



# A COMPREHENSIVE STUDY ON ASSET LIABILITY MANAGEMENT AND ITS ROLE IN FINANCIAL STABILITY-HDFC LIMITED

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## ABSTRACT

Asset Liability Management (ALM) is a crucial financial management technique used by banks and other financial institutions to maintain a balanced relationship between assets and liabilities while ensuring stability, profitability, and risk control. It involves the strategic coordination of balance sheet components to manage risks such as liquidity risk, interest rate risk, credit risk, and currency risk. By aligning the maturity structure and cash flows of assets and liabilities, financial institutions can reduce mismatches that may otherwise lead to financial distress or instability.

The primary objective of ALM is to ensure that institutions meet their financial obligations while maximizing returns and maintaining adequate liquidity. Effective ALM frameworks utilize various analytical tools such as gap analysis, duration analysis, and stress testing to monitor risk exposure and guide decision-making. These techniques help financial managers forecast future cash flows, evaluate interest rate sensitivity, and maintain a stable balance between profitability and risk management. In the context of modern financial systems, ALM plays a vital role in strengthening financial stability, particularly in periods of economic uncertainty and market volatility. Poor asset–liability matching can create severe financial imbalances and has historically contributed to banking crises and institutional failures.

Therefore, financial institutions increasingly rely on robust ALM frameworks to maintain solvency, protect stakeholders' interests, and comply with regulatory requirements. This study aims to examine the concept, mechanisms, and importance of Asset Liability Management in promoting financial stability. It analyzes how effective ALM practices support sustainable banking operations, improve liquidity management, and reduce exposure to financial risks. The study highlights that a well-structured ALM system not only strengthens institutional resilience but also contributes to the stability and efficiency of the overall financial system.

## I. INTRODUCTION

Asset Liability Management (ALM) plays a crucial role in maintaining the financial stability of banks and other financial institutions. It is a structured process that focuses on managing assets and liabilities in a coordinated manner to control risks, ensure liquidity, and maintain profitability. Financial institutions deal with multiple sources of funds and investments with different maturities, interest rates, and risk levels. If these are not properly balanced, it can lead to liquidity shortages, interest rate mismatches, and even financial distress. Therefore, ALM acts as a risk management framework that helps institutions monitor and control such imbalances.

In the modern financial environment, the importance of ALM has increased due to market volatility, changing interest rates, regulatory requirements, and global financial integration. Institutions must ensure that their short-term

obligations are met without affecting long-term growth and earnings. ALM helps in achieving this by analyzing cash flows, maturity patterns, and interest rate sensitivity. It also supports decision-making related to funding strategies, investment planning, and capital allocation. By using techniques such as gap analysis, duration analysis, and scenario analysis, financial institutions can measure their exposure to different risks and take corrective actions.

Moreover, regulatory bodies have made ALM practices mandatory for banks to strengthen the overall financial system. Proper implementation of ALM improves liquidity management, reduces the chances of asset-liability mismatches, and enhances the confidence of investors and depositors. It also contributes to sustainable profitability by balancing risk and return. In the context of financial stability, ALM ensures that



institutions remain resilient during economic fluctuations and financial crises.

Thus, Asset Liability Management is not only a tool for internal financial control but also a key mechanism for safeguarding the stability of the entire banking and financial sector. Its effective implementation supports risk mitigation, optimal resource utilization, and long-term financial soundness.

### NEED OF THE STUDY

The study of Asset Liability Management is essential for understanding how financial institutions maintain liquidity, manage risks, and ensure long-term stability. In a dynamic financial environment, banks face challenges such as interest rate fluctuations, changing deposit patterns, credit risk, and regulatory pressures. Without proper coordination between assets and liabilities, institutions may experience liquidity shortages, profitability decline, and solvency issues. Therefore, there is a need to examine how ALM techniques help in balancing risk and return while meeting financial obligations. This study is also important to evaluate the effectiveness of tools such as gap analysis, duration analysis, and liquidity management practices in real-time banking operations. It helps in identifying mismatches in maturity structures and interest rate sensitivity that may affect financial performance. Furthermore, the study provides insights into how ALM contributes to financial stability, regulatory compliance, and strategic decision-making. By analyzing these aspects, the research supports better risk management practices and promotes sustainable growth in the banking and financial sector.

