

LIQUIDITY RISK MANAGEMENT DEMYSTIFIED

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Readers may wonder the usage of the word *demytified* in Liquidity Risk Management (LRM)!! "Is the concept of LRM so complex to attempt demystification or is it a tactical attempt by the author to draw the reader's attention and arouse in him or her the initial curiosity ".....these probably are the thoughts running through your minds. The answer, I am sure, you would find as you read on.

Let's start with the fundamental question of what is banking? The traditional definition of banking viz., "*accepting deposits for the purpose of lending or investment*" is very much true at present as it has been in the past, but today, the name of the game is "*risk management, thy name is banking*". Banking, as we all know, is a risky business but that's the business of banking. Banks view risk as a chameleon that keeps changing its colours. It cannot be wished away and is there all over a bank's balance sheet in various forms like the credit risk, market risk and liquidity risk. It keeps changing dimensions and banks being highly leveraged institutions need to have proper risk management systems to guard themselves against these risks. This can be effectively done only through a well-defined process of risk management which basically involves identification, measurement and management of risks.

The reader of an article, given the topic, would like to know answers to three questions viz. *what, why & how* of the subject matter under narration. Keeping this in perspective are the author's simplified responses in the succeeding paragraphs to what is LRM, why LRM & how LRM?

What is Liquidity Risk Management?

What does the word *liquidity* in liquidity risk management mean? *Liquidity*, as defined by the Bank for International Settlement is *the ability to fund increases in*

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assets and meet obligations as they come due. To put it in plain vanilla terms liquidity is having just enough cash to meet the current needs. What, therefore, is the liquidity risk for a bank? Liquidity risk is the current and prospective risk to a bank's earnings and equity arising out its inability to meet the obligations when they become due. Thus effective LRM is the management of liquidity by raising sufficient funds either by increasing liabilities or by converting assets promptly and at a reasonable cost.

Maintenance of appropriate liquidity is a sine qua-non of banking and liquidity management is as old as banking itself. Banks were always thinking they were liquid and hence were questioning the very need for LRM. The liquidity crisis which some of the banks faced, made them as also the others in the system, realise that thinking alone is no good. They need to have them too. Banks have now realised that one of the significant risks they have to manage consciously and effectively is the liquidity risk. Ensuring appropriate liquidity has become a never-ending day-to-day problem for banks. Those handling LRM in banks always seem to have enough liquidity until they need it and thus LRM has shot into prominence. It has become imperative for banks to have adequate liquidity risk management process commensurate with it's size, complexity and liquidity risk profile as one size does not fit all.

How does the liquidity problems arise? They basically arise on account of the mismatches in the timing of inflows and outflows. What are these inflows and outflows? Per se, liabilities being the sources of funds are inflows while the assets being application of funds are outflows. However, in the context of LRM we need to look at it from the point of maturing liabilities and maturing assets ; a maturing liability is an outflow while a maturing asset is an inflow. The need for LRM arises on account of the mismatches in maturing assets and maturing liabilities.

Mismatching, as we all know, is an inherent feature of banking. It's said and said very well too, that *the crux of banking is managing mismatches. If banks were to have perfectly matched portfolios they would neither make money nor need treasury managers to run their business. Any one can manage banks.*

Why LRM?..... The Importance of LRM

Why should banks have the best LRM practices in place? Just imagine what could happen to a bank if a depositor wanting to withdraw his deposit is told to do so later or the next day in view of non-availability of cash. Are not the consequences too dreadful to visualize? It could very well sound the death knell of the bank. No bank however strong and mighty it be, would be able to survive if all the depositors queue up demanding their money back.

In this context, it would be appropriate to touch upon the issues of solvency and liquidity. To a few they might sound synonymous but to many, they are known to be different. A bank is said to be solvent if its net worth is not negative. To put it differently, a bank is solvent if the total realizable value of its assets is more than its outside liabilities (i.e. other than its equity/owned funds). At any point in time a bank could be (i) both solvent and liquid or (ii) liquid but not solvent or (iii) solvent but not liquid or (iv) neither solvent nor liquid. Effective liquidity management is crucial for increasing the profitability as also the long-term viability/solvency of a bank.

