Risk Management in Financial Institutions*

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I am indeed pleased to be here to discuss an important topic like risk management. This is all the more so in an area like finance, where risk and its management has assumed greater significance.

I would first attempt to discuss the renewed interest on risk management in recent years due to changing risk perception in financial institutions followed by an overview of the types of risks and the strategies for risk management. Thereafter, I propose to deal with the role of the Board and organisational issues involved in risk management. This would be followed by the initiatives taken by the Reserve Bank in this regard. Finally, I would raise certain issues relating to management of risks. As banks account for a predominant share in the financial sector in India, I may refer to banks frequently in my talk today.

Risk has been present always in the banking business but the discussion on managing the same has gained prominence only lately. Bankers world-wide have come to realise that the growing deregulation of local markets and their gradual integration with global markets have deepened their anxieties.

With growing sophistication in banking operations, while lending and deposit-taking have continued to remain the mainstay of a majority of commercial banks, many have branched into derivatives trading, securities underwriting and corporate advisory businesses. Some banks have even expanded their traditional credit product lines to include asset securitisation and credit derivatives. Still others have greatly increased their transaction processing, custodial services or asset management businesses, in the pursuit of increased fee income. As a consequence, the issue of risk management has gained new recognition in recent times.

With improvements in information technology, more and more banks will possibly venture into the relatively new world of on-line electronic banking covering apart from traditional banking, providing of bill presentation and payment services. This would mean an increase in the diversity and complexity of risks. Banks would have to develop risk management systems that are rigorous and comprehensive, yet flexible enough to address newer risks they assume.

Out of the four risks confronting financial institutions *viz.,* credit risk, interest rate risk, foreign exchange risk and liquidity risk, the credit risk remains the predominant risk for most banks, despite changes in banking over the last few years. You will recall that during the Asian financial crisis, non-performing loans in Indonesia, Malaysia, South Korea and Thailand soared to over 30 per cent of total assets of the financial system. The costs of dealing with the crisis have been enormous, involving massive transfer of resources. Even in normal times, credit risk attracts considerable amount of attention of credit planners and is extremely important.

As you may be aware, the credit risk depends on both internal and external factors. The external factors are the state of the economy, swings in commodity prices and equity prices, foreign exchange rates and interest rates, etc. The internal factors are deficiencies in loan policies and administration of loan portfolio which would cover weaknesses in the area of prudential credit concentration limits, appraisal of borrowers' financial position, excessive dependence on

collaterals and inadequate risk pricing, absence of loan review mechanism and post sanction surveillance, etc. Such risks may extend beyond the conventional credit products such as loans and letters of credit and appear in more complicated, less conventional forms, such as credit derivatives or tranches of securitised assets.

The second category of risk that has gained prominence is interest rate risk. Interest rate risk arises because banks fix and refix interest rates on their resources and on the assets in which they are deployed at different times. Changes in interest rates can significantly impact the net interest income, depending on the extent of mismatch between the times when the interest rates on asset and liability are reset. Any such mismatches in cash flows (fixed assets or liabilities) or repricing dates (floating assets or liabilities) expose banks' net interest margin to variations.

A third important category of risk pertains to foreign exchange risk. The risk inherent in running open foreign exchange positions have become pronounced in recent years owing to the wide variation in exchange rates. Such risks arise owing to adverse exchange rate movements which may affect a bank's open position, either spot or forward, or a combination of the two, in any individual foreign currency.

The final major category of financial risk is liquidity risk. The liquidity risk arises from funding of long-term assets by short-term liabilities or resources, thereby making the liabilities subject to rollover or refinancing risk. Those banks that fund their domestic assets with foreign currency deposits with them may be particularly susceptible to liquidity risk when sharp fluctuations in exchange rates and market turbulence make it difficult to retain sources of financing.

Beyond the four basic financial risks, banks have a host of other concerns. Some of them, like operating risk, are a natural outgrowth of their business. Banks employ standard risk avoidance techniques to mitigate them. In other cases, for instance, where counter-party risk is seen as significant, it is evaluated using standard credit risk procedures. Likewise, most bankers would view legal risks as arising from their credit decisions or, more likely, from absence of proper procedure while finalising a financial contract. It does not require very sophisticated tools to cover such risk.

