

# STRATEGIC PLANNING FOR ASSET – LIABILITY MANAGEMENT : RELEVANCE FOR DEVELOPMENT FINANCING INSTITUTIONS IN INDIA

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*The paper discusses the rationale and scope of ALM. ALM as a concept is gradually gaining importance in the Indian conditions in the context of the growing liberalization and the financial sector reforms taking place..It is the simultaneous management of both assets and liabilities and needs considerable amount of strategic planning. ALM plays an important role as a risk – management tool and banks have now realized that efficient risk management is an area of prime concern for them. ALM from the perspective of the DFI is also examined, followed by a look at the various types of risks affecting them*

## Section - 1

### INTRODUCTION

A strong and efficient financial system is necessary to strengthen the domestic economy and also to enable it to meet the challenges posed by financial globalization. The phenomenal expansion of the banking operations in the last two decades have opened up the system to newer risks. Financial liberalization and technical changes have created new and complex financial products and have increased their turnover in the financial market.

Although the benefits of these developments have been substantial they have also created more risks for the banking sector. The ability of the banks to contain and manage these risks will have an important impact on their profitability levels in the

years ahead. As competition in the banking industry intensifies, banks will have to ensure better return on assets. This can be best achieved by better Asset Liability Management (ALM) .Banks which adopt risk management techniques on a large scale, will be the highest profit-makers.

ALM, is the art of ensuring that the maturity profile of assets match that of liabilities. It plays an important role, both as a risk – management tool and a profit generating engine. It is the coordinated management of a bank's balance sheet to allow for alternative interest rate, liquidity and prepayment scenarios.

In India, the relatively rapid progress of ALM has been mainly due to the growing competition and wide ranging changes that have been taking place in the financial markets. The on-going financial sector

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reforms, specially the reforms relating to interest rate deregulation has made the concept of ALM important in Indian conditions. Post liberalization, Indian banks are facing a lot of risks – credit risk, interest rate risk, foreign exchange risk and liquidity risk. If the banks have a balanced portfolio, they will not be making money. It is the capability of banks to take risks based on their risk bearing capacity that will determine their profits.

ALM is the management of the total balance sheet and risk management is the core activity of ALM. ALM is the process of managing the net interest margin (NIM) within the overall risk bearing capacity of a bank. The importance of ALM lies not in eliminating risk, but to manage it in such a manner that an acceptable balance exists between profitability, growth and risk.

The present paper has been sub-divided into five sections. Section I gives the introduction. Section II discusses the strategic planning for ALM. Section III examines the methods for the measurement of interest rate risk. Gap, duration, simulation and value at risk methods are discussed in this section. ALM from the perspective of the development financial institution are examined in Section IV. Section V gives the concluding observations.

## Section II

### STRATEGIC PLANNING FOR ALM

ALM is a simultaneous management of both assets and liabilities and needs considerable amount of strategic planning. The plan of ALM (short-term, medium-term and long-term) is influenced by external as well as internal expectations. A successful ALM requires a comprehensive deregulation of interest rates coupled with a market

driven asset – liability allocation and a favourable regulatory attitude.

The external expectations are governed by society, government, shareholders and customers. They influence ALM by focusing on bank profitability and improved performance of the bank. Similarly, internal expectations starting from the top management to the lower staff, also influence ALM. The internal expectations of the bank relate to various internal matters like implementation of computerization on the work force, productivity norms, technology to be introduced, wage parity and wage increase etc. Both the internal and external expectations leads to a scientific evaluation of alternative strategies which takes a concrete shape at the corporate office level of a bank leading to workable strategies.

The system of information flows and evaluation of results arising out of the strategic plan act as a catalyst in the strategic planning process. Such a process helps top management to formulate master strategies so as to correct the imbalances to the desired levels. The proposed purposes, objectives, policies, programmes and strategies of the top management get integrated into a strategic planning process. The strategic planning process is then integrated with the decision and evaluation rules. Finally a constant review and evaluation of plans helps the top management in formulating strategies in arresting the mismatches specially with reference to credit, maturity, and interest rates. This would hence ensure the success of a strategic planning exercise.

