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Assets and Liabilities Management in Indian Banking System – An Overview

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ABSTRACT: Assets Liability Management is playing pivotal role in development and management of assets and liabilities in Indian Banking System. The present study explores the management of Assets and Liabilities in Indian Banking System and ALM Practices in Indian Banking System in terms of management of credit risk, interest rate risk, liquidity risk, foreign exchange risk and operational risk. The data has been collected from the secondary sources such as RBI guidelines, reports etc. The practice of mitigating financial risks resulting from a mismatch of assets and liabilities.

KEYWORDS: Indian Banking System, ALM Practices, Operational Risk, Credit Risk

I. INTRODUCTION

Assets Liability Management as a concept is gradually gaining importance in Indian Banking System on the background of ongoing financial reforms. Asset and Liability Management (ALM) concept is the examination of all the assets and liabilities simultaneously on continuous basis with a view to ensure proper balance between funds mobilization and their utilization with respect to their maturity profile, yield and risk exposure etc. The concept recognizes the implicit relationship between the assets and liabilities and related components. It is some time synonymously considered as funds management. In fact, the use of assets and liability management technique is believed to be dynamic and rational approach towards fund management in banks. Since all the assets and liabilities appear in the balance sheet, the management of the same is also called the Balance sheet management. It involves 1) quantifications of risk and 2) conscious decision making with regard to structure of assets liability in order to maximize interest earning within framework of perceived risk.

II. REVIEW OF LITERATURE

Ms. Pragathi K.M and Dr. Veena K.P (2018) have conducted An Analysis of Asset-Liability Management in Banking Sector: A Case Study of Kotak Mahindra Bank. The study attempts to understand the theoretical background of Assets Liability Management, assess the Profitability Position of Kotak Mahindra Bank, Performance of Profit and Loss Account and Balance Sheet Ratios and Debt Coverage Ratio of Kotak Mahindra Bank. In this paper data has been collected from secondary sources from annual reports of Kotak Mahindra Bank from the period of 2013-14 to 2017-18.

R.BharathVajan, K.P.Thooyamani and Vignesh A (2017) have conducted A Study on Asset Liability Management. The study attempts to compare the Asset and Liability variance, impact of ALM on the profitability of banks and identify the Asset Liability performance of Indian Overseas Bank. For the study data collected from secondary sources and analysed through Statistical tools used are comparative statement, ratio analysis, mean, standard deviation, coefficient of variation. From the study net profit ratio, interest expenses ratio and operating ratio are increased.

P.Sheela and TejaswiniBastray (2015) have conducted a study on Asset-Liability-Management– A Comparative Study of a Public and Private Sector Bank. The main aim of the study is to understand the key policy decision regarding the strategic Asset Liability Management. The study is descriptive in nature, secondary data has been used for the analysis of financial information. In the study analysis of short-term liquidity for the two banks is done for a period of 5 years (2009-2014) by using Gap analysis model for respective bank. From the study both the banks have been exposed to interest rate risk and Union bank of India has a better Asset-Liability-Management (ALM) framework in practice.



Dr. Anurag B Singh and Ms. Priyanka Tandon (2012) have conducted a study on Asset - Liability Management in Indian Banking Industry. The attempts to examines strategies for asset-liability management from the asset side as well as the liability side, particularly in the Indian context, describe the concept and application of ALM technique and the emerging contours of conglomerate financial services and their implications for asset-liability management. The study is descriptive in nature. The data had been collected from the secondary sources such as RBI guidelines, reports etc.

Objectives of the study:

1. To know the management of Assets and Liabilities in Indian Banking System.
2. To examine the ALM Practices in Indian Banking System.

Assets and Liabilities Management in Indian Banking System

The practice of mitigating financial risks resulting from a mismatch of assets and liabilities.

Asset and liability management is the practice of managing financial risks that arise due to mismatches between the assets and liabilities as part of an investment strategy in financial accounting.

ALM Practices in Banks

Reserve Bank of India has issued ALM guidelines on October 1999 on risk management. Taking into consideration the diversity of varying size of balance sheet items between banks the RBI indicated that banks could design their risk management framework as per their respective requirements dictated by the size and complexity of business, risk philosophy, market perception and the existing level of capital. ALM practices aim at reducing various risks to which the banks are exposed. They relate broadly to (i) credit risk, (ii) interest rate risk (iii) liquidity risk (iv) foreign exchange risk and (v) operational risk.

