

Liquidity Risk Management in Financial Services: Strategies for Success

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The unprecedented economic crisis has highlighted the limitations of traditional risk models and “silo’d” approaches to risk management. Liquidity Risk has been identified as a critical tool of risk management by regulatory agencies around the world.

EXECUTIVE SUMMARY

Having survived an unprecedented credit and liquidity crisis, the road to success for global financial institutions will continue to change dramatically. With pressure mounting on governments to take action, continuing strains in the economy, unforgiving trial in the court of public opinion, volatility of markets, and complexity of financial products, institutions face new challenges in recovering financial strength and restoring public confidence. To reaffirm their credibility, the leadership teams of select financial institutions are being tasked to build on the earlier albeit short-sighted stress tests, and address the broader purpose of sustainable performance and stability.

As a result of the financial turmoil in 2008, liquidity risk, historically one of the least scrutinized disciplines in risk management, has come into sharp focus. Mr. Malcolm D Knight, General Manager of the BIS, explained liquidity at the Ninth Annual Risk Management Convention and Exhibition of the Global Association of Risk Professionals, New York, on 26 February 2008 as “the oil that greases the wheels of the financial machine.”

INTRODUCTION

The Basel Committee defines liquidity in the Principles of Sound Liquidity Risk, issued in September 2009, as "the ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses."

Thus, liquidity risk arises from:

- Market liquidity risk – the risk that a firm cannot easily offset or eliminate a position at the market price because of inadequate market depth or market disruption.
- Funding liquidity risk – 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.
- So, liquidity has two components – sources of funds and application of funds.

- Sources of funds can be raised by way of:
 - Scheduled cash inflows from existing asset products
 - Sale of marketable assets
 - Forecast cash inflows on account of growth in the liability products.
- Application of funds can be managed by way of:
 - Scheduled cash outflows existing liability products
 - Purchase of marketable assets
 - Forecast cash outflows on account of growth in the asset products.

This balance gets disturbed due to unanticipated cash flows on account of huge withdrawals from checking accounts or non-payment of installments by corporate or retail borrowers.

IMPORTANCE OF LIQUIDITY RISK IN THE BANKING SECTOR

The recent collapse of several giant financial institutions clearly demonstrated the critical nature of liquidity and foreshadowed the crucial role liquidity risk management now plays with regulators around the globe. The Bank of International Settlements (BIS) is one of the first regulatory bodies to adopt this new and more comprehensive liquidity risk and stress testing regime to protect all institutional stakeholders. In this newer context, and continuing with existing policies and approaches for the on-going supervision of banking institutions the Basel Committee of Banking Supervision (BCBS) has published Principles for Sound Stress Testing Practices and Supervision in May 2009, in addition to those originally published in September 2008. The Financial Services Authority (FSA) has also published policy statement PS09/16, Strengthening Liquidity Standards, which includes feedback on CP08/22 CP09/13 and CP09/14 and formally finalizes the liquidity regulation within the UK.

The FSA opts for a "principle-driven" approach while the BIS has chosen a hybrid "rule-driven" and "principle-driven" approach with detailed clarifications to these principles making it closer to the "directive" approach.

This whitepaper analyzes different components of liquidity risk, identifies challenges in meeting the requirements and proposes a practical approach for meeting these regulatory challenges.

SCOPE

Under the Basel Accord, banks, bank holding companies, parent of a banking group (under applicable national law) or other companies determined to be

appropriate by the entity's national supervisor, must comply with liquidity requirements. The FSA regulation applies to all BIPRU firms (Banks, Building Societies and Investment Firms), including UK banks, building societies and investment firms, and UK branches of certain European Economic Area (EEA) and non-EEA banks.

While the BIS mandates principles to manage liquidity risk at medium and large complex banks, the basic principles have broad applicability to banks of any size, nature and complexity. The FSA follows a similar approach but takes into consideration the cost of implementation by prescribing a step-wise approach based on the size of entity's operations. Smaller mortgage banks and building societies can use a standardized buffer ratio instead of following a comprehensive supervisory review process. Smaller wholesale-only banks and BIPRU investment firms are encouraged to adopt supervisory review process, but can do so in a phased manner.