### Strategic Planning at Structural Level

In order to manage effectively the various

kinds of risk arising out of assets - liability mismatches most of the major commercial banks in India have an 'Asset Liability Management Committee' (ALCO). The role of ALCO is primarily directed towards formulating a balance sheet policy for the bank based on a detailed assessment of risk-return trade off. ALCO's deliberate on maintaining liquidity in the short run and are also involved in evolving appropriate systems and procedure for the identification and analysis of balance sheet risks and laying down parameters for efficient management of these risks. The ALCO is a strategic decision making body and decides on the business and risk management strategy of the bank and ensures that the bank operates within the risk limits set by the Board.

The ALCO should exercise timely policy decisions and be held responsible for the successful implementation of the ALM function. The business and risk management strategy of the bank should be guided by the direction of ALCO, so that the bank operates within the parameters set by the board.

To ensure commitment of the top management, the committee should comprise of senior executives so as to help draw up corporate strategy plans embracing short, medium and long term plans. In fact the Chief Managing Director or the CEO should be made the head of the committee. Executives holding top management positions like the Chiefs of Investment, Credit Resources Management, Treasury Management, International Banking and Economic Research division can be members of the committee so that they get involved in evolving different parameters of ALM.

As a strategic planning exercise of ALM it

will be better for banks to form sub committees and support groups on important areas like credit management, liability management, investment management and research and development. For example, the committee on credit management can evolve a system to assess on an ongoing basis rate sensitivity of loans, problem loan management, loan pricing etc. In addition, the committee can also assess the likely gaps and ways and means of funding the gaps. The research and development could be another important sub committee where main objective would be to provide research support to the ALCO.

### **Short Term and Long Term Strategies**

A short term perspective of ALM is mainly related to the treasury operations of the funds manager. The strategy of the treasury manager here should be take advantage of the various financial instruments and the interest rate risk which is inherent with it. Having a fair idea regarding the movement of future interest rates, the treasury can annul the adverse impact of changes in interest rates by taking an equal and opposite position.

Further, if the treasury managers believe that they can predict the future directions in interest rates, they can position their operations accordingly. When a risk is expected they can make assets more interest sensitive relative to liabilities and vice versa when a decrease is expected.

The approach in ALM would be towards the total balance sheet planning from a risk-return perspective as also the strategic management of the balance sheet in anticipation of interest rate changes. Post liberalization banks are dealing with different

types of risk and that also in a deregulated environment. Hence, it is the ability of banks to take risks based on their risk bearing capacity that will determine their profitability. Further the RBI has also come out with capital adequacy for market risk, especially the investment portfolio in government securities. The fluctuations in interest rates can result in loss of value in the investment portfolio. Hence, the Reserve Bank has come out with a 2.5 percent of capital adequacy for market risk.

There are many analytical techniques for the measurement and management of interest rate risk. In the context of poor management information system (MIS) and the slow pace of computerisation in banks, the traditional GAP analysis, being a fairly simple model, can be used to measure the interest rate risk. The intention of the RBI here is to move over to advanced techniques of interest rate risk measurement like duration approach, simulation and value at risk method over time. This would be critically dependent on the MIS available with the bank, basically on the residual maturities of their assets and liabilities. Bank will have to acquire sufficient expertise and sophistication in getting this information. This would enable them to categorize the assets/liabilities into sensitive and non sensitive, liquid and illiquid assets/liabilities and help them take up appropriate strategy like focussing on methodology to arrest the funds gap at a given future date, evolving new products and services to effectively manage the maturity gap, etc.

Further, the components of assets and liabilities can be categorized into permanent long term asset / liabilities, time assets / liabilities, medium cycle time assets / liabilities, short duration assets / liabilities and contingent assets / liabilities. A

segmented approach like this would enable banks to evolve specific strategies to manage assets and liabilities in each sub group. This would also give the bank a total view in the management of assets and liabilities and help in identifying the mismatches according to maturity segments. The bank would thus be in a position to develop specific strategies for specific mismatches. Figure 1 makes an attempt to regroup assets and liabilities of a bank and help in a better understanding of the concept of ALM.

