**RISK MANAGEMENT - ADDITIONAL READING MATERIAL**

**LIQUIDITY RISK MANAGEMENT**

1. **Introduction:**

Liquidity is a bank’s capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. Liquidity risk is the inability of a bank to meet such obligations as they become due, without adversely affecting the bank’s financial condition. Effective liquidity risk management helps ensure a bank’s ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing. This assumes significance on account of the fact that liquidity crisis, even at a single institution, can have systemic implications..

To put it in plain vanilla terms, liquidity is having enough cash to meet the current needs and 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 liquidity risk management is the management of liquidity by raising sufficient funds either by increasing liabilities or by converting assets promptly and at a reasonable cost. It has now become imperative for banks to have an adequate liquidity risk management process commensurate with it's size, complexity and liquidity risk profile as one size does not fit all.

Liquidity problems arise on account of the mismatches in the timing of inflows and outflows. Per se, the liabilities being the sources of funds are inflows while the assets being application of funds are outflows. However, in the context of Liquidity Risk Management, we need to look at this issue 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 Liquidity Risk Management 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. Anyone can manage banks.

1. **Liquidity Risk Management - Need & Importance:**

A bank is said to be solvent if it's 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 it's equity/owned funds). As such, 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. The need to stay both solvent and liquid therefore, makes effective liquidity management crucial for increasing the profitability as also the long-term viability/solvency of a bank. This also highlights the importance of the need of having the best Liquid Risk Management practices in place in Banks.

We can very well 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. The consequences could be severe and may even sound the death knell of the bank. Any bank, however, strong it may be, would not be able to survive if all the depositors queue up demanding their money back.

A Liquidity problem in a bank could be the first symptom of financial trouble brewing and shall need to be assessed and addressed on an enterprise-wide basis quickly and effectively, as such problems can not only cause significant disruptions on either side of a bank's balance sheet but can 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 others, stands ample testimony to this reality. Liquidity Risk Management, thus, is of critical importance not only to bankers but to the regulators as well.

Some Key Considerations in LRM include

1. Availability of liquid assets,
2. Extent of volatility of the deposits,
3. Degree of reliance on volatile sources of funding,
4. Level of diversification of funding sources,
5. Historical trend of stability of deposits,
6. Quality of maturing assets,
7. Market reputation,
8. Availability of undrawn standbys,
9. Impact of off balance sheet exposures on the balance sheet, and
10. Contingency plans.

Some of the issues that need to be kept in view while managing liquidity include

1. The extent of operational liquidity, reserve liquidity and contingency liquidity that are required
2. The impact of changes in the market or economic condition on the liquidity needs
3. The availability, accessibility and cost of liquidity
4. The existence of early warning systems to facilitate prompt action prior to surfacing of the problem and
5. The efficacy of the processes in place to ensure successful execution of the solutions in times of need.
6. **Potential Liquidity Risk Drivers:**

The internal and external factors in banks that may potentially lead to liquidity risk problems in Banks are as under:

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| **Internal Banking Factors** | **External Banking Factors** |
| High off-balance sheet exposures. | Very sensitive financial markets depositors. |
| The banks rely heavily on the short-term corporate deposits. | External and internal economic shocks. |
| A gap in the maturity dates of assets and liabilities. | Low/slow economic performances. |
| The banks’ rapid asset expansions exceed the available funds on the liability side | Decreasing depositors’ trust on the banking sector. |
| Concentration of deposits in the short term Tenor | Non-economic factors |
| Less allocation in the liquid government instruments. | Sudden and massive liquidity withdrawals from depositors. |
| Fewer placements of funds in long-term deposits. | Unplanned termination of government  deposits. |

1. **Types of Liquidity Risk:**

Banks face the following types of liquidity risk:

1. **Funding Liquidity Risk** – the risk that a bank will not be able to meet efficiently the expected and unexpected current and future cash flows and collateral needs without affecting either its daily operations or its financial condition.
2. **Market Liquidity Risk** – the risk that a bank cannot easily offset or eliminate a position at the prevailing market price because of inadequate market depth or market disruption.
3. **Principles for Sound Liquidity Risk Management:**