A liquidity problem in a bank could be the first symptom of a financial trouble brewing. If not addressed quickly and effectively, it could very well snowball into a thunder ball of ultimate destruction. The balance sheets of banks are swelling in complexity and managing liquidity properly is going to be much more challenging in the days to come. Liquidity problems can cause significant disruptions on either side of a bank's balance sheet. They have, therefore, to be assessed and addressed on an enterprise-wide basis. A liquidity problem in a bank could also transcend individual banks to cause systemic disruptions. Banks

play a significant role as liquidity providers in the financial system and to play it effectively they need to have sound liquidity-risk management systems in place. With greater opening up of the world economies and easier cross border flows of funds, the repercussions of liquidity disturbances in one financial system could cause ripples in others. The recent sub-prime crisis in the US and its impact on the others, stands ample testimony to this reality. Liquidity Risk Management, is thus of critical importance not only to bankers but to the regulators as well.

Effective LRM brings in a host of benefits. It smoothens the operations of banks, enhances the confidence factor of its stakeholders, nurtures a healthy relationship with the borrowers/depositors, avoids fire sale of assets, lowers the default premium, improves the profitability and enhances the solvency of a bank. Which banker would then not like to have effective LRM system in his/her bank whether mandated by the regulator or not?

How LRM?

Is it possible for banks to predict with utmost precision the exact quantum of liquidity that is needed at any point of time? Possibility not. In reality, the forecast may turn out to be something more or something less. To what extent more or what extent less would depend on the efficacy of LRM and herein arises the challenge of near accurate quantification; without quantification of a risk, its management and control is akin to groping in the dark. With quantification, a bank comes to know of the extent of the risk, thus facilitating management of that risk. The greater the accuracy in measurement, the more effective the outcome of the process would be. Is there any simple mechanism of estimating the liquidity requirements?

There are two simple ways of measuring liquidity ; one called the stock approach and the other, the flow approach. The stock approach is the first step in evaluating liquidity. Under this method certain ratios, like liquid assets to short term total liabilities, purchased funds to total assets, core deposits to total assets

loan to deposit ratio etc. are calculated and compared to the benchmarks that a bank has set for itself. While the stock approach helps up in looking at liquidity from one angle, it does not reveal the intrinsic liquidity profile of a bank.

The flow approach on the other hand forecasts liquidity at different points of time. It looks at the liquidity requirements today, tomorrow, the day thereafter, in the next seven to 14 days and so on. The maturity ladder thus constructed helps in tracking the cash flow mismatches over a series of specified time periods. The liquidity controls apart from being fixed maturity bucket-wise should also encompass maximum cumulative mismatches across the various time bands.

In zeroing in on the ratios or methodologies it would be better to keep them as simple as feasible. Banks with robust financial modeling and reporting systems or data warehousing tools could, however, adopt complex metrics like loan loss migration, retail deposits stability and loan prepayment as a part of their liquidity risk measurement process.

There are three manifestations of liquidity risk viz., funding risk, time risk and call risk. Funding risk arises when the need to replace unexpected outflows arise; for example, unforeseen premature withdrawal of deposits. Time risk arises when the need to compensate for non-receipt of expected inflows arise; for instance, the anticipated repayment of loans not happening. Call risk arises when off balance sheet exposures crystallize as on balance sheet exposures. Proper building up of these eventualities in the liquidity management process is of critical importance.

Robust MIS is a prerequisite in LRM. Timely and precise information is the lifeblood of any sound risk management process. A bank has the option of managing liquidity through the (i) liability side or (ii) asset side or (iii) both the assets and liabilities side. When done through the liability side, the size of the balance sheet remains unaltered ; for instance, the deposit pay-offs being offset

through fresh deposits mobilisation. When done through the asset side, the size of the balance sheet gets shrunk ; for instance, sale of investments to repay the borrowings. When done through a combination of both the assets and the liabilities side, the balance sheet size is reduced to the extent of the sale of assets; for instance net funding requirements being met partly by deposit accretion and securitization. Which of these is the best? A million dollar question for which there is no straightjacket answer. The best option depends on which of these is the most effective, in terms of cost and business strategies.