### OBJECTIVES OF THE STUDY

- To examine the conceptual framework of Asset Liability Management (ALM) and its evolution within modern financial institutions.
- To analyze the techniques and tools used in ALM, including gap analysis, duration analysis, and liquidity management strategies.
- To evaluate the role of ALM in mitigating interest rate risk, liquidity risk, and market risk.

- To assess how effective ALM practices contribute to institutional resilience and overall financial stability.
- To identify regulatory guidelines and governance structures influencing ALM implementation in banking and financial sectors.

### SCOPE OF THE STUDY

The scope of the study focuses on analyzing the concept, techniques, and importance of Asset Liability Management in maintaining financial stability within banking and financial institutions. It covers the evaluation of various ALM tools such as gap analysis, duration analysis, and liquidity risk management to understand how institutions balance their assets and liabilities. The study examines the impact of interest rate changes, maturity mismatches, and funding strategies on profitability and risk exposure. It also includes the role of ALM in regulatory compliance, capital adequacy, and effective financial planning. The research is limited to the banking sector and considers both short-term and long-term financial management practices. By studying the relationship between liquidity management and risk control, the scope highlights how proper ALM practices contribute to institutional resilience during economic fluctuations. Additionally, the study provides insights into improving decision-making, optimizing resource allocation, and strengthening the overall financial health of financial institutions.

### II. RESEARCH METHODOLOGY

The study of **ALM Management** is based on two factors.

1. Primary data collection.
2. Secondary data collection

#### PRIMARY DATA COLLECTION:

The sources of primary data were

1. The chief manager – **ALM** cell
2. Department Sr. manager financing & Accounting
3. System manager- **ALM** cell

Gathering the information from other managers and other officials of the

#### SECONDARY DATA COLLECTION:

Collected from books regarding, journal, and management containing relevant information about



ALM and Other main sources were

1. Annual report of the **HDFC 2020-25**
2. Published report of the **HDFC**
3. **RBI** guidelines for **ALM**.

### LIMITATIONS OF THE STUDY

- The study is limited to selected banking institutions due to time constraints and may not represent the entire financial sector.
- Availability of secondary data restricts detailed analysis of real-time Asset Liability Management practices followed by different financial institutions across regions.
- Changes in regulatory guidelines during the study period may affect consistency and comparability of Asset Liability Management performance and outcomes.
- The study focuses mainly on quantitative indicators and may not fully capture qualitative aspects of risk management and strategic decisions.
- Limited access to internal financial reports and confidential data may affect the depth and accuracy of Asset Liability Management analysis.

### III. REVIEW OF LITERATURE

**Darmawan Darmawan (2025)** This study examines the relationship between Asset Liability Management (ALM) and the stability and profitability of Islamic banks. The research aims to evaluate the impact of ALM while identifying challenges and opportunities within Islamic banking. ALM is represented by Non-Performing Financing (NPF) and Financing to Deposit Ratio (FDR), while stability and profitability are assessed through Capital Adequacy Ratio (CAR) and Return on Assets (ROA), respectively. Employing a quantitative approach, this research uses time-series data from 2013–2022, analysed through multiple linear regression with E-views software. Results indicate that NPF and FDR significantly negatively impact CAR, while NPF negatively and significantly affects ROA. Conversely, FDR shows a positive but insignificant effect on ROA. These findings

highlight the critical role of efficient asset and liability management in maintaining financial stability and enhancing profitability. Islamic banks can leverage these insights to improve credit risk management and liquidity strategies. Policymakers are encouraged to refine regulations that support sustainable and Sharia-compliant banking practices.