These are just some of the risks that banks must manage, and clearly the list I have set forth is not exhaustive. In particular, banks in emerging market economies are subject to a unique set of risks as a result of the financing and investment cycles in their countries.

How do we try to manage these risks? Irrespective of the nature of risk, the best way for banks to protect themselves is to identify the risks, accurately measure and price it, and maintain appropriate levels of reserves and capital, in both good and bad times. However, this is often easier said than done, and more often than not, developing a holistic approach to assessing and managing the many facets of risks remains a challenging task for the financial sector.

What then are the optimal strategies to manage these risks? In managing credit risk, the key issue is to recognise the need to apply a consistent evaluation and rating scheme of all investment opportunities. This is essential in order for credit decisions to be made in a consistent manner. Prudential limits need to be laid down on various aspects of credit, *viz.,* benchmark current

debt/equity and profitability ratios, debt service coverage ratios, concentration limits for single/group borrower, maximum exposure limits to industry, etc. There should be provision of some flexibility to allow for very special features. There needs to be developed a comprehensive risk scoring system that serves as a single point indicator of diverse risk factors of counter-party.

As for managing interest rate risk, most commercial banks make a clear distinction between their trading activity and their balance sheet exposure. As regards trading book, Value-at-Risk (VaR) is presently the standard approach. The VaR method is employed to assess the potential loss that could crystallise on trading position or portfolio due to variations in market interest rate and prices. For balance sheet exposure to interest rate risk, banks rely on 'gap reporting system', identifying asymmetry in repricing of assets and liabilities commonly known as gap and putting in place a gap reporting system. This is often supplemented with balance sheet simulation models to investigate the effect of interest rate variation on reported earnings over a medium-time horizon.

Coming to foreign exchange risk, limits are key elements of risk management in foreign exchange trading, as they are for all trading business. As a general characterisation, banks with active trading positions have tended to adopt the VaR approach to measure the risk associated with exposure. For banks which could not develop VaR, some stress testing is required to be conducted to evaluate the potential loss associated with changes in the exchange rate. This is done for small movements in the exchange rates, as well as for historical maximum movements.

The final point is the measurement of liquidity risk. There are several traditional ratios for liquidity risk measurement, *viz.,* loans to total assets, loans to core deposits, ratio of large liabilities to earning assets and loan losses to net loans. In addition, prudential limits are placed on various liquidity measures like inter-bank borrowings and core deposits *vis-à-vis* core assets.

Several points need to be tackled as regards positioning appropriate risk management strategies. Worldwide, there is an increasing trend towards centralising risk management with integrated treasury management to benefit from information synergies on aggregate exposure, as well as scale economies and easier reporting to top management. The primary responsibility of understanding the risks run by the bank and ensuring that such risks are appropriately addressed should be vested with the Board of Directors. At organisational level, overall risk management needs to be vested with an independent Risk Management Committee or Executive Committee of the top Executives entrusted with the responsibility of identifying, measuring and monitoring the risk profile of the bank that reports directly to the Board of Directors. The Committee should develop policies and procedures, verify the models used for pricing complex products and identify newer risks impacting the banks' balance sheet. Finally, adherence to risk parameters of the various operating departments of the bank should also be overseen by the Committee.

Observers are by now unanimous in their view that developing sound and healthy financial institutions, especially banks, is a *sine qua non* for maintaining overall stability of the financial system. Keeping this in view, the Reserve Bank has issued broad guidelines for risk management systems in banks last year. This has placed the primary responsibility of laying down risk parameters and establishing the risk management and control system on the Board of Directors of the bank. However, the implementation of the integrated risk management could be assigned

to a risk management committee or alternately, a committee of top executives that reports to the Board. The risk management guidelines also require banks to constitute a high level credit policy committee to deal with issues pertaining to credit sanction, disbursement and follow-up procedures and to manage and control credit risk for the bank as a whole. The Reserve Bank has further advised banks to concurrently set up an independent credit risk management department to enforce and monitor compliance of the risk parameters and prudential limits set by the Board or Credit Policy Committee. The present set of guidelines are purported to serve as a benchmark to the banks, which are yet to establish an integrated risk management system.