Even though it is not mandatory for smaller banks to comply with all regulations, both, BIS and FSA, encourage the deployment of sound risk management practices to avoid any future turmoil.

OVERVIEW OF LIQUIDITY RISK REQUIREMENTS

The following diagram depicts a practical approach for managing liquidity risk:

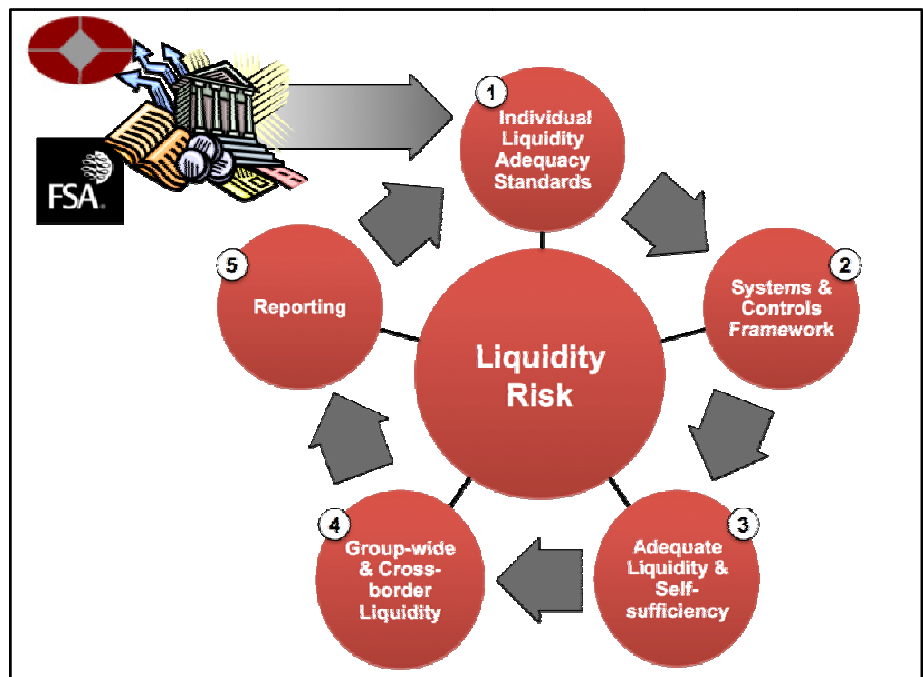


Figure 1 - Major Components of a Practical and Sound Liquidity Risk Approach

As depicted in Figure 1, a sound liquidity risk approach can be broken into five practical components.

Institutions must first take into consideration all regulatory requirements they are subject to (in all obligatory jurisdictions) and contextualize them with their own internal policies, procedures and guidelines. Once this step is accomplished, a framework of systems and controls for quantifying, monitoring and managing liquidity risk can be formed. Once this framework is in place, an institution can achieve adequate liquidity and self-sufficiency measures on a *solo basis*. The fourth component extends liquidity and sufficiency management beyond individual business lines and jurisdictions, to a group-wide, cross-border and consolidated basis with exceptions and waivers also being managed at this point. Finally, all of these components converge in reporting to management and regulators.

1. **Individual Liquidity Adequacy Standards:** the approach begins with the development of institutional standards to define, assess and measure the impact of plausible stress scenarios on liquidity risk. These standards are derived from all required internal and external regulations and guidelines like those presented in Principles 3, 4 and 5 of the BCBS.

This is an extensive requirement and encompasses multiple factors including:

- The evaluation of each significant on and off-balance sheet positions
- The interaction between liquidity risk funding exposures and market liquidity risk
- Accurate valuation of all assets per standard financial reporting and supervisory standards
- The correlation between market conditions and the ability to access funds.
- The use of stress scenarios and the resulting impact on cash flows to ensure that the bank is can successfully operate during both normal and adverse business conditions.