After the global financial crisis, in recognition of the need for banks to improve their liquidity risk management, the Basel Committee on Banking Supervision (BCBS) published *“Principles for Sound Liquidity Risk Management and Supervision”* in September 2008. The broad principles for soundliquidity risk management by banks as envisaged by BCBS are as under:

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| **Fundamental principle for the management and supervision of liquidity risk** | |
| Principle 1 | A bank is responsible for the sound management of liquidity risk. A bank should establish a robust liquidity risk management framework that ensures it maintains sufficient liquidity, including a cushion of unencumbered, high quality liquid assets, to withstand a range of stress events, including those involving the loss or impairment of both unsecured and secured funding sources. Supervisors should assess the adequacy of both a bank’s liquidity risk management framework and its liquidity position and should take prompt action if a bank is deficient in either area in order to protect depositors and to limit potential damage to the financial system. |
| **Governance of liquidity risk management** | |
| Principle 2 | A bank should clearly articulate a liquidity risk tolerance that is appropriate for its business strategy and its role in the financial system. |
| Principle 3 | Senior management should develop a strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance and to ensure that the bank maintains sufficient liquidity. Senior management should continuously review information on the bank’s liquidity developments and report to the board of directors on a regular basis. A bank’s board of directors should review and approve the strategy, policies and practices related to the management of liquidity at least annually and ensure that senior management manages liquidity risk effectively. |
| Principle 4 | A bank should incorporate liquidity costs, benefits and risks in the internal pricing, performance measurement and new product approval process for all significant business activities (both on- and off-balance sheet), thereby aligning the risk-taking incentives of individual business lines with the liquidity risk exposures their activities create for the bank as a whole. |
| **Measurement and management of liquidity risk** | |
| Principle 5 | A bank should have a sound process for identifying, measuring, monitoring and controlling liquidity risk. This process should include a robust framework for comprehensively projecting cash flows arising from assets, liabilities and off-balance sheet items over an appropriate set of time horizons. |
| Principle 6 | A bank should actively monitor and control liquidity risk exposures and funding needs within and across legal entities, business lines and currencies, taking into account legal, regulatory and operational limitations to the transferability of liquidity. |
| Principle 7 | A bank should establish a funding strategy that provides effective diversification in the sources and tenor of funding. It should maintain an ongoing presence in its chosen funding markets and strong relationships with funds providers to promote effective diversification of funding sources. A bank should regularly gauge its capacity to raise funds quickly from each source. It should identify the main factors that affect its ability to raise funds and monitor those factors closely to ensure that estimates of fund raising capacity remain valid. |
| Principle 8 | A bank should actively manage its intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions and thus contribute to the smooth functioning of payment and settlement systems. |
| Principle 9 | A bank should actively manage its collateral positions, differentiating between encumbered and unencumbered assets. A bank should monitor the legal entity and physical location where collateral is held and how it may be mobilised in a timely manner. |
| Principle 10 | A bank should conduct stress tests on a regular basis for a variety of short-term and protracted institution-specific and market-wide stress scenarios (individually and in combination) to identify sources of potential liquidity strain and to ensure that current exposures remain in accordance with a bank’s established liquidity risk tolerance. A bank should use stress test outcomes to adjust its liquidity risk management strategies, policies, and positions and to develop effective contingency plans. |
| Principle 11 | A bank should have a formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. A CFP should outline policies to manage a range of stress environments, establish clear lines of responsibility, include clear invocation and escalation procedures and be regularly tested and updated to ensure that it is operationally robust. |
| Principle 12 | A bank should maintain a cushion of unencumbered, high quality liquid assets to be held as insurance against a range of liquidity stress scenarios, including those that involve the loss or impairment of unsecured and typically available secured funding sources. There should be no legal, regulatory or operational impediment to using these assets to obtain funding. |
| **Public disclosure** | |
| Principle 13 | A bank should publicly disclose information on a regular basis that enables market participants to make an informed judgment about the soundness of its liquidity risk management framework and liquidity position. |

Thus, a sound liquidity risk management system would envisage that:

i) A bank should establish a robust liquidity risk management framework.

ii) The Board of Directors (BoD) of a bank should be responsible for sound management of liquidity risk and should clearly articulate a liquidity risk tolerance appropriate for its business strategy and its role in the financial system.

iii) The BoD should develop strategy, policies and practices to manage liquidity risk in accordance with the risk tolerance and ensure that the bank maintains sufficient liquidity. The BoD should review the strategy, policies and practices at least annually.

