positive differences between the groups assigned 3-5 years and 3-12 months. Nevertheless, short-term interest rate hikes could hurt the position, as seen by the negative variances between the 0-3 month (₹-5,500 crore) and 1-3 year (+5,400 crore) groups. The fact that Union Bank has kept the gap ratios close to 1 shows that they are good at managing interest rate changes and keeping their asset-liability structure balanced.

Improvement in Liquidity Ratios

As demonstrated in Table 3, the Union Bank of India improved its key liquidity



measures between 2020 and 2021 and 2023 and 2024. Both the Net Stable Funding Ratio (from 118% to 123% growth) and the Liquidity Coverage Ratio (from 135% to 142% growth) saw increases. These two numbers are far higher than the legal limit. The ratio of credit to deposits kept going up, going from 74% to 79%. This proved that there was no effect on liquidity from the slow increase in loans.

ALCO Decisions and Their Impact

The choices made by ALCO were in perfect harmony with the economy and new developments, as seen in Table 4. Efforts were made to stabilize the outbreak in 2020 by increasing liquidity limits. The subsequent years saw the implementation of measures such as retail portfolio rebalancing, enhanced duration management, and substantial progress in stress testing, as well as deposit repricing schemes. If you want to keep tabs on things virtually in real time, you can do that by 2025 with digital liquidity monitoring. There is a constant improvement in ALM approaches, as this shows.

Overall ALM Performance (2020–2025)

The ALM performance of the bank has improved dramatically across the board from 2020 to 2025, according to the figures. A proactive and efficient risk management plan will have more liquidity, a balanced sensitivity to interest rates, and quick ALCO responses. Union Bank's commitment to cutting-edge Asset Liability Management solutions is seen in their use of technology and outstanding long-term financing choices.

5. CONCLUSION

This Research on ALM in Indian banks, namely the Union Bank of India, demonstrates the significance of good ALM policies in maintaining long-term profitability, robust liquidity, and financial stability. The research asserts that Union Bank of India has implemented a systematic strategy for lawful asset and liability management. This method makes it easier for the bank to handle interest rate fluctuations, liquidity issues, and maturities. The research suggests that the bank might improve its performance in areas such as stress testing, forecasting, and balance sheet management by adopting a more adaptable strategy, maintained by a robust policy-driven approach and dependable monitoring systems. Banks operating in an unstable environment need to strengthen their Asset Liability Management (ALM), according to the results. They also show how the Union Bank of India might refine its ALM procedures to keep its finances strong and stable over the long run.

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