Liquidity Risk Management

“Overview & Practitioner’s Challenges”

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February - 2013
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Agenda

- Risk and Risk Management
- Liquidity Risk Management
- Liquidity Risk Management and Basel Committee
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- Liquidity Gap Analysis
- Stress Testing
- Contingency Funding Plan
- Liquidity Risk Management: Challenges
- Suggested Liquidity Maintenance Measures
- Summary and Conclusions
<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehman Brothers</td>
<td>Failed</td>
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<tr>
<td>Bear Stearns</td>
<td>Taken over</td>
</tr>
<tr>
<td>RBS</td>
<td>Bailout</td>
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<tr>
<td>Lloyds TSB</td>
<td>Bailout</td>
</tr>
<tr>
<td>Citigroup</td>
<td>Bailout</td>
</tr>
<tr>
<td>ATG</td>
<td>Bailout</td>
</tr>
<tr>
<td>Fannie Mae</td>
<td>Bailout</td>
</tr>
<tr>
<td>Freddie Mac</td>
<td>Bailout</td>
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<tr>
<td>Bank of America</td>
<td>Bailout</td>
</tr>
<tr>
<td>Northern Rock</td>
<td>Nationalised</td>
</tr>
<tr>
<td>Bradford &amp; Bingley</td>
<td>Nationalised</td>
</tr>
<tr>
<td>HBOS plc</td>
<td>Taken over</td>
</tr>
<tr>
<td>Merrill Lynch</td>
<td>Taken over</td>
</tr>
<tr>
<td>Alliance Leicester</td>
<td>Taken over</td>
</tr>
</tbody>
</table>

-------- Bombshells--------
Risk and Risk Management

Risk
Is all about “uncertainty”

Risk management refers to a coordinated set of activities and methods that is used to direct an organization and to control the many risks that can affect its ability to achieve objectives.
Liquidity is a bank’s capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at a reasonable cost and without incurring unacceptable losses.

**Risk Type**

**Funding liquidity risk** is the risk that the firm will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm.

**Market liquidity risk** is the risk that a firm cannot easily offset or eliminate a position at the market price because of inadequate market depth or market disruption.
Effective Liquidity Risk Management ensures ‘business as usual’ posture at all times, thereby increasing the ability to withstand an adverse situation

The recent events of financial crisis have made enough impact on the minds of the regulators around the world that the issue of liquidity, more so of ‘funding liquidity’ cannot be taken lightly any more.

It is now a key focus of international and national regulators, especially because ‘a failure of a single institution can have system wide repercussions.’
Liquidity Risk and Basel Committee

Feb 2000: Sound practices for managing liquidity in banking

Sep 2008: Principles for sound liquidity risk management and supervision

Dec 2010: Basel III: International framework for liquidity risk measurement, standards and monitoring

Feb 2008: Liquidity Risk: Management and supervisory challenges

May 2009: Principles for sound stress testing and supervision

Jan 2013: Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools
Liquidity Risk and Basel Committee

Liquidity Coverage Ratio
“LCR”

- Time horizon: 30 days
- Require a minimum of liquid assets to be held in order to weather a severe stress in the short term
- January 1st, 2015

Net Stable Funding Ratio
“NSFR”

- Time horizon: 1 Year
- Require amount of funding that is expected to be stable over a one year time horizon based on liquidity risk factors assigned to assets and off – balance sheet liquidity exposures.
- January 1st, 2018
Liquidity Risk Management - Key Elements

- Capital Management
- Risk Governance
- Stress Testing Framework
- Liquidity Risk Controls (Regulatory & Internal)
- Contingency Funding Plan
- Liquidity Gap Forecast

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Liquidity Gap Analysis

Managing Liquidity Gap

Set Warning Gap limits for deficit positions

Express net cumulative gap within the same time horizon as a % to Total Liabilities

Set Target Gap limits to control mismatches

Distribute cash flows over respective time horizons

Device a framework to achieve mismatches within target gap limits

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Liquidity Gap Analysis -

- **Behavioral analysis** is a very critical component while undertaking liquidity gap analysis, when bucketing cash flows.

- **Behavioral model** tries to substitute contractual maturities with empirical outflows and inflows.

- **A properly tested model** will aid in exploiting the real behavior to achieve a better understanding of liquidity and volatility adjusted for seasonal behavior.
Components of Liquidity Stress Test Framework

Components for Scenario modeling

<table>
<thead>
<tr>
<th>Assets</th>
<th>Type of Risk</th>
<th>Liabilities</th>
<th>Type of Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans &amp; Adv.</td>
<td>Credit Risk</td>
<td>CASA</td>
<td>Funding Risk</td>
</tr>
<tr>
<td>Investments</td>
<td>Credit &amp; Market Risk</td>
<td>Term Deposits</td>
<td>Funding Risk</td>
</tr>
<tr>
<td>Off balance sheet items</td>
<td>Credit &amp; Market Risk</td>
<td>Overdrafts</td>
<td>Funding Risk</td>
</tr>
</tbody>
</table>
A Contingency Funding Plan sets out a firm's strategies for addressing liquidity shortfalls in emergency situations.
Managing a good Contingency Fund Plan (CFP)

- Ensuring to manage moderate liquidity events will prevent extreme events from occurring
- Articulate early warning signals and corresponding action to unrest liquidity concern
- Crisis reporting framework to regulatory authority
- Identification of funding sources
- Incorporating implementable funding strategies
- Consider CFP as an dynamic process to be managed, not a static one time document
- Remember, Central Bank is expecting you to have a CFP in place, ready to access in case of a liquidity crisis

Liquidity crisis

3  Extremee

2  Severe

1  Moderate
Liquidity Risk Management: Key Challenges

1. Proactive approach to liquidity management
2. Embed a liquidity culture within the organization
3. System readiness and investment on technology
4. Maintaining an equilibrium between business and risk (capital allocation for liquidity risk will influence the profit margin)
Liquidity Risk Management: Key Challenges

1. Applying assumptions while creating Liquidity Risk Models
2. Quantifying the impact of negative events (what is worse case?)
3. Evaluating funding sources and designing strategies to address urgent liquidity needs
4. Pressures in meeting the requirements of the new regulatory agenda. There is a danger of ‘being squeezed from all sides’. These regulatory ratios will reduce the yield on banks’ assets and increase the cost of their liabilities.
Suggested Liquidity Maintenance Measures

Cost Impact Ratios

- **Volatile Liabilities/ Total Deposits**: Tracks the share of volatile liabilities in total deposits
- **Purchased Funds/ Total Assets**: Tracks the quantum of high cost funds to create assets
- **Volatile Liabilities/Total Assets**: Tracks the share of assets funded through volatile liabilities

Cash flow impact Ratios

- **Core Customer Deposits/Total Assets**: Tracks the funding nature of the assets
- **Liquid assets/Short term liabilities**: Tracks the availability of assets to meet immediate payment obligations
- **Large Deposits/ Total Deposits**: Tracks the concentration of Advances
- **Large Advances/ Total Advances**: Tracks the concentration of Deposits
- **Commitment Ratio/Total Assets**: Tracks the total of ‘off balance sheet’ commitments to ‘on balance sheet’
Summary and Conclusions

- All are risk managers
- Effects of Liquidity Risk are obvious over shorter period of time
- Board and senior management involvement
- Clear strategy
- Well developed and documented policies and procedures
- Human capital and technology

Thank you
References

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- Contingency Funding Plan presentation by Financial Managers Society: June 2011
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