Reorienting strategies for asset-liability management

Professor K Seethapathi and Karuna Bohini examine how Indian banks are bein expected to develop initiatives for ALM.

Following the deregulation of many economies in the 1970s, banks had to adopt aggressive strategies to shore up their earnings, leading in turn to severe mismatches in their assets and liabilities. Against this background evolved the concept of asset-liability management (ALM). With the deregulation of the Indian banking sector, a similar scenario is currently being witnessed in Indian banks.

The Indian scenario

While most banks in other economies began strategic planning for ALM as early as 1970, Indian banks remained unconcerned until the 1980s. In fact, the deregulation that began in international markets during the 1970s almost coincided with the nationalisation of banks in India during 1969. Nationalisation brought a structural change in the Indian banking sector. Wholesale banking paved the way for retail banking and there was an all-round growth in branch network, deposit mobilisation and credit disbursement. Indian banks did meet the objectives of nationalisation: overall growth in savings, deposits and advances. But all this was at the cost of the profitability of the banks. Quality was subjugated to quantity, as loan sanctioning became a mechanical process rather than a serious credit assessment decision. Political interference was an additional malady.

Paradigm shift

As the real sector reforms began in 1992, it was felt necessary to restructure the Indian banking industry. The reform measures necessitated the deregulation of the financial sector, particularly the banking sector. The initiation of financial sector reforms brought about a paradigm shift in the banking industry. The Narasimham Committee report on the banking sector highlighted the weaknesses in the Indian banking system and suggested reform measures based on Basle norms. The guidelines that were issued subsequently laid the foundation for the reformation of the Indian banking sector.

As the real sector reforms began in 1992, it was necessary to restructure the banking industry. The initiation of financial sector reforms brought about a paradigm shift

The deregulation of interest rates and the scope for a diversified product profile gave banks greater leeway in their operations. As a result, new products and new operating styles exposed banks to newer and greater risks. Though the types of risks and their dimensions grew, the banks did not do much to address the situation. At this point, the Reserve Bank of India (RBI), the chief regulator of the Indian banking industry, has assumed responsibility for initiating risk management practices by banks. It announced prudential norms relating to income recognition, asset classification and provisioning and capital adequacy norms for the banks. These guidelines ensured that Indian banks followed international standards in risk management.

The prudential norms and the capit adequacy norms are expected to ensu safety and soundness of banks. Hov ever, on closer observation, these norm only tackle the risks at a macro leve The capital and the provisions serve a a cushion to the banks and ensure th they survive in the long run. But, d banks face risks in their day to da transactions, which alter the compos tion of their assets and liabilities on continuous basis? Ideally, banks shou manage their assets and liabilities t remain profitable and also sustai growth in the long run.

The first step in the right direction

ALM is strategic balance sheet manage ment of risks caused by changes in th interest rates, exchange rates, and th liquidity position of the bank. To mar age these risks, banks will have t develop suitable models based on the product profile and operational styl Ironically, many Indian banks are yet t take the required initiative in this dire tion. Though the reasons for such lac of initiative are varied, one importa one is that banks have so far been mar aged in a protected environment wit little exposure to the open market. Lac of technology and inadequate MIS, als prevented banks from moving towar effective ALM. The apathy of the bank made it imperative for the RBI to step i and push the process.

RBI's guidelines for ALM are primari aimed at enabling banks to tackle th liquidity risk and interest rate risk. Fo liquidity risk management, the asse and liabilities of the bank ar segregated into different groups base on their maturity profile. Based on th maturity profile, a statement o structural liquidity will have to b prepared by the banks. And to monito

Gap analysis – model for liquidity and interest rate risk management

Methodology

The case illustrates the use of gap methodology for ALM. The selection of the bank for the case analysis is based on the availability of information. The disclosure of information on maturity is not mandatory. Hence only few banks provide these details in their annual reports. Without considering the growth in business, the assets and liabilities of the an Indian nationalised bank for the year 1999-2000 are classified into different maturity buckets.

To assess the liquidity of the bank, the maturity gap for each maturity bucket is assessed. And to assess the interest rate risk, a planning horizon for forecasting interest rate fluctuations is selected and within each maturity bucket, all rate sensitive assets and rate sensitive liabilities are identified (see *Table 3*). Sensitivity is based on the impact of rate fluctuations during the forecasting period on the interest income and interest expense. The case considers a forecasting period of three months. All assets and liabilities that are subjected to repricing during this period, are considered as sensitive. The impact on the net interest income (NII) can be assessed as follows:

change in NII = gap x change in the interest rate.