iv) Top management/ALCO should continuously review information on bank’s liquidity developments and report to the BoD on a regular basis.

v) A bank should have a sound process for identifying, measuring, monitoring and controlling liquidity risk, including a robust framework for comprehensively projecting cash flows arising from assets, liabilities and off-balance sheet items over an appropriate time horizon.

vi) A bank’s liquidity management process should be sufficient to meet its funding needs and cover both expected and unexpected deviations from normal operations.

vii) A bank should incorporate liquidity costs, benefits and risks in internal pricing, performance measurement and new product approval process for all significant business activities.

viii) A bank should actively monitor and manage liquidity risk exposure and funding needs within and across legal entities, business lines and currencies, taking into account legal, regulatory and operational limitations to transferability of liquidity.

ix) A bank should establish a funding strategy that provides effective diversification in the source and tenor of funding, and maintain ongoing presence in its chosen funding markets and counterparties, and address inhibiting factors in this regard.

x) Senior management should ensure that market access is being actively managed, monitored, and tested by the appropriate staff.

xi) A bank should identify alternate sources of funding that strengthen its capacity to withstand a variety of severe bank specific and market-wide liquidity shocks.

xii) A bank should actively manage its intra-day liquidity positions and risks.

xiii) A bank should actively manage its collateral positions.

xiv) A bank should conduct stress tests on a regular basis for short-term and protracted institution-specific and market-wide stress scenarios and use stress test outcomes to adjust its liquidity risk management strategies, policies and position and develop effective contingency plans.

xv) Senior management of banks should monitor for potential liquidity stress events by using early warning indicators and event triggers. Early warning signals may include, but are not limited to, negative publicity concerning an asset class owned by the bank, increased potential for deterioration in the bank’s financial condition, widening debt or credit default swap spreads, and increased concerns over the funding of off- balance sheet items.

xvi) To mitigate the potential for reputation contagion, a bank should have a system of effective communication with counterparties, credit rating agencies, and other stakeholders when liquidity problems arise.

xvii) A bank should have a formal contingency funding plan (CFP) that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. A CFP should delineate policies to manage a range of stress environments, establish clear lines of responsibility, and articulate clear implementation and escalation procedures.

xviii) A bank should maintain a cushion of unencumbered, high quality liquid assets to be held as insurance against a range of liquidity stress scenarios.

xix) A bank should publicly disclose its liquidity information on a regular basis that enables market participants to make an informed judgment about the soundness of its liquidity risk management framework and liquidity position.

1. **Governance of Liquidity Risk Management:**

The Reserve Bank had issued guidelines on Asset Liability Management (ALM) system, covering inter alia liquidity risk management system, in February 1999 and October 2007. Successful implementation of any risk management process has to emanate from the top management in the bank with the demonstration of its strong commitment to integrate basic operations and strategic decision making with risk management. Ideally, the organisational set up for liquidity risk management should be as under:

1. **The Board of Directors (BoD):**

The BoD should have the overall responsibility for management of liquidity risk. The Board should decide the strategy, policies and procedures of the bank to manage liquidity risk in accordance with the liquidity risk tolerance/limits as detailed in paragraph 14. The risk tolerance should be clearly understood at all levels of management. The Board should also ensure that it understands the nature of the liquidity risk of the bank including liquidity risk profile of all branches, subsidiaries and associates (both domestic and overseas), periodically reviews information necessary to maintain this understanding, establishes executive-level lines of authority and responsibility for managing the bank’s liquidity risk, enforces management’s duties to identify, measure, monitor, and manage liquidity risk and formulates/reviews the contingent funding plan.

1. **The Risk Management Committee:**

The Risk Management Committee, which reports to the Board, consisting of Chief Executive Officer (CEO)/Chairman and Managing Director (CMD) and heads of credit, market and operational risk management committee should be responsible for evaluating the overall risks faced by the bank including liquidity risk. The potential interaction of liquidity risk with other risks should also be included in the risks addressed by the risk management committee.

1. **The Asset-Liability Management Committee (ALCO):**

The Asset-Liability Management Committee (ALCO) consisting of the bank’s top management should be responsible for ensuring adherence to the risk tolerance/limits set by the Board as well as implementing the liquidity risk management strategy of the bank in line with bank’s decided risk management objectives and risk tolerance.