1) Credit Risk

Credit risk arises due to default in lending. Credit risk emanates because of non-payment of funded and non funded exposures by the counter party. Credit risk is the most significant risk more so in Indian scenario where the NPA level of banking system is significantly high.

Credit risk is most simply defined as the potential that a bank borrower or counter party will fail to meet its obligations in accordance with agreed terms. Credit risk is the possibility of losses associated with diminution in the credit quality of borrowers or counterparties. It involves inability or unwillingness of a customer to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions. Alternatively, losses result from reduction in portfolio value arising from actual or perceived deterioration in credit quality. Credit risk emanates from a bank's dealings with an individual, corporate, bank, financial institution or a sovereign. Credit risk may take the following forms:

- In the case of direct lending principal and/or interest amount may not be repaid;
- In the case of guarantees or letters of credit, funds may not be forthcoming from the constituents upon crystallization of the liability;
- In the case of treasury operations the payment or series of payment due from the counter parties under the respective contracts may not be forthcoming or ceases;
- In the case of securities trading businesses funds/securities settlement may not be effected;
- In the case of cross border exposure the availability and free transfer of foreign currency funds may either cease or restrictions may be imposed by the sovereign.

The credit risk is generally made up of transaction risk or default risk and portfolio risk. The portfolio risk in turn comprises intrinsic and concentration risk. The credit risk of a bank's portfolio depends on both external and internal factors. The external factors are the state of the economy, wide swing in the commodity/equity prices, foreign exchange rates and interest rates, trade restrictions, economic sanctions, Government policies etc. The internal factors are deficiencies in loan policies/administration, absence of prudential credit concentration limits, inadequately defined lending limits for Loan Officers/Credit Committees, deficiencies in appraisal of borrowers' financial position, excessive dependence on collaterals, inadequate risk pricing, absence of loan review mechanism and post sanction surveillance, etc.

Another variant of credit risk is counter party risk. It arises from non-performance of the trading partners. The non-performance may arise from counterparty's refusal/inability to perform due to adverse price movements or from external constraints that were not anticipated by the principal.



The management of credit risk includes:

- Measurement of risk through credit rating/scoring;
- Quantifying the risk through estimating expected loan losses;
- Risk pricing on a scientific basis; and
- Controlling the risk through effective loan review mechanism and portfolio management.

Since exposure to credit risk continues to be the leading source of problem in banks world-wide; banks should now have a keen awareness of the need to identify, measure, monitor, and control credit risk as well as determine that they hold adequate capital against these risks and that they are adequately compensated for risks taken. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationship between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization. Banks need to adopt sound practices in the following areas:

- ✓ Establishing an appropriate credit risk environment;
- ✓ Operating under a sound credit-granting process;
- ✓ Maintaining an appropriate credit administration, measurement and monitoring process; and
- ✓ Ensuring adequate controls over credit risk.

Banks should have a well-defined credit risk policy defining clearly their credit philosophy, credit culture, risk tolerance level, credit approving authority, prudential limits, acceptable benchmark ratios, risk rating systems, loan review mechanism, robust MIS for monitoring and follow-up and system of periodic review of the policy itself.

Default in credit occurs due to many factors and at times the default could be deliberate. The quantification of credit risk and its management therefore poses some challenges. Statistical tools like probability of default, loss given default, exposure at default and maturity are extensively used to measure the credit risk. But to arrive at the probability of default in the case a particular category of borrowers, enormous historical data of the behavioral pattern of borrowers is required which is proving to be a great challenge. Indian banks are now generating this data that would enable them to accurately determine the statistical probabilities.

