

Principles of Liquidity Risk Management Eurobanking 2007

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Agenda

- ◆ Origins and Development of the IIF Report on Liquidity Risk
 - Link: <http://www.iif.com/press/press+25.php>

- ◆ Key Messages

- ◆ Report Highlights
 - Governance
 - Measuring, Monitoring and Controlling Liquidity
 - Stress Testing
 - Contingency Planning

- ◆ Special Topics
 - Considerations for the Official Sector
 - Reliance on Secured Financing Sources
 - The Impact of Complex Financial Instruments upon Liquidity Management Policies and Practices

SECTION 1

Origin and Key Messages of IIF Report

Origins and Development of IIF Report

- ◆ The IIF Special Committee on Liquidity Risk was established to:
 - Develop a perspective on industry practices in liquidity risk measurement
 - Give recommendations on measurement, monitoring, management and governance of liquidity risk at financial institutions

- ◆ Scope of the IIF Report
 - Focus on funding liquidity risk and therefore include structural or long-term liquidity risk, operational liquidity risk and contingency liquidity risk
 - Not in scope: market liquidity risk, intra-day liquidity management

- ◆ Addressees of the IIF Report
 - IIF commercial and investment bank members and other financial firms
 - Central banks, regulators and rating agencies as starting point for dialogue

Key Messages

- ◆ Liquidity risk management (or regulatory) practices need to be tailored to:
 - The business and characteristics of each firm
 - To the markets it participates in, and
 - The way it participates in those markets
- ◆ Each firm must be able to determine its own risk tolerance and the best way to combine the prudent management of risks within its business strategy
 - No simple, convenient and predetermined metrics or quantitative measures with prescribed assumptions can provide adequate liquidity safeguards
 - Reliance should be placed on developing robust internal representations of liquidity positions as well as liquidity risk management policies and procedures

—————→ *There is no one-size-fits-all formula!*

SECTION 2

Report Highlights

Governance and Organizational Structure

- ◆ Highest levels of management should approve the strategy and significant policies and limits related to the management of funding liquidity risk
 - Take specifics of the firm into account
 - Consider both normal and stressed conditions
 - Review and approve policies on a regular (annual) basis

- ◆ Internal governance and controls are key to reducing liquidity risk for each firm, and, ultimately, across firms
 - No formulaic approach can yield appropriate or prudential results across the board
 - Instead adequate disclosure should be in place to support the understanding of the risk management and governance approaches of each firm

Measuring, Monitoring and Controlling Liquidity Risk

- ◆ Each firm should develop and use a variety of measurement and monitoring tools that are relevant to the nature of the business:
 - Estimate funding capacity (secured and unsecured)
 - Asset and funding diversification practices
 - Liquidity positions by maturities and currencies
 - Sets of models and retention rates for all on and off balance sheet items
 - Liquidity value of assets - haircuts for sales or repos, liquidation horizon, securitization

- ◆ Need to continuously review the assumptions to underpin sound judgment

Stress Testing as a Tool for Liquidity Management

- ◆ Stress testing forms a critical part of a firm's liquidity management
 - Tailored carefully to each firm's circumstances
 - Scenarios investigated cover a range of crisis events, durations and levels of severity
 - Market-related stress: emerging markets crisis, country crisis, failure of a clearing or settlement system, systemic shock with disruption in financial markets etc.
 - Firm-specific stress: downgrading (1-4 notches), reputation risk driving deposit withdrawals, internal systems outage, and the default of a major counterparty etc.
- ◆ Benefits of Stress Testing
 - Provides a range of liquidity gaps that could open up in a crisis event
 - Good starting point for defining contingency plans or survival strategies
 - Can provide the cornerstone for a liquidity limit framework

SECTION 2.1

Stress Testing – How does it work in practice?

Stress Testing – How it works in practice...

- ◆ Stress testing calculates the expected cash inflows and outflows for a given scenario under different levels of stress and over a period of time
 - Issue: huge amount of information needed on hypothetical cash flows (amount, timing, currency, entity, region...)
 - Results will largely depend upon the assumptions made to determine the hypothetical cash flows
 - *You will always be wrong, so try to err on the conservative side!*
- ◆ Stress testing yields cumulative liquidity gap/surplus per time bucket
 - Gives an indication of how much liquidity is needed
 - Anticipates when cash outflows exceed cash inflows
 - While the absolute results are referred to - the ***trend over time*** is at least as important as an indicator of future developments

Stress Testing – Objective Input Factors

What does the basic run-off profile look like?

- ◆ Starting point for each scenario is a cumulative cash ladder for all balance sheet items, including:
 - Banking book (non-trading assets/liabilities)
 - Map assets/liabilities according to their contractual maturity
 - Trading book
 - Map assets/liabilities according to their liquidity profile

- ◆ In addition, existing off balance sheet commitments need to be incorporated:
 - Contingent outflows
 - Inflows from liquidity facilities

...and how does it need to be adjusted in a crisis?