1. **The Asset Liability Management (ALM) Support Group:**

The ALM Support Group consisting of operating staff should be responsible for analysing, monitoring and reporting the liquidity risk profile to the ALCO. The group should also prepare forecasts (simulations) showing the effect of various possible changes in market conditions on the bank’s liquidity position and recommend action needed to be taken to maintain the liquidity position/adhere to bank’s internal limits.

1. **Liquidity Risk Management Policy, Strategies and Practices:**

The first step towards liquidity management is to put in place an effective liquidity risk management policy, which inter alia, should spell out the liquidity risk tolerance, funding strategies, prudential limits, system for measuring, assessing and reporting / reviewing liquidity, framework for stress testing, liquidity planning under alternative scenarios/formal contingent funding plan, nature and frequency of management reporting, periodical review of assumptions used in liquidity projection, etc. The policy should also address liquidity separately for individual currencies, legal entities like subsidiaries, joint ventures and associates, and business lines, when appropriate and material, and should place limits on transfer of liquidity keeping in view the regulatory, legal and operational constraints.

The BoD or its delegated committee of board members should oversee the establishment and approval of policies, strategies and procedures to manage liquidity risk, and review them at least annually.

* 1. **Liquidity Risk Tolerance:**

Banks should have an explicit liquidity risk tolerance set by the Board of Directors. The risk tolerance should define the level of liquidity risk that the bank is willing to assume, and should reflect the bank’s financial condition and funding capacity. The tolerance should ensure that the bank manages its liquidity in normal times in such a way that it is able to withstand a prolonged period of, both institution specific and market wide stress events. The risk tolerance articulation by a bank should be explicit, comprehensive and appropriate as per its complexity, business mix, liquidity risk profile and systemic significance. They may also be subject to sensitivity analysis. The risk tolerance could be specified by way of fixing the tolerance levels for various maturities under flow approach depending upon the bank’s liquidity risk profile as also for various ratios under stock approach. Risk tolerance may also be expressed in terms of minimum survival horizons (without Central Bank or Government intervention) under a range of severe but plausible stress scenarios, chosen to reflect the particular vulnerabilities of the bank. The key assumptions may be subject to a periodic review by the Board.

* 1. **Strategy for Managing Liquidity Risk:**

The strategy for managing liquidity risk should be appropriate for the nature, scale and complexity of a bank’s activities. In formulating the strategy, banks/banking groups should take into consideration its legal structures, key business lines, the breadth and diversity of markets, products, jurisdictions in which they operate and home and host country regulatory requirements, etc. Strategies should identify primary sources of funding for meeting daily operating cash outflows, as well as expected and unexpected cash flow fluctuations.

1. **Management of Liquidity Risk:**

A bank should have a sound process for identifying, measuring, monitoring and mitigating liquidity risk as enumerated below:

**8.1 Identification:**

A bank should define and identify the liquidity risk to which it is exposed for each major on and off-balance sheet position, including the effect of embedded options and other contingent exposures that may affect the bank’s sources and uses of funds and for all currencies in which a bank is active.

* 1. **Measurement of Liquidity Risk:**

There are two simple ways of measuring liquidity; one is the stock approach and the other, 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 of 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.

1. **Ratios in respect of Liquidity Risk Management:**

Certain critical ratios in respect of liquidity risk management and their significance for banks are given below**.** Banks may monitor these ratios by putting in place an internally defined limit approved by the Board for these ratios. The industry averages for these ratios are given for information of banks. They may fix their own limits, based on their liquidity risk management capabilities, experience and profile. The stock ratios are meant for monitoring the liquidity risk at the solo bank level. Banks may also apply these ratios for monitoring liquidity risk in major currencies, viz. US Dollar, Pound Sterling, Euro and Japanese Yen at the solo bank level.