### Section III

#### MEASUREMENT OF INTEREST RATE RISK

From the perspective of ALM the following approaches can be used for the analysis and management of risk.

##### 1) GAP Method

Gap analysis was one of the first methods developed to measure a bank's interest rate exposure, and continues to be widely used by banks. This approach is concerned with the rate sensitivity of assets and liabilities. In every bank there are some assets and liabilities that are sensitive to changes in interest rates, while others are not.

Rate sensitive instruments are those which can mature or be priced upward and downward within the next 90 days or earlier. GAP is defined as the difference between rate sensitive assets (RSA) and rate sensitive liabilities (RSL) in a particular accounting period. The rate sensitive gap (RSG) is mathematically expressed as follows:

$$RSG = RSA - RSL$$

Or as a ratio :  $\frac{RSA}{RSL}$

Figure - I  
**COMPONENTS OF ASSET-LIABILITY**

<ul style="list-style-type: none"> <li>● Fixed Assets</li> <li>● Machinery</li> <li>● Equipment</li> <li>● Advance for lease of Premises</li> <li>● Investments in Subsidiaries</li> </ul>	<p>PERMANENT ◀▶ PERMANENT LONG TERM LIABILITY</p>	<ul style="list-style-type: none"> <li>● Capital</li> <li>● Free reserves</li> <li>● Provisions</li> <li>● Recapitalisation Reserve</li> <li>● Tier 2 Capital</li> <li>● Loans</li> </ul>
<b>MISMATCH</b>		
<ul style="list-style-type: none"> <li>● Long dated SLR</li> <li>● Investments</li> <li>● Term loan-repayable in 3 years and over</li> <li>● Housing Funds to subsidiaries/ MF/s</li> <li>● Core cash credits</li> </ul>	<p>LONG CYCLE TIME ASSETS ◀▶ LIABILITIES WITH LONG DURATION MATURITIES</p>	<ul style="list-style-type: none"> <li>● Deposits with maturity of 3 years and over</li> <li>● Core amount kept in - Suspese A/c</li> </ul>
<b>MISMATCH</b>		
<ul style="list-style-type: none"> <li>● Medium dated SLR investments</li> <li>● Interest accrued</li> <li>● Tax paid in advance</li> <li>● Stationary</li> <li>● Other Assets</li> <li>● Medium Term Loan-payable in 3 years</li> </ul>	<p>MEDIUM CYCLE TIME ASSETS ◀▶ LIABILITIES WITH MEDIUM DURATION MATURITIES</p>	<ul style="list-style-type: none"> <li>● Deposits with maturity of 1- 3 years</li> <li>● Core current A/c deposits</li> <li>● Core SB depoists</li> </ul>
<b>MISMATCH</b>		
<ul style="list-style-type: none"> <li>● Short dated SLR investments and Loans &amp; advances</li> <li>● Bills purchased/Discounted (inland/foreign)</li> <li>● Due from banks</li> <li>● Syndicated loan</li> <li>● Demand CCs/Ods</li> <li>● Balance with banks/RBI</li> <li>● Cash Held</li> <li>● Call deposits/CDs</li> </ul>	<p>SHORT CYCLE TIME ◀▶ LIABILITIES WITH ASSETS SHORT DURATION MATURITIES</p>	<ul style="list-style-type: none"> <li>● Short term deposits</li> <li>● Call Deposits</li> <li>● Non-core Current A/c deposits</li> <li>● Pipeline funds from operation through DD, MT, TT, TC, Gift cheques, government transactions, merchant banking business, etc.</li> </ul>
<b>MISMATCH</b>		
<ul style="list-style-type: none"> <li>● LCs</li> <li>● Guarantees</li> <li>● Forward Contracts</li> <li>● Options</li> <li>● Swaps</li> <li>● Swoptions</li> </ul>	<p>CONTINGENT ASSETS ◀▶ CONTINGENT LIABILITIES</p>	<ul style="list-style-type: none"> <li>● LCs</li> <li>● Guarantees</li> <li>● Forward Contracts</li> <li>● Options</li> <li>● Swaps</li> <li>● Swoptions</li> </ul>
<b>MISMATCH DEVELOPMENT</b>		
<b>STRATEGIC MANAGEMENT</b>		