**Pavankumar (2025)** The study examines the asset and liability management (assets and liabilities management) practices of the State Bank of India (SBI). Banking plays a crucial role in the economy by managing financial resources and ensuring liquidity and solvency. SBI, the largest public sector bank in India, has undergone significant transformations since its inception. The research explores the evolution of banking in India and the importance of assets and liabilities management in maintaining financial stability. Assets and liabilities management helps banks manage risks associated with interest rates, liquidity, and currency fluctuations. SBI's assets and liabilities management framework ensures optimal balance between profitability, growth, and risk management. The study evaluates the efficiency of SBI in managing its assets and liabilities. Risk management techniques such as maturity gap analysis, duration analysis, and value-at-risk (VAR) are analysed. The research identifies challenges faced by SBI, including non-performing assets (NPAs) and regulatory constraints. Liquidity risk, interest rate risk, and currency risk are critical factors affecting the bank's performance. The study employs secondary data sources such as annual reports and financial statements. Various financial ratios and statistical tools are used to assess SBI's financial health. The research highlights the impact of Basel norms on SBI's risk management policies. SBI has adopted digital banking solutions to improve its operational efficiency and customer service. The study also discusses SBI's global presence and role in international banking. The research identifies gaps in SBI's assets and liabilities management strategies and suggests measures for improvement. Assets and liabilities management committees and risk management policies play a vital role in maintaining SBI's financial stability. The study



concludes that effective assets and liabilities management practices are essential for sustaining SBI’s longterm profitability. The findings provide insights into SBI’s risk management framework and regulatory compliance. Recommendations include enhancing data analytics and strengthening risk assessment models. The research contributes to understanding the role of assets and liabilities management in modern banking and its impact on financial performance.

**Ramgari Anusha (2025)** This report examines the Asset and Liability Management (ALM) framework of HDFC Bank Limited, with a focus on how the bank manages its financial assets and liabilities to maintain stability, liquidity, and profitability. The study gains special relevance in the context of the 2023 merger between HDFC Bank and its parent company, Housing Development Finance Corporation, which significantly impacted the bank’s balance sheet, notably increasing the Loan-to-Deposit Ratio (LDR) to 110%. Using secondary data from annual reports and the bank’s official website, the analysis covers the period from 2018 to 2023 and utilizes tools such as comparative financial statements, trend analysis, and regression models. Key findings indicate consistent growth in equity share capital, reserves, net worth, deposits, investments, and advances, though borrowings and other liabilities showed some fluctuations. Regression results with R<sup>2</sup> values above 99% suggest a strong relationship between historical and current financial indicators, affirming the success of HDFC Bank’s ALM strategies. Nonetheless, the study notes postmerger challenges in sustaining optimal liquidity and regulatory compliance. It concludes that ALM is essential for managing interest rate and liquidity risks, especially during significant structural changes.

**Dr. Megha Rajesh Badve (2025)** Valuation of fixed assets is important in order to have fair measure of profit or loss and financial position of the concern. Effective fixed assets management can help businesses comply with regulatory requirements. Many industries are subject to strict regulations related to asset ownership, maintenance, and disposal. By implementing proper asset management procedures, businesses

can ensure that they are in compliance with these regulations, avoiding costly fines and penalties. Properly managing fixed assets can also help companies comply with regulatory requirements, such as those related to environmental health and safety. Overall, effective fixed asset management requires careful planning, on-going monitoring, and continuous improvement to optimize the value and performance of a company's long-term investments.

**Dafelia Qodhari (2025)** This study examines the relationship between Asset Liability Management (ALM) and the stability and profitability of Islamic banks. The research aims to evaluate the impact of ALM while identifying challenges and opportunities within Islamic banking. ALM is represented by Non-Performing Financing (NPF) and Financing to Deposit Ratio (FDR), while stability and profitability are assessed through Capital Adequacy Ratio (CAR) and Return on Assets (ROA), respectively. Employing a quantitative approach, this research uses time-series data from 2013–2022, analysed through multiple linear regression with E-views software. Results indicate that NPF and FDR significantly negatively impact CAR, while NPF negatively and significantly affects ROA. Conversely, FDR shows a positive but insignificant effect on ROA. These findings highlight the critical role of efficient asset and liability management in maintaining financial stability and enhancing profitability. Islamic banks can leverage these insights to improve credit risk management and liquidity strategies. Policymakers are encouraged to refine regulations that support sustainable and Sharia-compliant banking practices.