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| **Sl. No.** | **Ratio** | **Significance** | **Industry Average  (in %)** |
| **1.** | **(Volatile liabilities – Temporary Assets) /(Earning Assets – Temporary Assets)** | Measures the extent to which volatile money supports bank’s basic earning assets. Since the numerator represents short-term, interest sensitive funds, a high and positive number implies some risk of illiquidity. | 40 |
| **2.** | **Core deposits/Total Assets** | Measures the extent to which assets are funded through stable deposit base. | 50 |
| **3.** | **(Loans + mandatory SLR + mandatory CRR + Fixed Assets)/Total Assets** | Loans including mandatory cash reserves and statutory liquidity investments are least liquid and hence a high ratio signifies the degree of ‘illiquidity’ embedded in the balance sheet. | 80 |
| **4.** | **(Loans + mandatory SLR + mandatory CRR + Fixed Assets) / Core Deposits** | Measure the extent to which illiquid assets are financed out of core deposits. | 150 |
| **5.** | **Temporary Assets/Total Assets** | Measures the extent of available liquid assets. A higher ratio could impinge on the asset utilisation of banking system in terms of opportunity cost of holding liquidity. | 40 |
| **6.** | **Temporary Assets/ Volatile Liabilities** | Measures the cover of liquid investments relative to volatile liabilities. A ratio of less than 1 indicates the possibility of a liquidity problem. | 60 |
| **7.** | **Volatile Liabilities/Total Assets** | Measures the extent to which volatile liabilities fund the balance sheet. | 60 |

**Volatile Liabilities:** (Deposits + borrowings and bills payable up to 1 year). Letters of credit – full outstanding. Component-wise CCF of other contingent credit and commitments. Swap funds (buy/ sell) up to one year. Current deposits (CA) and Savings deposits (SA) i.e. (CASA) deposits reported by the banks as payable within one year (as reported in structural liquidity statement) are included under volatile liabilities. Borrowings include from RBI, call, other institutions and refinance.

**Temporary assets =**Cash + Excess CRR balances with RBI + Balances with banks + Bills purchased/discounted up to 1 year + Investments up to one year + Swap funds (sell/ buy) up to one year.

**Earning Assets =** Total assets – (Fixed assets + Balances in current accounts with other banks + Other assets excluding leasing + Intangible assets)

**Core deposits** = All deposits (including CASA) above 1 year (as reported in structural liquidity statement)+ net worth

The above stock ratios are only illustrative and banks could also use other measures / ratios. For example to identify unstable liabilities and liquid asset coverage ratios banks may include ratios of wholesale funding to total liabilities, potentially volatile retail (e.g. high cost or out of market) deposits to total deposits, and other liability dependency measures, such as short term borrowings

1. **Stress Testing:**

Stress testing should form an integral part of the overall governance and liquidity risk management culture in banks. A bank should conduct stress tests on a regular basis for a variety of short term and protracted bank specific and market wide stress scenarios (individually and in combination). In designing liquidity stress scenarios, the nature of the bank’s business, activities and vulnerabilities should be taken into consideration so that the scenarios incorporate the major funding and market liquidity risks to which the bank is exposed. These include risks associated with its business activities, products (including complex financial instruments and off-balance sheet items) and funding sources. The defined scenarios should allow the bank to evaluate the potential adverse impact these factors can have on its liquidity position. While historical events may serve as a guide, a bank’s judgment also plays an important role in the design of stress tests.

Stress tests outcomes should be used to identify and quantify sources of potential liquidity strain and to analyse possible impacts on the bank’s cash flows, liquidity position, profitability and solvency. The results of stress tests should be discussed thoroughly by ALCO. Remedial or mitigating actions should be identified and taken to limit the bank’s exposures, to build up a liquidity cushion and to adjust the liquidity profile to fit the risk tolerance. The results should also play a key role in shaping the bank’s contingent funding planning and in determining the strategy and tactics to deal with events of liquidity stress.

The stress test results and the action taken should be documented by banks and made available to the Reserve Bank / Inspecting Officers as and when required. If the stress test results indicate any vulnerability, these should be reported to the Board and a plan of action charted out immediately. The Department of Banking Supervision, Central Office, Reserve Bank of India should also be kept informed immediately in such cases.

1. **Contingency Funding Plan:**

A bank should formulate a contingency funding plan (CFP) for responding to severe disruptions which might affect the bank’s ability to fund some or all of its activities in a timely manner and at a reasonable cost. CFPs should prepare the bank to manage a range of scenarios of severe liquidity stress that include both bank specific and market-wide stress and should be commensurate with a bank’s complexity, risk profile, scope of operations. *Contingency plans should contain details of available / potential contingency funding sources and the amount / estimated amount which can be drawn from these sources, clear escalation / prioritisation procedures detailing when and how each of the actions can and should be activated and the lead time needed to tap additional funds from each of the contingency sources.*

Contingency plans must be tested regularly to ensure their effectiveness and operational feasibility and should be reviewed by the Board at least on an annual basis.