There could be three possibilities :

- (i) If the gap is zero or '1' then this implies that the rate sensitivity of assets is perfectly matched with the rate sensitivity of liabilities. This means that in case of any increase in interest rates, return on assets would rise to protect the margin over funding costs. Such a complete match is very rare. Nevertheless many risk-averse banks make all efforts to achieve as small a GAP as possible.
- (ii) If the GAP is positive, any increase in the interest rates would mean increase in profits and any decline in interest rates would mean decrease in profits.
- (iii) If the GAP is negative, any increase in the interest rates would cause a decline in profits, and any decrease in interest rates would mean an increase in profits.

Active gap management requires the monitoring of all markets within which the institution operates plus the willingness to use interest rates forecasts as the basis for active asset / liability management. If the bank management wants to completely insulate the balance sheet from the changes in interest rates, the gap would be set near to zero so that changes in asset return would be counterbalanced by changes in liability costs, irrespective of the direction of interest rates. If a decline in interest rate is forecasted, the asset / liability strategy would try to narrow the gap, so that the proportion of rate sensitive assets are reduced. In case a rise in interest rate is anticipated, the opposite strategy, increasing the size of the gap would be attempted. In addition to the direction of interest rates, gap management strategies also depend upon the volatility of interest rates. In period

of high interest rate volatility, aggressive positioning with respect to the direction of interest rates is generally not advisable as the accuracy of interest rate forecasts are subject to a high degree of prediction error.

#### *Benefits*

1. Gap analysis is a very simple and straightforward technique and is easily understood by bank managers. Also, it is the most commonly used technique for measurement of liquidity risk in banks.
2. The data needed for gap analysis is the maturity pattern of all the items in the portfolio of banks which is readily available with the banking staff.

#### **II. Duration Method**

This method takes into account the timing and the market value of cash flows. It is one of the most developed technique of quantifying and managing interest rate risk. It evaluates the impact of interest rate changes on the market value of assets and liabilities and takes into account the fact that some assets or liabilities are more rate sensitive than others even if the maturity are equal. The duration of an asset or liability is calculated as the weighted average time over which the cash flows or contractual maturities flows from an investment are expected, where weights are the relative present values of cash flows. Duration of a financial instruments is governed by a complex interaction of factors, viz. cash flows, their timings and current market yield. In the event of a change in any of these factors the duration of the instrument will also change. Further, as duration is denominated in number of periods, the duration of several instruments can be compared even if they have different yields, cash flows or contractual maturities.

Duration serves as a strategic planning tool for evaluating and controlling the interest rate risk of the institution and for comparing the rate sensitivity of various securities. By changing the composition of the balance sheet, the desired duration for a particular target account can be attained i.e. banks and other financial institutions can try, and create liability duration that conform to their asset duration.

In some cases duration can be changed to match the desired holding period e.g. if duration is to be decreased new short-term assets of required maturities can be acquired. Similarly suitable funding source can be chosen to achieve a desired duration of liabilities. However, duration keeps on changing with passage of time.

### III. Simulation method

Simulation techniques involve detailed assessments of the potential effects of changes in interest rates by simulating the future path of interest rates and their impact on cash flows. This computer generated scenario then ascribes probabilities on the basis of past behaviour and helps the bank to choose the optimum models. This method is generally used by banks using complex financial instruments or having complex risk profiles.

Simulation approach, though complicated, is more dynamic as it typically involves a more detailed breakdown of various categories of on and off balance sheet position, so that specific assumptions about the interest and principal payments and non-interest income and expense arising from each types of position can be incorporated. However, the applicability of simulation – based interest rate risk measurement techniques depends on the

validity of the underlying assumptions and the accuracy of the basic methodology.

### IV. Value at Risk Method

Value at Risk (VaR) is an advanced tool to measure interest rate risk. It takes into account the risk of individual assets and liabilities by calculating the changes in the value of assets/liabilities due to changes in the rates of interest. This helps the managers to evaluate the opportunity cost/benefits of carrying such assets/liabilities for a longer frame of time and also see the direct impact of their decisions on the net worth of an organization. The technique also helps the managers to focus on the long term risk implications of the decisions that have been taken by the management.