The floating rate of interest charged by the bank due to interest rate fluctuations may also to certain extent reduce the interest rate risk but if the borrower is not in a position to bear this increased interest burden it may transform into a credit risk for the bank. The credit management will be the thrust area for the bank since inefficient risk management models will deteriorate the asset-quality. Therefore, banks worldwide are now laying greater stress on developing credit risk models. These models have mostly designed to enable banks to meet the international standards laid by the Bank for International Settlements (BIS). The RBI is also strengthening its guidelines for banks in order to enable them to contain their credit exposure/risk with intolerable levels. The bank would have managed a major portion of its risks by having in place a proper ALM policy attending to its interest rate risk and liquidity risk. These two risks when managed properly lead to enhanced profitability and adequate liquidity. The profitability and liquidity of a bank mostly depends on the forecasted cash flows and if there is any delay in cash flows by way of non-payment of installment or loan repayments etc. all estimates regarding the interest rate risk levels and liquidity may not get the desired results. The credit risk has a close relation with interest rate risk and liquidity risk making it more critical to the bank. For example, a wrong judgement in the credit risk may result in a liquidity risk and a highly volatile interest rate environment may lead to deterioration in the credit quality. All this makes the management of credit risk an essential part of asset liability management.

The exposure to Credit Risk continues to be the leading source of problems in banks worldwide and banks are required to have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for the risks incurred.

The entire exercise of Credit Risk Management can be segregated into micro and macro-level risk management. While the credit risk management at the micro-level focuses independently on each credit transaction of the bank, the macro-level credit risk management targets the total credit exposure of the bank. The credit risk is generally made up of Transaction Risk or Default Risk and Portfolio Risk. The transaction risk arises from individual credit transactions of the bank at a micro-level and is evaluated through technical, financial and other analysis of the individual borrowers, whereas portfolio risk arises out of the total credit exposure of the bank at a micro-level and focuses independently on each credit transaction of the bank. Whereas, the macro-level credit risk management targets the total credit exposure of the bank.



The banks in the emerging markets like India face intense challenges in managing credit risk. These may be determined by factors external to the bank like delay in production schedule, frequent instability in the business environment, wide savings in commodity/equity prices, foreign exchange rates and interest rates, legal framework less supportive of debt recovery, financial restrictions, government policies and controls, natural disasters, etc. These may be caused by internal factors/deficiencies in appraisal of financial position of the borrowers, poor industry analysis, excessive reliance on collateral, poor controls on loan documentation, infrequent customer contact, deficiencies in loan policies/ administration, etc. These deficiencies can lead to loan portfolio weaknesses including over concentration of loans in one industry or sector, large portfolios of nonperforming loans and credit losses.

Credit risk is seen in terms of default risk, migration risk, and exposure risk, counter party risk, etc. Credit risk management is categorized into preventive steps and management steps. Under preventive steps appraisal and borrower identification processes are included. The effective management of credit risk is a critical component of comprehensive risk management and essential for the long term success of a banking organization.

Reserve Bank of India's Guidelines Relating to Credit Risk Management

RBI has suggested the following guidelines for credit risk management in the bank.

- 1) Policy Framework
- 2) Credit Rating Framework
- 3) Credit Risk Models
- 4) Portfolio Management and Risk Limits
- 5) Managing Credit Risk in Inter-Bank Exposure
- 6) Credit Risk in Off Balance Sheet Exposure
- 7) Country Risk
- 8) Loan Review Mechanism / Credit Audit
- 9) RAROC Pricing / Economic Profit Risk Adjusted Return on Capital (RAROC)
- 10) Basel II Accord: Implication for Credit Risk Management The banks are required to;
 - (a) Ensure that their Risk Management functions consider the above issues as applicable to the bank and put up in place appropriate structures/systems. This will ensure that Risk Based Supervision (RBS) is effective.
 - (b) Each bank must have a Credit Rating Framework to suit their requirements.

2) Interest Rate Risk

Changes in interest rates on advances affect the interest rates of all advances account and significantly impact the Net Interest Income (NII). The risk of an adverse impact on NII due to variations of interest rate may be called interest rate risk.

Fluctuations in interest rates lead to a host of risks of different dimensions to which assets and liabilities of banks are perennially exposed. Interest rate risk arises from holding assets and liabilities with different principal amount, maturity dates or repricing dates.

Interest risk is broadly classified into Mismatch Risk and Gap Risk, Basis Risk, Net Interest Position Risk, Embedded Option Risk, Yield Curve Risk, Price Risk and Reinvestment Risk.

Interest rate is viewed from two different complimentary perspectives viz. (i) earning sensitivity to rate fluctuations and (ii) price sensitivity of instruments/products to changes in interest rate. Ultimately interest rate risk has potential impact on Net Interest Income (NII) and NIM and Net Asset Values caused by unexpected changes to interest rates.