Limitations

- The deposit rates as prevailing in the market are applied for computation of the interest cost;
- the interest on investments is computed based on the prevailing yields in the market; and
- average rates are considered for interest on advances and borrowings.

Assumptions

- The gap model assumes changes in the interest rates to be uniform for all maturities of assets and liabilities; and
- interest rates during the forecasting period are likely to increase by approximately 50 basis points. The increase in the interest rate is based on the following premises:
  - inflation (WPI) has risen to 6.2% (3% in March 2000);
  - about 46% of the budgeted gross borrowings of the government, amounting to Rs.536780m are yet to be raised from the market;
  - decline in the foreign exchange reserves by $2360m to $35676m since March 2000;
  - growth rate in industrial production (IIP) is expected to be around 13%; and
  - rising international interest rates.

There is a positive cumulative gap position till the next one-year, giving the bank greater scope for reserve management. But, there is a negative gap in the one to three years bucket. This gap is nearly 60% of the outflows. The negative gap that arises in this bucket can be explained by the deposit rate structure. The yield curve flattens for deposits beyond three years (*Figure 2*). Due to this flattening of the yield curve, depositors would not prefer maturities beyond three years. Eliminating/minimising this gap will depend on the renewal pattern of the deposits within this maturity bucket and also the ability of the bank to raise deposits/borrow funds that match the maturity.

The bank in this example maintained a positive gap in a scenario of an interest rate rise. Generally, it is more by default than by design that most banks have positive gap. The positive gap can be maintained as long as interest rates are expected to rise, as it will have a positive impact on the NIM. The impact on NIM will be exactly opposite if there is a fall in interest rates.

Banks should hence be cautious while forecasting interest rate movements. ■

TABLE 1

Liquidity risk assessment – maturity gap

(Indian Rs. in Millions)

	1-14 days	15-28 days	29-90 days	3-6 months	6-12 months	1-3 years	3-5 years	Beyond 5 years
Assets	49300.80	7333.10	17348.10	61235.70	27210.00	96988.20	54592.30	227272.60
Liabilities	45263.60	4959.60	17685.90	17011.10	23378.00	231688.00	8269.20	193030.60
Gap	4037.20	2373.50	-337.80	44224.60	3837.20	-134699.80	46323.10	34242.00
Cumulative Gap	4037.20	6410.70	6072.90	50297.50	54135.00	-80565.10	-34242.00	0.00

(£1= Rs.67.85)

TABLE 2

Interest rate risk assessment – rate sensitive gap

(Indian Rs. in Millions)

	1-14 days	15-28 days	29-90 days	Total
Rate Sensitive Assets (RSAs)	29534.30	7333.10	17348.10	54215.50
Rate Sensitive Liabilities (RSLs)	107.70	15687.20	11874.30	27669.20
Rate Sensitive Gap (RSG)	29426.60	-8354.10	5473.80	26546.30

FIGURE 1

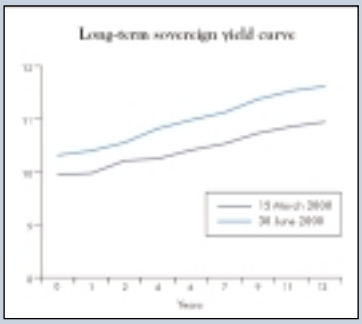

FIGURE 2

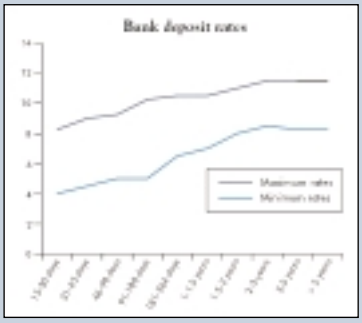

TABLE 3

Maturity and sensitivity pattern of assets and liabilities

(Indian Rs. in Millions)