## Section IV

### ALM IN DEVELOPMENT FINANCIAL INSTITUTIONS

Development Financial Institutions (DFI) assume various kinds of risks that arise from their business and the environment in which they operate. Risk management occupies an importance place in the strategic management exercise of the DFI. The DFIs have developed and are implementing various guidelines for a prudent risk – return optimization strategy. The objective of ALM here is to continuously monitor the interest rate / liquidity profile of maturing assets and liabilities. An-in-house asset liability management committee has also been constituted to monitor liquidity risk, interest rate risk and foreign exchange risk in a coordinated manner. Also, IDBI has appointed Arthur Andersen to establish an effective ALM function. The consultancy firm, would among other things, help develop ALM policies, establish an appropriate ALM

organisation structure, identify ALM software options and assist IDBI in the pilot implementation of the ALM information process.

Efficient risk management requires adequate organisational rules, with well-defined responsibilities and discretionary powers which thereby allows for quick lending decisions, without impairing credit quality. The ALM function for DFIs would specifically include establishing guidelines for limiting balance sheet and market risks and the use of derivative instrument and monitoring of matches between assets and their funding. DFI distinguish between risk management in the traditional sense, i.e. taking and managing risk as a business decision, and the risk control function, i.e. assessing and monitoring the risk factors over a period of time. For example, ICICI has specially formed 'The Risk Management Group' which is under the supervision of a general manager who directly report to the managing director and chief executive officer. As a comprehensive and integrated risk controlling unit, the risk management group is also responsible for the audit function and corporate governance, in addition to managing the different risks encountered by ICICI.

DFI have had to raise a majority of their incremental funds from the retail and whole sale market at market rates. As a result, spreads have fallen to about 2.6 per cent in 1998-99 from above 3 per cent in 1997-98 for both ICICI and IDBI. The incremental cost of funds are above 13 percent for both IDBI and ICICI while their returns are close to 16 per cent. Since spreads will continue to be under pressure in the coming years, the DFI should try and maximize income from fee - based and other banking services.

For effective ALM, DFI can employ interest rate swaps to manage and align the rate sensitivity characteristics of its assets and liabilities. The International Bank for Reconstruction and Development (IBRD) uses derivative instruments to adjust the interest rate repricing characteristics of specific on balance sheet assets and liabilities, or group of assets and liabilities with similar repricing characteristics.

### Interest Rate Risk

The phased deregulation's of interest rates and the operational flexibility given to banks in pricing most of the assets and liabilities have exposed the banking system to interest rate risk. Interest rate risk affects bank in two ways. First, it affects net interest income as assets and liabilities are not repriced simultaneously. Secondly, it affects the market value of assets like bond, treasury, bills, commercial papers etc. Immunization from interest rate risk is very important for banks and must be taken care of. Also, given the fact that the total basket of assets and liabilities is made up of diverse interest bearing securities, any change in the interest rate impacts bank differently.

According to a study paper prepared by the Basle Committee on bank supervision, although this risk is a normal part of banking, "excessive interest rate risk can pose a significant threat to a banks earning and capital base."

Changes in interest rates also affects the underlying value of the banks assets, liabilities and off balance sheet instruments because the present value of future cash flows changes when the interest rate structure changes. Thus, an effective risk management process requires that banks



maintain their interest rate risk within manageable levels. In order to manage the interest rate risk on rupee loans, DFIs try to adopt a policy of adjusting the rate of each disbursement with the lending rate prevailing at that time. For example, as part of its ALM process, ICICI matches floating rate foreign currency assets with floating rate foreign currency liabilities so as to neutralize the interest rate risk.

### Credit Risk

Credit risk arises from the probability that a borrower or counter party will fail to make the payment obligations on the due date. Since this risk is inherent in DFI's business, management and measurement of such risks becomes an important part of ALM.

DFIs have developed systematic methods for receiving credit proposals and assign ratings to them. The credit quality of the borrower is evaluated by considering the financial position of the borrower, its relative competitive position within the industry, payment record to lender and quality of its management.