Deregulation of interest rates has exposed the banks to the adverse impact of interest rate risk. Interest rate risk is the risk where unexpected change in the market interest rate may impact on the Net Interest income (NII). NII means Net Interest Income = Interest Income – Interest Expenses or Net Interest Margin (NIM). NIM means Net Interest Margin = Net Interest Income/Average Total Assets. Any mismatches in the cash flows (fixed assets or liabilities) or repricing dates (floating assets or liabilities), expose bank's NII or NIM to variations. The earning of assets and cost of liabilities are closely related to market interest rate volatility. Interest rate risk may take the form of Gap or Mismatch Risk, Basis Risk, Embedded Option Risk, Yield Curve Risk, Price Risk, Reinvestment Risk, and Net Interest Position Risk.

- **Gap or Mismatch Risk:** It arises from holding assets and liabilities and off-balance sheet items with different principal amounts, maturity dates or repricing dates, thereby, creating exposure to unexpected changes in the level of market interest rates.



- **Basis Risk:** The risk that the interest rate of different assets, liabilities and off-balance sheet items may change in different magnitude is termed as basis risk. The degree of basis risk is fairly high in respect of banks that create composite assets out of composite liabilities.
- **Embedded Option Risk:** Significant changes in market interest rates create another source of risk bank's profitability by encouraging prepayment of cash credit/demand loans/term loans and exercise of call/put options on bonds debentures and/or premature withdrawal of term deposits before their stated maturities.

These risks can be measured through different methods such as traditional Maturity Gap Analysis (to measure the interest rate sensitivity of earnings), Duration Gap Analysis (to measure interest rate sensitivity of capital), Simulation, and Value at Risk (VaR) in combination or hybrid form. Before interest rate risk could be managed, they should be identified and quantified.

3) Liquidity Risk:

Liquidity risk may arise due to funding of long-term assets (advances) by short term sources (deposits). If fresh short term deposits are not available or existing deposits are not renewed the bank will be put in liquidity problem. Several traditional ratios are used for measuring liquidity risks, loan to total assets, loan to core deposits, large liabilities to earning assets etc.

Liquidity risk is the potential inability to generate cash to cope with the decline in deposits or increase in assets. Liquidity risk originated from the mismatches in the maturity patterns of assets and liability. Banks are in the business of maturity transformation thereby lending for longer period than those for which they borrow. Another reason for this is the preference of lenders (depositors for the Bank) to level for shorter maturities (liquidity preference) whereas many borrowers require long term funds. This results in a long term rates and this is one way of increasing interest margin for the bank. Thus maturity mismatching is an intrinsic feature of banking. However, mismatching would be within reasonable level and banks should not expose themselves to liquidity crisis.

Managing the liquidity risk is the ability to make timely payments of all obligations and it is crucial to ongoing viability of any banking organization. When a bank is able to meet its liabilities as they become due, there is no probability than an adverse situation develops. An effective liquidity management is essential as liquidity shortfall in one bank can have repercussion on the entire system of banking. Therefore, banks should essentially manage liquidity risk very successfully as many of their liabilities are either payable on demand or at short notice. Analysis of liquidity risk involves the measurement of not only liquidity position of the bank, but also examining how funding requirements are likely to be affected under crisis scenarios.

Liquidity risk could arise from either the liability or assets side of the bank's balance sheet. The most enduring image of liquidity risk is a run on the bank demanding return of their deposits, though the liquidity risk could be manifested in many more forms such as during the course of securities or foreign exchange trading with or without public knowledge.

Liquidity planning is an important area of Risk Management Framework in banks. The liquidity risk of banks arises from funding of long term assets by short-term liabilities, thereby making the liabilities subject to roll over or refinancing risk. In a very fundamental sense, liquidity management represents the ability to meet liquidity needs, as and when they emerge, both efficiently and economically, i.e., without incurring undue costs. Liquidity is the ability to efficiently accommodate deposit and other liability decreases, as well as fund loan portfolio growth and the possible funding of off-balance sheet claims.

Liquidity management in banks may be defined as the process of generating funds to meet contractual or relationship obligations, viz., New loan demands, existing loan commitments, and deposit withdrawals, etc., at reasonable prices at all times. A bank has adequate liquidity when sufficient funds can be raised, either by increasing the liabilities or converting assets, promptly at a reasonable cost. It encompasses the potential sale of liquid assets and borrowing money for capital and forex markets. Effective liquidity management helps the bank in building confidence level in the market, developing mutually beneficial relationship with borrowers by meeting their demands timely, avoiding unprofitable sale of assets to generate funds in case of need, and in lowering the size of default-risk premium. Liquidity risk, broadly, comprises of funding risk, time risk, and call risk.