1. **Overseas Operations of the Indian Banks’ Branches and Subsidiaries****and Branches of Foreign banks in India:**

A bank’s liquidity policy and procedures should also provide detailed procedures and guidelines for their overseas branches/subsidiaries to manage their operational liquidity on an ongoing basis. Similarly, foreign banks operating in India should also be self reliant with respect to liquidity maintenance and management.

1. **BROAD NORMS IN RESPECT OF LIQUIDITY MANAGEMENT:**

Some of the broad norms in respect of liquidity management are as follows:

1. Banks should not normally assume voluntary risk exposures extending beyond a period of ten years.
2. Banks should endeavour to broaden their base of long- term resources and funding capabilities consistent with their long term assets and commitments.
3. The limits on maturity mismatches shall be established within the following tolerance levels: (a) long term resources should not fall below 70% of long term assets; and (b) long and medium term resources together should not fall below 80% of the long and medium term assets. These controls should be undertaken currency-wise, and in respect of all such currencies which individually constitute 10% or more of a bank’s consolidated overseas balance sheet. Netting of inter-currency positions and maturity gaps is not allowed. For the purpose of these limits, short term, medium term and long term are defined as under:

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| Short-term: | those maturing within 6 months |
| Medium-term: | those maturing in 6 months and longer but within 3 years |
| Long-term: | those maturing in 3 years and longer |

1. The monitoring system should be centralised in the International Division (ID) of the bank for controlling the mismatch in asset-liability structure of the overseas sector on a consolidated basis, currency-wise. The ID of each bank may review the structural maturity mismatch position at quarterly intervals and submit the review/s to the top management of the bank.
2. **Liquidity Across Currencies**

Banks should have a measurement, monitoring and control system for liquidity positions in the major currencies in which they are active. For assessing the liquidity mismatch in foreign currencies, as far as domestic operations are concerned, banks are required to prepare Maturity and Position (MAP) statements according to the extant instructions. A bank should also undertake separate analysis of its strategy for each major currency individually by taking into account the outcome of stress testing.

1. **Management Information System (MIS)**

A bank should have a reliable MIS designed to provide timely and forward-looking information on the liquidity position of the bank and the Group to the Board and ALCO, both under normal and stress situations. The MIS should cover liquidity positions in all currencies in which the bank conducts its business – both on a subsidiary / branch basis (in all countries in which the bank is active) and on an aggregate group basis. It should capture all sources of liquidity risk, including contingent risks and those arising from new activities, and have the ability to furnish more granular and time sensitive information during stress events.

Liquidity risk reports should provide sufficient detail to enable management to assess the sensitivity of the bank to changes in market conditions, its own financial performance, and other important risk factors. It may include cash flow projections, cash flow gaps, asset and funding concentrations, critical assumptions used in cash flow projections, funding availability, compliance to various regulatory and internal limits on liquidity risk management, results of stress tests, key early warning or risk indicators, status of contingent funding sources, or collateral usage, etc.

1. **Reporting to the Reserve Bank of India**

Banks are required to submit the liquidity return, as per the prescribed format to the Chief General Manager-in-Charge, Department of Banking Supervision, Reserve Bank of India, Central Office, World Trade Centre, Mumbai.

1. **Internal Controls**

A bank should have appropriate internal controls, systems and procedures to ensure adherence to liquidity risk management policies and procedure as also adequacy of liquidity risk management functioning.

Management should ensure that an independent party regularly reviews and evaluates the various components of the bank’s liquidity risk management process. These reviews should assess the extent to which the bank’s liquidity risk management complies with the regulatory/supervisory instructions as well as its own policy. The independent review process should report key issues requiring immediate attention, including instances of non compliance to various guidance/limits for prompt corrective action consistent with the Board approved policy.