Senior management is held responsible for the specific development and implementation of a liquidity risk management strategy in Principle 3 that includes several specific mandates required for adequate liquidity management:

- The composition and maturity stage of assets and liabilities
- The diversity and stability of funding sources
- The management of liquidity in different currencies, jurisdictions, business lines and legal entities
- The approach to intraday liquidity management

- Clearly defined assumptions on the liquidity and marketability of assets.
2. **Systems and Controls Framework:** this component defines systems and processes for the assessment, identification and quantification of liquidity risk measures and the on-going management of these related risks. As defined in Principle 1 of BCBS, a successful framework will assist the bank in measurement and management of multiple sources of liquidity risk including:
- Pricing liquidity risk
 - Intra-day liquidity risk management
 - Management of collateral position
 - Managing liquidity across legal entity
 - Funding diversification and market access

Regularly scheduled stress testing is another key requirement within this framework. Stressed liquidity gaps must be closely monitored by the bank and be mitigated through a Contingency Funding Plan (CFP).

3. **Adequate Liquidity and Self-sufficiency:** this component ensures that each and every legal entity within an institution is self-reliant and not dependent on any of its group companies to maintain its individual liquidity. This protects the entire institution (as well as individual operating companies) from a cascading effect should any of the group companies collapse. Principle 2 of the BCBS requirements advises institutions to mitigate this risk by setting liquidity risk tolerances and maintaining sufficient liquidity limits. These measures can vary from bank to bank depending upon business objectives, strategic direction and overall risk appetite. Principle 6 requires banks to monitor liquidity risk across legal entities, business lines and currencies. Principles 7 and 11 aim to mitigate risk by establishing a funding strategy that provides effective diversification in the sources and tenure of funding. Principles 8 and 9 talk about managing intra-day liquidity positions and collateral positions respectively. The FSA and BIS emphasize the need for carrying out regular stress tests, with scenarios that are institution specific and market-driven (Principle 10). Stress testing techniques that are holistic in nature and can provide insight within and across all risk disciplines, would provide the best possible insight to senior management. Principle 12 requires banks to maintain a cushion of unencumbered and high quality liquid assets.

This component is quantitative in nature and details the requirements as to how to perform stress testing and analyze liquidity across ten risk drivers.

An institution should consider the following types of stress scenarios:

- Idiosyncratic stress – scenarios which are particular to that bank

- Market-wide stress – scenarios which are generic in nature and apply to all market participants
- Combination of both - scenarios that combine idiosyncratic and market driven shocks to create combinative and holistic "worst case" scenarios

Under these latest principles and guidelines, banks are now clearly mandated to analyze liquidity across various aspects such as:

- Wholesale funding
 - Intra-group liquidity
 - Intra-day liquidity
 - Cross-currency liquidity
 - Retail funding
- Off-balance sheet liquidity
- Franchise-viability risk
- Marketable assets
- Non-marketable assets
- Funding diversification

4. **Group-wide and Cross-border Management of Liquidity:** Institutions must carefully balance Adequate Liquidity and Self-sufficiency standards for their stand-alone entities (as discussed above) when considering and developing their approach to Group-wide and Cross-border Management of Liquidity and corresponding whole-firm liquidity waivers, whole-firm liquidity modifications and intra-group liquidity modifications. This is because solo-basis regulations cannot be imposed on an entity without giving due consideration to the parent company and its' jurisdiction. At the same time, the basic premise behind managing entities on a consolidated basis, which provides for the "free" movement of cash across countries, is less feasible under stressed scenarios. This component requires banks to maintain adequate liquidity so as to meet its obligations in full and on time and discourages banks to depend on any of its associated companies for funding needs. This is in stark contrast to the present regime which requires home state regulator to oversee the overall operations of an entity. The role of host regulator is limited to ensure that the branch holds adequate liquid resources. As per the proposed regulation, a London-based branch of a foreign bank would be squarely governed by the provisions of FSA regulations as applicable in the UK. This implies strong communication channel between all international regulatory bodies.