To manage the credit risk, ICICI has formed a credit risk committee, which maintains a comprehensive data base of information on its clients and major industries. The committee chaired by the general manager of the risk management group, includes senior members of the management team and provides a corporation wide consistent assessment of credit quality, asset supervision support and the necessary control infrastructure.

### Asset Quality

An important aspect of credit risk management is asset quality. DFIs are working hard on improving their asset quality by adopting various methods for recovering their principal and interest dues. Rating agencies are also concerned about the asset portfolio of DFI due to prolonged weaknesses in certain sectors. DFI are aware of their position and have already started working on improving their asset quality. As a first step they have started lowering their exposures to these critical industries. For example ICICI and IDBI reduced their exposures in textiles in fiscal

Table I  
Annual Results Of The Three Financial Institutions

	ICICI		IDBI		IFCI	
	98-99	97-98	98-99	97-98	98-99	97-98
Inc From Operations	6,865	5,408	7,291	6,807	2,801.9	2,585.1
Interest Expenses	5,638	4,321	5,725	4,745	2,368.4	1,956.5
Provisioning	131	—	311	167	308.9	28.8
Net Profits	1,001	1,081	1,259	1,501	23.5	373.5
Sanctions	34,220	24,717	25,555	23,982	8,683.8	7,693.1
Disbursements	19,225	15,807	14,403	15,170	4,749.5	5,650.3
NPAs (%)	7.8	7.6	12	10.1	20.85	13.8
Total Assets	58,547	45,920	69,143	59,957	—	20,500.0
CAR (%)	12.5	13	12.9	13.7	8.47	11.57

Source : The Economic times, 9th June, 1999.

year ( FY) 99 from 8.6% to 7.6% and from 11.35% to 10.7% respectively.

The other problem of deterioration in asset quality concerns the NPA. For FY 99, there has been a rise in NPA and higher provisioning for all the three DFIs.

As shown in Table I NPAs were higher by .2% for ICICI, 1.9% for IDBI and 7.05% for IFCI. The net profits were also lower for all the three DFIs. If the NPAs continue to increase this will adversely affect the profitability of the DFI, resulting in a higher risk profile, making ALM more difficult.

**Loan recovery :** DFIs are channelling a lot of their energy towards recoveries. The major step being taken here is to discipline errant borrowers, For example, ICICI has initiated court proceeding to discipline errant borrowers. In the last two years it has recovered about Rs. 680 crore from bad loans with about 76% of the outstanding amount being recovered. The three DFI are however comfortable on the capital adequacy parameter.

### Liquidity Risk Management

Liquidity risk originates from the mismatches in the maturity profile of assets and liabilities. The objective of liquidity management is to ensure that the DFI always have sufficient cash flows to meet all financial commitments. Measuring and managing liquidity needs are vital for effective ALM.

DFIs are aware of the risk of being unable to fund its portfolio of assets at appropriate maturities and rates and the risk of being unable to liquidate a position in a timely manner at a reasonable price. They are hence, continuously trying to diversify and expand their borrowing sources to maximize liquidity and reduce concentration risk.

ICICI is trying to become a Universal bank within the existing legal structure.

In the last two years it has brought down its exposure levels in the troubled manufacturing sector to 49% from 69% in 1997 and increased assets in corporate finance (from 14% to 19%), infrastructure (8% to 16%) and oil & gas (8% to 16%). It is planning to enter retail finance also.

IDBI has reduced its exposure to troubled industries. It is also exploring diversifying into working capital loans for corporates, though its primary focus will continue to remain in project finance.

IDBI is comfortably placed in the area of liquidity and has effectively managed its business and liability mix.. Table II gives the assets and liabilities outstanding of IDBI at end March 1998 and which are maturing over the next five years.