- ✓ Funding Risk: need to replace net outflows due to unanticipated withdrawals/non-renewal of deposits;
- ✓ Time Risk: need to compensate for non-receipt of expected inflows of funds, i.e. performing assets turning into non-performing assets; and
- ✓ Call Risk: due to crystallization of contingent liabilities and inability to undertake profitable business opportunities when desirable.



These can be measured/studied, broadly, under two methods: Static Approach – Ratio Analysis, or Dynamic Liquidity Analysis.

Study of projected cash flows, behavioral pattern, variance analysis, setting of prudential limits on volatile assets and liabilities, etc., which are the important tools for the purpose are required to be put in place by banks.

The analysis of liquidity involves tracking of cash flow mismatches. For measuring and managing net funding requirements, the use of maturity ladder and calculation of cumulative surplus or deficit of funds at selected maturity dates is considered. The cash flows are placed in different time bands based on future behavior of assets, liabilities and off-balance sheet items. In other words, banks analyze the behavioral maturity profiles of various components of on/off balance sheet items on the basis of assumptions and trend analysis supported by time series analysis. Banks also undertake variance analysis to validate the assumptions. Apart from the above cash flows, banks also track the impact of prepayment of loans, premature closure of deposits and exercise of options built in certain instruments which offer put/call options after specified times. The difference between the cash inflows and outflows in each time period, the excess or deficit of funds becomes a starting point for a measure of a bank's future liquidity deficit or surplus, at a series of point of time.

Banks also monitor high value deposits say Rs. 1 crore or more to track the volatile liabilities. Further, the cash flows arising out of contingent liabilities in normal situation and the scope for an increase in cash flows during periods of stress should also be estimated. The banks can also estimate the liquidity profile on a dynamic way by giving due importance to:

- ✓ Seasonal patterns of deposits/loans;
- ✓ Potential liquidity needs for meeting new loan demands, unveiled credit limits, loan policy, potential deposit losses, investment obligations, statutory obligations, etc.

4) Foreign Exchange Risk:

Foreign exchange market is volatile. Every bank which is active in international market keeps certain open position in foreign currencies. However, there is inherent risk in running such open position due to wide variations in exchange rates.

Foreign Exchange Risk can arise for a variety of reasons. Banks could have foreign exchange exposure because of its income earning activities, costs, assets or liabilities. Assets in the form of foreign currency loans given to customers as well as investments denominated in foreign currency give rise to this risk. Similarly, a bank borrowing activity from the overseas market could also expose the bank on the foreign exchange risk. Further, whenever a bank provides a hedge to its customers for their foreign exchange risks the bank is in effect taking over the customer exposure till the time the bank is able to gain protection for this by entering into a similar contract in the market the bank is exposed to the foreign exchange risk. Fluctuations in the currency during the day or overnight could expose the bank to foreign exchange risk. Foreign exchange risks from a corporate point of view may be divided into (1) Transaction Exposure, (2) Translation Exposure and (3) Economic Exposure.

5) Operational Risks

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.

Operational risks can arise due to inappropriate systems (losses due to inadequate or wrong systems and procedures), settlements (consequences of failed settlements), model risk (losses due to errors in model), fraud risk (damage due to internal/external frauds), errors and missions, legal risk (inappropriate documentation), regulatory risk (noncompliance with regulations) etc. Broadly operational risk is every financial risk other than market or credit risk. In a narrower sense operational risk can be simply defined as one arising out of operations. Operation risk according to a practical approach is risk arising out of failed internal process, people and systems or from external events.

III. CONCLUSION

Asset Liability Management is an operationally comprehensive but complex function. Considering its utility, the banks have to aggressively organize and perform this function. In a competitive environment, it is a challenging assignment for which it is necessary to develop necessary expertise, create the required infrastructure and extend organizational support to those performing asset liability management function. ALM presents a more disciplined decision-making framework for banks, while at the same time, guarding the risk levels. Therefore, for efficient and effective ALM, a good foundation of human and technological infrastructure requires.



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