The maxim, "higher the risk, higher the return", encapsulates the dilemma in risk management. There is always a trade off between earnings and risks and liquidity risk is no exception. There is thus a price for liquidity. The more the resources of a bank are tied up in readiness to meet the demands of liquidity, the higher would be the impact on profitability. Holding excess liquidity represents a loss to the bank in terms of earnings. The right balancing thus becomes a crucial factor in effective management of liquidity.

What are some of the key considerations in LRM? They include (i) the availability of liquid assets (ii) the extent of volatility of the deposits (iii) the degree of reliance on volatile sources of funding (iv) the level of diversification of funding sources (v) the historical trend of stability of deposits (vi) the quality of maturing assets (vii) the market reputation (viii) the availability of undrawn standbys (ix) the impact of off balance sheet exposures on the balance sheet and (x) the contingency plans.

Some of the issues that need to be kept in view while managing liquidity include (i) the extent of operational liquidity, reserve liquidity and contingency liquidity that are required (ii) the impact of changes in the market or economic condition on the liquidity needs (iii) availability, accessibility and cost of liquidity (iv) existence of early warning systems to facilitate prompt action prior to surfacing of a problem and (v) the efficacy of the processes in place to ensure successful execution of the solutions in times of need. Banks should maintain robust liquidity

buffers and have contingency plans to deal with liquidity crisis. The contingency plans also need to be tested to assess their impact. In this context, Churchill's remarks, "However beautiful the strategy, you should occasionally look at the results", is worth recalling.

In times of system wide stress, banks may face considerable pressure of liquidity demands, both from the asset and liability side of their balance sheets. On the liability side they may encounter challenges in rolling over the near term debts while on the asset side, the off-balance sheet exposures may rollover on to the balance sheet. Banks should, therefore, subject their liquidity position to stress testing and scenario analysis to assess the impact of sudden stress events. The scenarios could be based either on historical or hypothetical events and the liquidity duress under stress situations needs to be assessed at three levels viz., moderate, high and significant.

The Basel Committee on Banking Supervision (BCBS) has been reviewing the liquidity risk management practices worldwide. It had set up a working group in December 2006 to review liquidity supervision practices in member countries. The working group, taking into account the previous publication of the BCBS titled, "Sound Practices for Managing Liquidity in Banking Organisations" issued in February 2000, submitted its report in December 2007. While concluding that the guidance outlined in the previous publication on the subject remains very much relevant in the current context, the working group has identified areas for updating and strengthening. The BCBS has, therefore, requested the working group to update the sound practices in LRM for publication later this year. In the meantime, the BCBS has published a summary of the key findings of the working group in February 2008 titled, "Liquidity Risk: Management and Supervisory Challenges". One of the significant observations therein relates to the importance of stress testing in evaluating risks as outcomes of market wide disruptions besides the emphasis on perfect coordination between a bank's treasury functions and business lines for effective assessment and management of

potential contingent risks. It has been observed that many a times banks' funding desks or treasury benches had assumed a highly rated asset as liquid and funded it overnight. Such assets in reality turned out to be illiquid. In this context the remarks of Moorad Choudhry, London Metropolitan University, "You need to insist that the traders tell the funding desk what's happening. It's just the sensible thing to do, but you'd be surprised how often that doesn't happen in banks" sounds very much relevant.

It is also to be appreciated that there are strong linkages between liquidity and capital, more so in times of financial stress. Liquidity problems have the potential to affect the balance sheet of banks and thus the capital adequacy. Improvement in one area benefits the other and banks would be better off with strong capital base to withstand the kind of liquidity risk challenges seen in today's markets.

Having reached the end, the reader would agree that there has been no demystification, as there was no mystification for demystification to start with. It's only simplification of LRM. Wishing the readers a happy LRM in banking. Why in banking alone?.....in their individual lives as well.