Liabilities		Maturity	Amount	Interest	Assets		Maturity	Amount	Interest
Capital	NS	>5 yrs	2122.40		Cash	NS		4281.30	
Reserves & surplus	NS	>5 yrs	20604.00		Balances with RBI	NS	3-6 mths	42533.60	0.0400
Deposits						NS	1-14 days	7959.40	
Demand	NS	1-14 days	8155.50		Current account balances with banks	NS	1-14 days	7525.80	
	NS	1-3 years	46215.00		Investments				
Savings	NS	1-14 days	15875.00	0.0450	Government securities	S	1-14 days	1632.00	0.0887
	NS	1-3 years	142880.00			S	15-28 days	1115.60	0.0916
Term	S	15-28 days	15687.20	0.0550		S	29-90 days	1061.60	0.0916
	S	29-90 days	11874.30	0.0700		NS	3-6 mths	1772.00	0.0993
	NS	3-6 mths	14303.10	0.0800		NS	6-12 mths	2751.10	0.0993
	NS	6-12 mths	22961.70	0.0950		NS	1-3 years	11625.70	0.1028
	NS	1-3 years	42033.00	0.1050		NS	> 5yrs	140935.00	0.1068
	NS	3-5 years	8109.00	0.1100	Approved/securities	NS	> 5yrs	26244.20	0.12
	NS	> 5 years	146740.00	0.1100	Shares	NS	6-12 mths	3253.00	
Borrowings					Bonds	NS	1-3 yrs	1507.00	0.1453
RBI	NS	1-14 days	6.20	0.0600[1]		NS	3-5 yrs	25087.20	0.1442
	NS	29-90 days	2622.10		Mutual funds	NS	> 5 yrs	1464.00	
	NS	3-6 mths	2505.20		Subsidiaries	NS	> 5 yrs	2543.00	
Banks/others	S	1-14 days	107.70	0.0600	Advances				
	NS	3-6 mths	202.80	0.0850	Bills	S	1-14 days	19030.00	0.1225
	NS	6-12 mths	416.00	0.0850	Cash credits/ODs	S	1-14 days	8872.30	0.11501
	NS	1-3 yrs	565.30	0.1050		S	15-28 days	6217.50	
	NS	3-5 yrs	160.10	0.1150		S	29-90 days	16286.50	
	NS	> 5yrs	38.90	0.1200		NS	3-6 mths	16930.10	
Bills payable/inter-office adjustments	NS	1-14 days	10391.60			NS	6-12 mths	21210.80	
Subordinate debt	NS	> 5yrs	8497.70	0.1250		NS	1-3 yrs	57343.80	
					Term loans	NS	1-3 yrs	18373.60	0.1150
Other non-sensitive assets	NS	> 5yrs	18213.50			NS	3-5 yrs	29505.10	
							> 5yrs	31948.00	
					Fixed/other assets	NS	> 5yrs	32278.20	
Total			**541287.30**					**541287.30**	
Interest expended				**35122.20**	**Interest income**				**51958.90**

NS – Non-sensitive; S – Sensitive; [1] – Average cost

the short-term liquidity, the banks are required to prepare a statement of short-term dynamic liquidity.

For managing interest rate risk, RBI guidelines prescribed gap analysis. Based on the sensitivity of the assets and liabilities to interest rate fluctuations, they are classified into different maturity buckets. The rate sensitive gap (RSG) – the difference between the rate sensitive assets (RSAs) and the rate sensitive liabilities (RSLs) – will enable the banks to assess the impact of the rate fluctuations on their net interest margin (NIM). The model can also be extended to modify the RSG so as to attain a positive impact on the NIM. An essential ingredient for this is, however, an elaborate MIS at the micro-level.

In the case of currency risk management, banks in India have been given the discretion to maintain overnight open positions subject to maintenance of adequate capital.

Simply developing a suitable model for ALM does not eliminate the risks in the banks. ALM involves forecasting likely changes in the liquidity, interest rates and exchange rates. Forecasting these levels are difficult and complicated, due to the inter-linkage that is present between the money market and forex. It is this inter-linkage that forces RBI to change the interest rate structure by changing the bank rate on many occasions. During July 2000 RBI increased the bank rate by 1% and the CRR by 0.5%. This was in an attempt to strengthen the Indian rupee which reached a lowest close against the US dollar ($1=Rs.45.03). The hike in the bank rate, which is an indicative of the interest rate change, is likely to push up interest rates. If a bank is caught off guard to such fluctuations, then the entire ALM will go haywire. Hence a detailed analysis of market events and proper forecasting techniques become essential part of ALM.

Based on the guidelines issued by the RBI a case analysis on ALM using the gap model is presented on page 53.

Key requirements

Banks have initiated the ALM process along the lines prescribed by the RBI. However, the key to the successful implementation of the process is information technology. Do Indian banks have the necessary MIS in place to get the benefit of these models? Courtesy the nationalisation agenda, Indian banks, in the public sector, have gained spatial spread over the years. Access to the right information at the right time is the key for effective implementation of ALM. Indian banks will have to put in place the required MIS for the successful implementation of ALM. With ALM taking center stage, banks will have no choice but to reorient their strategies. Indian banks, especially those in the public sector, have a long way to go.

Professor K Seethapathi is a Faculty Member at the Association of Certified Treasury Managers. He is also on the editorial board of their monthly magazine, Treasury Management.

Karuna Bohini is a Research Associate focusing on risk management and asset liability. She is also a member of the editorial team.