However, it is to be recognised that, in view of the diversity and varying size of balance sheet items as between banks, it might neither be possible nor necessary to adopt a uniform risks management system. The design of risk management framework should, therefore, be oriented towards the bank's own requirement dictated by the size and complexity of business, risk philosophy, market perception and the existing level of capital. While doing so, banks may critically evaluate their existing risk management system in the light of the guidelines issued by the Reserve Bank and should identify the gaps in the existing risk management practices and the policies and strategies for complying with the guidelines.

In addition to the risk management guidelines, the levels of transparency and standards of disclosure have gradually been enhanced over the years so as to provide a clearer picture of balance sheet to informed readers. Accordingly, from the year ended March 31, 2000, an enhanced set of disclosures are required to be disclosed by banks as 'Notes to Accounts' to their balance sheet. These include maturity pattern of loans and advances, maturity pattern of investments in securities, foreign currency assets and liabilities, movements in NPAs, maturity pattern of deposits, maturity pattern of borrowings, and lending to sensitive sectors like capital market and real estate. Such disclosures and transparency practices are aimed at improving the process of expectation formation by market players about bank behaviour and eventually lead to effective decision-making in banks. In addition, the Reserve Bank has laid down credit concentration norms, both for individual borrowers as well as to a group as a whole. These limits presently stand at 20 per cent and 50 per cent of the financing institutions' capital fund.

The banking industry is clearly evolving towards higher levels of risk management techniques and approaches. However, several issues need to be addressed by the banking system in this regard. I would flag a few of them for you to dwell over.

First, risk management is closely related to ALM. Any mismatch between assets and liabilities increases risks, whether it is interest rate risk, credit risk or liquidity risk. The recent experience of the South East Asian economies clearly demonstrated the need for having effective risk management techniques. Accurate risk identification and classification of past losses into expected and unexpected losses would help in positioning comprehensive internal controls. Not a simple proposition, it requires in-depth study and analysis of financial and other markets.

Secondly, the evaluation of credit rating continues to be an imprecise process. Over time, one should expect that the banking industry's rating procedures should be compatible with rating systems elsewhere in the capital market and have the same degree of objectivity.

A third area where improvements seem warranted is the analysis of ex-post outcomes from lending. Credit losses are, currently not precisely related to credit rating. They need to be more closely tracked by the banking industry than they currently are. In short, credit pricing, credit rating and expected losses ought to be demonstrably linked.

Fourthly, interest rate risk approaches include both the trading systems and balance sheet risk analysis. On trading systems, there has been considerable improvement. The VaR methodology has converted a rather subjective hand-on process of risk control to a more quantitative one. However, several questions still remain unanswered. The first of these is that the whole approach of VaR is dependent upon estimated distribution of returns. These are the key inputs to the risk measure, but the true *ex-ante* distribution is unknown. Estimates are obtained from either historical data or Monte Carlo simulation, but in either case, the estimated distribution is not unique. This problem in risk management will need to be examined by the banking industry.

Finally, as banks move more towards off-balance sheet activities, the implied risk of agency activities must be better integrated into overall risk management and strategic decision making. Currently, they are ignored when bank risk management is considered or are at a fairly primitive stage. If reasonable exposure estimates are to be obtained, and the true costs of risk absorption are to be factored in the operations, much more needs to be done including building up of a strong Management Information System (MIS) backed up by a sound database.

To conclude, risk management systems have attracted considerable attention in the financial sector. Considerably more work needs to be done. The current state of risk management is merely a beginning. Many questions still remain unanswered, many questions have been answered only superficially and for certain others, we have no complete and comprehensive answers. It is here that the management science professionals have a clear role to play in this important task.

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* Keynote address delivered by Shri Jagdish Capoor, Deputy Governor, Reserve Bank of India, at One Day Seminar on Risk Management in Financial System at Lala Lajpat Rai Institute of Management, Mumbai on October 6, 2000.