Assessing adequate liquidity involves the following process:

- Individual liquidity adequacy assessment (ILAA)
- Supervisory liquidity review process (SLRP).

This requirement mandates banks to keep high quality unencumbered assets and thereby achieves self-sufficiency. However, this requirement, unlike other component is not very stringent and gives discretionary power to the FSA for:

- Whole-firm liquidity waiver
- Whole-firm liquidity modification
- Intra-group liquidity modification

This is covered by the BIS in Principle 17, which talks about communication with other supervisors.

5. **Reporting:** This encompasses both, quantitative and qualitative reporting to empower the regulatory bodies with a 360-degree view of liquidity risk – firm-specific, sector-specific and market-wide. Principle 13 provides guidance on public disclosure of information by financial institutions as well as placing significant emphasis on supervisory disclosure. In fact, Principles 14 through 17, specifically define the role of supervisors. Unlike Pillar 1 of the Basel II Accord, this new liquidity regime comprises both, qualitative and quantitative disclosures. The key objectives of this reporting are to:

- Empowers the regulatory bodies to form a "whole-of-market" view of liquidity and not just focus on a single entity;
- Conduct peer comparison and sector analyses
- Collect data for normal and stressed conditions.

The frequencies at which these reports are to be submitted vary from daily, weekly, monthly and ad-hoc depending on the nature of the report

As can be seen from above, the regulations, unlike Pillar 3 of Basel II accord, are inclusive and not exhaustive in nature. In other words, the institutions are free to deploy any policies in addition to the ones prescribed by these regulations.

TIMELINES FOR IMPLEMENTATION

The BIS is expected to finalize the requirements by the end of 2009, whereas the FSA has finalized the regulations and will begin implementation starting next year. The detailed timelines and a table of definitions for each of the components are depicted below:

Figure 2 - Timelines for Liquidity Risk Regulatory Requirements

Component	Effective Timeline
Systems and Controls	These rules will apply in full from December 1, 2009.
Individual Liquidity Adequacy Standards	ILAS will apply in full starting from June 1, 2010 up to November 1, 2010 depending upon the nature of the financial institution. Supervisors will, however, agree upon a timetable with firms for the completion of the Supervisory Liquidity Review Process (SLRP).
Simplified ILAS	It will apply in full starting from June 1, 2010. This will be applicable to smaller firms.
Adequate Liquidity and Self sufficiency	These rules will apply in full starting from June 1, 2010.
Group-wide management of Liquidity	A firm seeking to benefit from an intra-group liquidity modification will need to apply for a waiver/ modification and should receive approval from the FSA.
Reporting	New reporting requirements will come into effect from November 1, 2010.

Table 1 - Timeline Definitions

STRATEGIES FOR MEETING REQUIREMENTS

These requirements place an enormous amount of responsibility on the senior management of a bank to oversee the policies and practices employed. These components hold the senior management accountable for the day-to-day operations of the bank in addition to their strategic, executive-level contributions. Senior executives will find themselves more involved in the operational management of the bank and called upon to use their discretion, when deciding on certain subjective parameters such as materiality, appropriateness of stress scenarios.

Systems and Controls Framework mandates an institution to capture the relevant data across currency, business line and geography. Based on this data, an institution will assess whether the policies and procedures to monitor liquidity risk are satisfactorily thorough. The data can be collected through a questionnaire approach and/or library approach.

This information has to be carefully analyzed to ensure integrity, since qualitative data, being subjective, can, by itself, be misleading. It should be contextualized with supporting quantitative data to gain a comprehensive understanding.

Generally, institutions rely upon email and other means of internal communication during their assessment process. This approach is often difficult to manage, resource intensive, and highly error prone. Such a process also introduces an unnecessary degree of subjectivity as the data entry process is disconnected from the formal assessment checklist. An alternative to such a manual process is to use an application, which captures the required data at the desired granularity and dimensionality. This software can be automated to populate results into assessment templates and then highlight deviations from the prescribed policies through an integrated (preferably) reporting tool.