**Basel III Framework on Liquidity Standards – Liquidity Coverage Ratio (LCR), Liquidity Risk Monitoring Tools and LCR Disclosure Standards**

**Liquidity Coverage Ratio**

1. **Introduction:**

With the objective of promoting a more resilient banking sector, the ‘Basel III International framework for liquidity risk measurement, standards and monitoring’was issued in December 2010. The Basel Committee prescribed two minimum standards viz. Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) for funding liquidity to achieve two separate but complementary objectives.

While the LCR promotes short-term resilience of banks to potential liquidity disruptions by ensuring that they have sufficient high quality liquid assets (HQLAs) to survive an acute stress scenario lasting for 30 days, the NSFR promotes resilience over longer-term time horizons by requiring banks to fund their activities with more stable sources of funding on an ongoing basis. In addition, a set of five monitoring tools to be used for monitoring the liquidity risk exposures of banks was also prescribed in the said document.

**2. Objective:**

The LCR standard aims to ensure that a bank maintains an adequate level of unencumbered HQLAs that can be converted into cash to meet its liquidity needs for a 30 calendar day time horizon under a significantly severe liquidity stress scenario specified by supervisors. At a minimum, the stock of liquid assets should enable the bank to survive until day 30 of the stress scenario, by which time it is assumed that appropriate corrective actions can be taken.

**3**. **Scope:**

To start with, the LCR and monitoring tools would be applicable for Indian banks at whole bank level only i.e. on a stand-alone basis including overseas operations through branches. However, banks should endeavour to move over to meeting the standard at consolidated level also. For foreign banks operating as branches in India, the framework would be applicable on stand- alone basis (i.e. for Indian operations only).

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| **4. Definition of LCR:**  Stock of high quality liquid assets (HQLAs) ≥ 100%  Total net cash outflows over the next 30 calendar days |
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The LCR requirement is binding on banks from January 1, 2015. However, to provide a transition time for banks, Reserve Bank of India has permitted a gradual increase in the ratio starting with a minimum 60% for the calendar year 2015 as per the time-line given below:

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|  | **January 1 2015** | **January 1 2016** | **January 1 2017** | **January 1 2018** | **January 1 2019** |
| **Minimum LCR** | **60%** | **70%** | **80%** | **90%** | **100%** |

Banks should, however, strive to achieve a higher ratio than the minimum prescribed above as an effort towards better liquidity risk management.

With effect from January 1, 2019, i.e. after the phase-in arrangements are complete, the LCR should be minimum 100% (i.e. the stock of HQLA should at least equal total net cash outflows) on an ongoing basis because the stock of unencumbered HQLA is intended to serve as a defence against the potential onset of liquidity stress. During a period of financial stress, however, banks may use their stock of HQLA, and thereby falling below 100%. Banks shall be required to immediately report to RBI (Department of Banking Operations and Development as also Department of Banking Supervision) such use of stock of HQLA along with reasons for such usage and corrective steps initiated to rectify the situation.

The stress scenario specified by the BCBS entails a combined idiosyncratic and market-wide shock that would result in:

a) the run-off of a proportion of retail deposits;

b) a partial loss of unsecured wholesale funding capacity;

c) a partial loss of secured, short-term financing with certain collateral and counterparties;

d) additional contractual outflows that would arise from a downgrade in the bank’s public credit rating by up to three notches, including collateral posting requirements;

e) increases in market volatilities that impact the quality of collateral or potential future exposure of derivative positions and thus require larger collateral haircuts or additional collateral, or lead to other liquidity needs;

f) unscheduled draws on committed but unused credit and liquidity facilities that the bank has provided to its clients; and

g) the potential need for the bank to buy back debt or honour non-contractual obligations in the interest of mitigating reputational risk.

5 **High Quality Liquid Assets:**

5.1 Liquid assets comprise of high quality assets that can be readily sold or used as collateral to obtain funds in a range of stress scenarios. They should be unencumbered i.e. without legal, regulatory or operational impediments. Assets are considered to be high quality liquid assets, if they can be easily and immediately converted into cash at little or no loss of value. The liquidity of an asset depends on the underlying stress scenario, the volume to be monetized and the timeframe considered. Nevertheless, there are certain assets that are more likely to generate funds without incurring large discounts due to fire-sales even in times of stress.