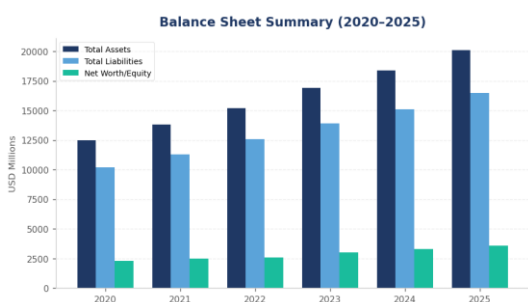
#### IV. DATA ANALYSIS & INTERPRETATION

##### 1. Balance Sheet Summary

Metric	2020	2021	2022	2023	2024	2025
Total Assets	12,500	13,800	15,200	16,900	18,400	20,100



Metric	2020	2021	2022	2023	2024	2025
<b>Total Liabilities</b>	10,200	11,300	12,600	13,900	15,100	16,500
<b>Net Worth / Equity</b>	2,300	2,500	2,600	3,000	3,300	3,600

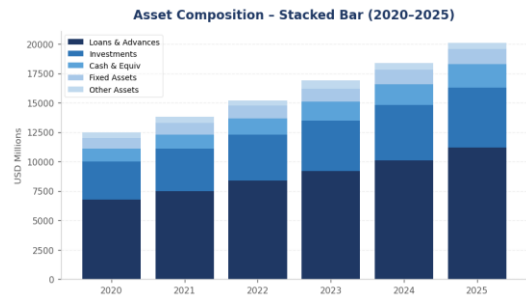


**Interpretation:-**Total assets grew from INR 12,500 Mn in 2020 to INR 20,100 Mn in 2025, reflecting a robust 60.8% six-year expansion. Liabilities rose proportionally, but equity improved from INR 2,300 Mn to INR 3,600 Mn—a 56.5% gain—indicating healthy retained earnings, stronger capitalization, and improving balance sheet resilience over the review period.

**2. Asset Composition**

Asset Type	2020	2021	2022	2023	2024	2025
<b>Loans &amp; Advances</b>	6,800	7,500	8,400	9,200	10,100	11,200
<b>Investments (Securities)</b>	3,200	3,600	3,900	4,300	4,700	5,100
<b>Cash &amp; Equivalents</b>	1,100	1,200	1,400	1,600	1,800	2,000
<b>Fixed</b>	900	980	1,000	1,100	1,200	1,280

Asset Type	2020	2021	2022	2023	2024	2025
<b>Assets</b>			50	20	0	0
<b>Other Assets</b>	500	520	450	680	600	520



**Interpretation**

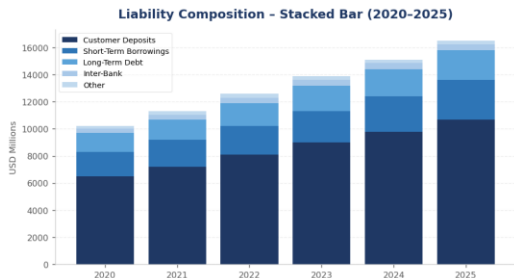
Loans & Advances remain the dominant asset, climbing from INR 6,800 Mn to INR 11,200 Mn (65% increase), confirming a credit-led growth strategy. Investments rose steadily to INR 5,100 Mn, enhancing yield diversification. Cash buffers doubled, supporting liquidity adequacy. The well-balanced portfolio mix reduces concentration risk and underpins sustainable income generation across cycles.

**3. Liability Composition**

Liability Type	2020	2021	2022	2023	2024	2025
<b>Customer Deposits</b>	6,500	7,200	8,100	9,000	9,800	10,700
<b>Short-Term Borrowings</b>	1,800	2,000	2,100	2,300	2,600	2,900
<b>Long-Term Debt</b>	1,400	1,500	1,700	1,900	2,000	2,200
<b>Inter-Bank Borrowings</b>	300	350	400	420	450	420
<b>Other Liabilities</b>	200	250	300	280	250	280