Individual Liquidity and Adequacy Standards: This quantitative component requires institutions to monitor liquidity risk under normal and stressed scenarios. While computing liquidity gaps under normal conditions is fairly simple, stress scenarios are more complex due to the subjective nature of their definition and that they are also dependent on multiple factors like scale of business operations, business mix and geographies in which an institution is active.

When stress scenarios are manually managed, as is the current norm, this decentralized process results in an inconsistent application of shocks and scenarios across risk disciplines, lines of business and jurisdictions resulting in inaccuracies and inconsistencies. Decentralized and manually managed liquidity stress testing can also become dependent on individual contributors and therefore difficult to maintain and institutionalize.

Institutions should have the capability to centrally define and manage multiple stress scenarios with user-definable parameters and timing across the enterprise.

Having a centralized library of liquidity stress scenarios empowers users to choose realistic or extreme, yet plausible, conditions and to store them for future reference and reuse. Users can then select any combination of these shocks or scenarios and see their combined impact on liquidity gaps. This strategy also ensures that all business lines are consistent in their local analyses. The ability to time-bucket specific limits to automatically monitor liquidity gaps over specific periods of time would provide a pro-actively means of alerting senior management should a limit be exceeded.

A robust approach would enable Contingency Funding Planning so that users are able to define and assess multiple funding strategies so as to bridge the gap between cash inflows and cash outflows. These strategies can be in the form of sale of assets, repurchase of securities, raising new funds or any combination thereof. This may be done in an automated manner by pre-defining counterbalancing strategies or could be manually specified by managers to track prevailing situations. This gives institutions the freedom to arrive at the most amicable funding strategy after assessing the impact of other alternatives.

Reporting - An acceptable solution should be able to store data at specific granularities and for desired historical periods to meet FSA (and other applicable jurisdictional) requirements. It should also provide the capability for business users to easily configure custom reports for internal management and provide the expandability meet future regulatory needs. This reporting mechanism should ideally provide for dashboards, alerts and table based reports delivering qualitative and quantitative information in the required dimensionality.

GET ORGANIZED TO MEET LIQUIDITY RISK REQUIREMENTS

To meet the liquidity risk requirements as stipulated by BIS and FSA on time, institutions should get started now and collate requirements from various departments and identify the desired granularity of data and the historical periods to be covered.

Institutions should consider a best practices approach, which advocates the use of metrics to assess the structure of balance sheet, cash flows, future liquidity positions and off-balance-sheet risks. These metrics should span across both normal and stressed conditions and over various time horizons.

Evolving, and newly defined, regulations will keep banks on their toes as the industry stance on governance continues to advance regulations promising to boost stakeholder confidence in the industry

CONCLUSION

Liquidity risk, which is both idiosyncratic and systemic in nature, has been neglected for quite some time and only recently have regulators come to realize the crucial role played by liquidity risk in the risk landscape of a banking entity and the entire industry. Senior management needs to strike a thoughtful balance between risk and profit appetites. As liquidity risk varies across time, assets and liability segments (including instrument class, industry, geography and jurisdictions); stress testing and the use of scenario techniques will help banks identify gaps in the implementation of their liquidity risk management practices. Though liquidity risk is not new to the banking industry, this pioneering regime to manage and monitor liquidity risk under both "business-as-usual" scenarios and stress scenarios, is.

With the key mandate of this regime being to protect the interests of all institutional stakeholders (including debtors, owners and lenders) by way of close supervision on an ongoing basis, institutions will need to address these requirements at home and around the globe within the prescribed timelines. Banks should expect that regulatory guidelines such as these will continue to evolve and change over time and with local and global market conditions. Furthermore, being a principle-oriented regulation and with most of the provisions in the form of guidance, senior management must now come to the realization that the responsibility of their liquidity judgments will be of far greater significance and consequence than previously seen.



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