5.2 While the fundamental characteristics of these assets include low credit and market risk; ease and certainty of valuation; low correlation with risky assets and listing on a developed and recognized exchange market, the market related characteristics include active and sizeable market; presence of committed market makers; low market concentration and flight to quality (tendencies to move into these types of assets in a systemic crisis).

5.3 There are two categories of assets which can be included in the stock of HQLAs, viz. Level 1 and Level 2 assets. Level 2 assets are sub-divided into Level 2A and Level 2B assets on the basis of their price-volatility. Assets to be included in each category are those that the bank is holding on the first day of the stress period.

**6. Calculation of LCR:**

As stated in the definition of LCR, it is a ratio of two factors, viz, the Stock of HQLA and the Net Cash Outflows over the next 30 calendar days. Therefore, computation of LCR of a bank will require calculations of the numerator and denominator of the ratio, as detailed in the RBI Circular.

**7. Liquidity Risk Monitoring Tools:**

7.1 In addition to the two liquidity standards, the Basel III framework also prescribes five monitoring tools / metrics for better monitoring a bank's liquidity position. These metrics along with their objective and the prescribed returns are as under:

**(a) Contractual Maturity Mismatch**

The contractual maturity mismatch profile identifies the gaps between the contractual inflows and outflows of liquidity for defined time bands. These maturity gaps indicate how much liquidity a bank would potentially need to raise in each of these time bands if all outflows occurred at the earliest possible date. This metric provides insight into the extent to which the bank relies on maturity transformation under its current contracts.

**(b) Concentration of Funding**

This metric is meant to identify those sources of funding that are of such significance, the withdrawal of which could trigger liquidity problems. The metric thus encourages the diversification of funding sources recommended in the Basel Committee's Sound Principles. This metrics aims to address the funding concentration of banks by monitoring their funding from each significant counterparty, each significant product / instrument and each significant currency.

**(c) Available Unencumbered Assets**

This metric provides supervisors with data on the quantity and key characteristics of banks' available unencumbered assets. These assets have the potential to be used as collateral to raise additional secured funding in secondary markets and / or are eligible at central banks.

**(d) LCR by Significant Currency**

While the LCR standard is required to be met in one single currency, in order to better capture potential currency mismatches, the LCR in each significant currency needs to be monitored.

**(e) Market-related Monitoring Tools**

This includes high frequency market data that can serve as early warning indicators in monitoring potential liquidity difficulties at banks.

**8. Basel III Liquidity Returns:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Name of the Basel III Liquidity Return (BLR)** | **Frequency of submission** | **Time period by which required to be reported** |
| 1. | Statement on Liquidity Coverage Ratio (LCR)-BLR-1 | Monthly | within 15 days |
| 2. | Statement of Funding Concentration - BLR- | Monthly | within 15 days |
| 3. | Statement of Available Unencumbered Assets - BLR-3 | Quarterly | within a month |
| 4. | LCR by Significant Currency - BLR-4 | Monthly | within a month |
| 5. | Statement on Other Information on Liquidity - BLR-5 | Monthly | within 15 days |

**9. LCR Disclosure Standards:**

9.1 Banks are required to disclose information on their LCR in their annual financial statements under Notes to Accounts, starting with the financial year ending March 31, 2015, for which the LCR related information needs to be furnished only for the quarter ending March 31, 2015. However, in subsequent annual financial statements, the disclosure should cover all the four quarters of the relevant financial year.

**10. Net Stable Funding Ratio (NSFR):**

10.1 This ratio aims at promoting medium to long term structure funding of assets and activities of the Banks. BCBS aims to trial this ratio from 2012 and makes it mandatory in January 2018.

RBI released its Draft guidelines on NSFR on May 28, 2015. The objective of NSFR is to ensure that banks maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities. A sustainable funding structure is intended to reduce the probability of erosion of a bank’s liquidity position due to disruptions in its regular sources of funding that would increase the risk of its failure and potentially lead to broader systemic stress. The NFSR limits overreliance on short-term wholesale funding, encourages better assessment of funding risk across all on- and off-balance sheet items, and promotes funding stability. The Reserve Bank proposes to make NFSR applicable to banks in India from January 1, 2018. (Source RBI).

**10.2 Definition of the Standard Net Stable Funding Ratio:**

(Available Stable Funding (ASF))/Required Stable Funding (RSF)) x 100 = Should be 100% or above.