Table II

Year	Maturity Liabilities	Assets Gap	Maturity
1998-99	11478	8169	3309
1999-2000	8366	3761	4605
2000-01	7238	6626	612
2001-02	6047	5475	572
2002-03	4665	7263	-2598

The table clearly shows that IDBI has a positive gap in all the years except in 2002-03. It needs to be concerned about a possible fall in interest rates except in 2002-03 when a rise in rates would significantly decrease its spread. IDBI should try and adjust its portfolio of assets and liabilities as per the directions in interest rate movements. Different scenarios can be analyzed (i.e.

when the interest rate increases or when the interest rate decreases) with the help of the technique of sensitivity analysis. These different scenario can help the management

to take suitable action depending upon the expected movement in interest rates. Case -1, Case -2, Case -3 and Case -4 give the different expected scenarios.

### Sensitivity Analysis

#### CASE I – Normal Case

	1998-99	1999-2000	2000-01	2001-02	2002-03	Total
1) Maturing Assets	11,478	8,366	7,238	6,047	4,665	37,794
2) Maturing Liabilities	8,169	3,761	6,626	5,475	7,263	31,294
3) Gap	3,309	4,605	612	572	(2,598)	6,500
4) Interest Rate on Asset *	16.5%					
5) Interest Rate on Liabilities**	12.5%					
6) Interest Income	1,893.87	1,380.39	1,194.27	997.75	769.72	6,236.00
7) Interest Expense	1,021.12	470.12	828.25	684.37	907.87	3,911.73
8) Net Interest Income	872.75	910.27	366.02	313.38	(138.15)	2,324.27
9) Net Interest Margin (NIM) (%)	7.60	10.88	5.06	5.18	-2.96	6.15

\*Assume IDBI's Prime Lending Rate (PLR) is 13%. With an interest rate band of 3.5% over it the normal interest rate charged to customers comes out to be around 16.5%. \*\* This is the interest rate being given by IDBI in its Flexibond 7th Issue for 5 – Year Bonds.

#### Analysis

There is a negative Gap in the year 2002-03 because of which the NIM had turned negative during this year.

#### CASE II – When Interest Rates Increase By 2%

	1998-99	1999-2000	2000-01	2001-02	2002-03	Total
1) Maturing Assets	11,478	8,366	7,238	6,047	4,665	37,794
2) Maturing Liabilities	8,169	3,761	6,626	5,475	7,263	31,294
3) Gap	3,309	4,605	612	572	(2,598)	6,500
4) Interest Rate on Assets	18.5%					
5) Interest Rate on Liabilities	14.5%					
6) Interest Income	2,123.43	1,547.71	1,339.03	1,118.69	863.02	6,991.88
7) Interest Expense	1,184.50	545.34	960.77	793.87	1,053.13	4,537.61
8) Net Interest Income	938.93	1,002.37	378.26	324.82	(190.11)	2,454.27
9) Net Interest Margin (NIM) (%)	8.18	11.98	5.23	5.37	- 4.08	6.49

#### Analysis

The Overall NIM has improved over the normal case in case of an increase in the interest rate. Similar increases are seen in all other years which have a positive Gap. However in the case of the year 2002-03 the NIM has turned even worse, reflecting the effect of the negative gap in the assets and liabilities during this year.

**CASE III – When Interest rates decrease by 2%**

	1998-99	1999-2000	2000-01	2001-02	2002-03	Total
1) Maturing Assets	11,478	8,366	7,238	6,047	4,665	37,794
2) Maturing Liabilities	8,169	3,761	6,626	5,475	7,263	31,294
3) Gap	3,309	4,605	612	572	(2,598)	6,500
4) Interest Rate on Assets	14.5%					
5) Interest Rate on Liabilities	10.5%					
6) Interest Income	1,664.31	1,213.07	1,049.51	876.81	676.42	5,480.12
7) Interest Expense	857.74	394.90	695.73	574.87	762.61	3,285.85
8) Net Interest Income	806.57	818.17	353.78	301.94	- 86.19	2,194.27
9) Net Interest Margin (NIM) (%)	7.02	9.78	4.89	4.99	- 1.85	5.81

**Analysis**

The NIM has deteriorated in all the cases except in 2002-03 when it actually improved over the normal case of - 2.96 to a slightly less negative 1.85%. The Overall NIM has fallen from 6.9% to 5.81%.