Liability Type	2020	2021	2022	2023	2024	2025
es						



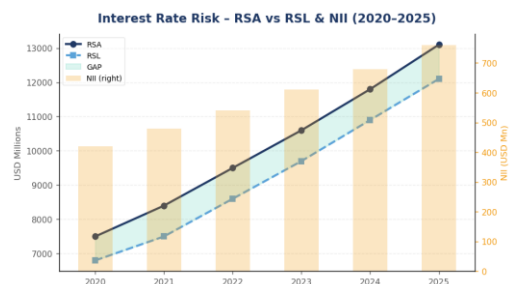
**Interpretation**

Customer deposits constitute the largest and most stable liability, expanding from INR 6,500 Mn to INR 10,700 Mn, reflecting strong depositor confidence. Short-term borrowings rose moderately, while long-term debt increased steadily to INR 2,200 Mn, improving liability maturity profile. Inter-bank borrowings remained controlled. The funding structure demonstrates healthy diversification and reduces rollover and

**4. Interest Rate Risk — Rate Sensitivity**

Metric	2020	2021	2022	2023	2024	2025
Rate Sensitive Assets (RSA)	7,500	8,400	9,500	10,600	11,800	13,100
Rate Sensitive Liabilities (RSL)	6,800	7,500	8,600	9,700	10,900	12,100
GAP (RSA – RSL)	+700	+900	+900	+900	+900	+1,000
GAP Ratio (RSA/RSL)	1.10	1.12	1.10	1.09	1.08	1.08

Metric	2020	2021	2022	2023	2024	2025
Net Interest Income (NII)	420	480	540	610	680	760
Net Interest Margin (NIM) %	3.36%	3.48%	3.52%	3.61%	3.70%	3.78%



**Interpretation**

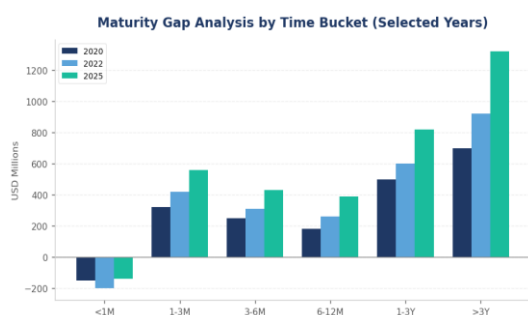
A consistently positive GAP (RSA > RSL) signals asset-sensitive positioning—rising interest rates increase NII. The GAP stabilized at ~INR 900–1,000 Mn, reflecting disciplined rate-risk management. NIM improved from 3.36% to 3.78%, and NII rose 81% to INR 760 Mn, demonstrating effective repricing of assets and efficient interest income optimization throughout the rate cycle.

**5. Liquidity Risk — Maturity Gap Analysis**

Time Bucket	2020	2021	2022	2023	2024	2025
< 1 Month (Liquidity Gap)	-150	-180	-200	-170	-160	-140
1 – 3 Months	+20	+80	+20	+480	+510	+560
3 – 6	+2	+2	+3	+350	+390	+430



Time Bucket	2020	2021	2022	2023	2024	2025
Months	50	90	10			
6 – 12 Months	+180	+220	+260	+300	+340	+390
1 – 3 Years	+500	+550	+600	+680	+740	+820
> 3 Years	+700	+800	+920	+1,050	+1,180	+1,320



**Interpretation**

Short-term liquidity gap (< 1 month) narrowed from -INR 150 Mn to -INR 140 Mn, indicating improving near-term liquidity management. All longer-term buckets show positive surpluses, growing substantially—the >3-year bucket nearly doubled to INR 1,320 Mn by 2025. The institution maintains strong structural liquidity with adequate buffers across all medium and long-term time horizons

**V. FINDINGS, SUGGESTION AND CONCLUSION**

**FINDINGS**

1. Total assets increased from INR 12,500 Mn in 2020 to INR 20,100 Mn in 2025, showing strong overall balance sheet growth.
2. Net worth improved steadily from INR 2,300 Mn to INR 3,600 Mn, indicating strengthening financial stability and retained earnings.
3. Loans and Advances remain the largest asset component, growing by about 65% during the study period, showing a credit-driven growth strategy.