**CASE IV – When Interest rates decrease only for Assets**

	1998-99	1999-2000	2000-01	2001-02	2002-03	Total
1) Maturing Assets	11,478	8,366	7,238	6,047	4,665	37,794
2) Maturing Liabilities	8,169	3,761	6,626	5,475	7,263	31,294
3) Gap	3,309	4,605	612	572	(2,598)	6,500
4) Interest Rate on Assets	14.5%					
5) Interest Rate on Liabilities	12.5%					
6) Interest Income	1,664.31	1,213.07	1,049.51	876.81	676.42	5,480.12
7) Interest Expense	1,021.12	470.12	828.25	684.37	907.87	3,911.73
8) Net Interest Income	643.19	742.95	221.26	192.44	- 231.45	1568.39
9) Net Interest Margin (NIM) (%)	5.60	8.88	3.06	3.18	- 4.96	4.15

**Analysis**

The NIM has deteriorated massively to 4.15%. All the NIMs have been adversely effected whether for negative or positive gap. This is because the spreads have declined due to lower interest income being earned on assets. This may happen as in a decreasing rate scenario, increasing competition may force IDBI to lower interest rates offered on its loan portfolio. At the same time with the tax protection no longer being there and banks being offered other less risky alternatives, IDBI may find it difficult to entice both the retail and corporate investor to invest by offering lower interest rate. This will automatically lead to further squeeze in its margins.

## Section V

### CONCLUSIONS

The importance of managing the asset – liability mix in the Indian financial markets has emerged from the increasing volatility in the domestic interest rates as well as foreign exchange rates that has evolved after liberalization. This deregulated interest rate environment has brought pressure on the management of banks to maintain a good balance among spreads, profitability and long-term viability. Over the last few years there has been an intense competition and banks and financial institutions have been required to take up strategic planning as an exercise for asset liability management in order to survive and grow in the ever increasing competitive and risky environment.

These pressures have made the Indian banks and financial institutions realize the need for a structured and comprehensive approach to ALM. ALM is an integrated approach towards effective balance sheet management which can be achieved through proper restructuring of the asset and liability portfolios from time to time.

Recent developments have also reinforced the fact that a strong and efficient financial system is necessary to strengthen the domestic economy and market and also to enable it to meet the challenges posed by financial globalization. Building such a system constitutes the unfinished agenda of banking and financial sector reforms. Action on strengthening of the foundations of the system would necessarily involve an efficient ALM. Improving the quality of bank assets is an important way of strengthening the financial system. The quality of bank assets, in turn, depend upon the quantum

and incidence of NPA's in relation to the total portfolios. The causes for a high proportion of NPA could be many. Difficult recovery environment, poor credit decisions by bank management, priority sector lending – could be some of the causes for high levels of NPA. Thus, reduction in the high level of NPA's is an important aspect of the continuing reform process and also as a means of institutions strengthening. The high level of NPA's has been a proximate cause of worry for the public sector banks and financial institutions. Spreads in the Indian banking system have been high and yet the profitability level are low. Also, with increasing competition from foreign and private banks these margins are under further pressure. This calls for strengthening the foundations of the system and introducing structural changes in the form of improving assets quality, enhancing capital and improving profitability.

Risk, prior to 1991, was a concept alien to Indian banks specially the commercial banks. Risk management was never important to them because return was never a major concern for them. But the onset of financial sector reforms and the introduction of new financial instruments has completely changed the contour of Indian banking management. Banks have realized that efficient risk management is an area of prime concern for them.

In a bank there are a number of entries both on the asset and liability side of the balance sheet and presents a complete picture of the banks mismatches. ALM serves as an advance warning system of the banks sensitivity to adverse changes in the maturity profiles. ALM also helps a bank to plan well in advance the risk management strategies it needs to adopt. Most of the public sector banks do not have the sophistication of

managing mismatches in assets and liabilities though a few banks do have advanced ALM system. RBI is trying to guide these banks by providing them with an educative guideline on managing assets and liabilities. Also, the RBI expects banks to take into account the future interest rate movements both in the short and long term horizons. Recent analysis has shown that the international banks are in a better position as they have adopted risk management techniques on a large scale.

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