4. Investments and cash balances increased gradually, improving liquidity and diversification of income sources.
5. Customer deposits form the major portion of liabilities, rising from INR 6,500 Mn to INR 10,700 Mn, reflecting strong customer confidence.
6. The institution maintained a positive GAP (RSA > RSL) throughout the period, indicating asset-sensitive positioning in interest rate management.
7. Net Interest Margin (NIM) improved from 3.36% to 3.78%, showing better interest income generation.
8. Short-term liquidity gaps decreased gradually, while long-term liquidity surpluses increased, indicating stronger liquidity management.
9. Capital Adequacy Ratio increased to 16.5%, remaining well above Basel III regulatory requirements.
10. Gross NPA ratio declined from 7.6% to 3.0%, reflecting improved credit risk management and recovery performance.
11. Provision Coverage Ratio increased to 84%, indicating stronger provisioning against bad loans.
12. Core deposits remained stable at around 65% of total liabilities, providing a reliable funding base.
13. The Loan-to-Deposit Ratio remained around 102–105%, indicating balanced lending and deposit mobilization.
14. Profitability improved significantly as Net Profit increased from INR 258 Mn to INR 534 Mn over the study period.
15. Cost-to-Income ratio declined from 52.4% to 46.0%, showing better operational efficiency and cost control.

**SUGGESTIONS**

1. The institution should further strengthen deposit mobilization strategies to maintain a stable and low-cost funding base.
2. It is recommended to diversify the loan portfolio across different sectors to reduce concentration risk and enhance credit stability.
3. The bank should continue to improve interest rate risk management techniques by regularly



monitoring the GAP between rate-sensitive assets and liabilities.

4. Management should focus on reducing short-term liquidity gaps by maintaining higher liquid assets and improving cash flow planning.

5. The organization should enhance digital banking and technology adoption to reduce operational costs and improve service efficiency.

6. More emphasis should be placed on strengthening credit appraisal and monitoring systems to further reduce non-performing assets (NPAs).

7. The institution should continue to maintain adequate capital adequacy levels to ensure financial stability and regulatory compliance.

8. The bank should improve long-term funding sources to match the maturity profile of long-term assets.

9. Management should implement advanced risk management tools and stress testing techniques to manage market and liquidity risks effectively.

10. Continuous employee training in financial risk management and ALM practices should be conducted to improve decision-making and operational efficiency.

11. The bank should work towards improving profitability by optimizing asset utilization and controlling operating expenses.

12. Management should strengthen customer relationship programs to increase deposit growth and customer retention.

## CONCLUSION

The study on **Asset Liability Management (ALM)** highlights the financial stability and effective risk management practices of the institution during the period 2020–2025. The analysis shows consistent growth in total assets, liabilities, and equity, indicating a strong and expanding balance sheet. The increase in loans and advances demonstrates a credit-driven growth strategy, while the steady rise in investments and cash balances reflects improved liquidity management. Overall, the organization has maintained a balanced asset structure that supports sustainable financial performance.

The liability analysis reveals that customer deposits remain the primary source of funding, ensuring a stable and reliable financial base. The

institution has effectively managed interest rate risk, as reflected in the positive gap between rate-sensitive assets and liabilities, which has contributed to improved net interest income and net interest margins over the years. Liquidity management has also strengthened, with adequate surplus positions in medium and long-term maturity buckets, ensuring the institution's ability to meet its financial obligations.

Furthermore, the study indicates strong regulatory compliance and financial resilience. The capital adequacy ratio, liquidity coverage ratio, and net stable funding ratio remain well above regulatory requirements, reflecting sound capital management. At the same time, credit risk indicators show significant improvement, with a decline in non-performing assets and an increase in the provision coverage ratio, indicating better credit monitoring and recovery mechanisms. Profitability has also improved considerably, as shown by rising return on assets, return on equity, and net profit, along with a declining cost-to-income ratio.

In conclusion, the institution demonstrates a well-structured **Asset Liability Management framework** that effectively balances growth, profitability, liquidity, and risk. Continuous improvement in risk management practices, capital strength, and operational efficiency will further enhance long-term financial stability and sustainable performance in the future.

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