Stress Testing – Subjective Input Factors

- ◆ Non-trading assets & liabilities
 - Probability of repayment / ability to roll over?
- ◆ Trading book assets & liabilities
 - Ability to sell or repo / ability to roll over maturing transactions?
 - Estimate liquidation time horizon according to criteria such as asset quality etc.
- ◆ Off-balance sheet exposures
 - Probability of draw-downs of un-drawn committed credit lines sold
 - Additional high-quality collateral requirements for downgrade triggers, OTC derivatives
 - Financial derivative cash flows: material expected vs. uncertain potential (options)
- ◆ Off-balance sheet facilities
 - Ability to raise secured funding
 - Availability of liquidity facilities

Stress Testing - Constraints

- ◆ Results depend heavily on underlying assumptions
 - Assumptions have to be made based on the experience and judgment of market participants and risk managers
 - While there is a need to review these assumptions on a regular basis, changing them too often might be interpreted as manipulation
- ➔ ***Sticking to the same set of assumptions ensures consistent results over time and allows better judgment of how business strategies affect your liquidity stress tests***
- ◆ Comparing the results of similar stress testing models across banks can be misleading
 - The level and timing of cash inflows and outflows may differ quite sharply from one firm to another based on reputation, business model, market presence and how the firm participates in these markets, rating and/or other factors.

SECTION 2.2

Back to IIF Report – Contingency Planning

Contingency Planning

Prepare for liquidity events and limit potential liquidity shortfalls

- ◆ Asset reduction plan and financing strategy for firm-specific and market-related liquidity events
 - Portfolio of high-quality assets to generate immediate liquidity
 - Repos within normal trading levels
 - Sale of easily marketable assets
 - Pay up for inter-bank funding
 - Pay up for additional commercial paper issuance
 - Additional secured funding and asset liquidation against higher haircuts (or premiums)

- ◆ Requirement for other mechanisms
 - Restrict asset creation
 - Securitisation of assets (programs in place, build-up or underwriting phase?)
 - Decision about which businesses to continue to fund

- ◆ Under what conditions might central banks provide funding?
 - Differentiate standing facilities from emergency facilities

SECTION 2.3

Contingency Funding – Closing the Gap

Contingency Funding – Mitigating Factors (I)

Effective liquidity management mitigates the impact of a liquidity crisis

- ◆ Set limits for the going concern in function of:
 - the liquidity gap that can arise during a worst-case scenario (firm-specific crisis)
 - the capacity to generate liquidity under adverse market conditions

→ *Residual funding maturity gaps reflect your tolerance for liquidity risk*
- ◆ Manage and monitor net funding requirements and limits closely
 - Provide regular reporting to senior management
 - Keep in close touch with market participants and escalate limit breaches
- ◆ Maintain liquidity reserve for spikes in demand for cash
 - High-grade collateral can be used for additional funding purposes
 - Place minimum level on liquidity buffer and define quality standards
 - Collateralization is becoming standard practice (MAC, margin calls)

Contingency Funding – Mitigating Factors (II)

- ◆ Diversify funding sources across products, regions, currencies and investors
 - Closely monitor concentrations or dependencies in your funding sources
- ◆ Monitor material adverse clauses such as rating triggers, cross-default
 - Determine the potential liquidity outflows due to having to post net amounts of additional collateral
- ◆ Charge businesses for the use of liquidity
 - Define mechanism that charges businesses for the term-funding of illiquid assets
- ◆ Maintain close dialogue with relevant central banks
 - Arrange standing facilities with host central banks in markets with material activity
 - Under what conditions is emergency liquidity support available?
- ◆ Conduct contingency tests to assess the effectiveness of the contingency plan under a simulated stress situation

SECTION 3

IIF Report - Analytical Discussion

Considerations for the Official Sector - Supervisors

- ◆ Liquidity regulations should be principles-based not rules-based
 - Focus on qualitative risk management guidance rather than prescriptive requirements
- ◆ Home and host supervisors should work together to evaluate a firm's integrated liquidity positions and leverage internal risk reporting for timely information
 - Ensure effective system is in place to measure, monitor and control liquidity risk with an appropriate contingency plan
- ◆ Harmonization of regulations will be necessary
 - Avoid trapped pools of liquidity linked to legal entity reserve requirements
 - Better cooperation of regulators in overseeing funding liquidity of a firms' subsidiaries and branches will lead to more effective management of liquidity risks and reduces systemic liquidity risk
- ◆ Regulatory and economic capital should not be tied to liquidity risk

Considerations for the Official Sector – Central Banks

- ◆ Central banks should seek to harmonize and expand range of collateral accepted, enabling firms to maintain a common collateral pool
 - Globalization requires consistency of liquidity standards across jurisdictions
 - Cross-border collateral arrangements (Sweden, Switzerland, UK, US)
- ◆ Central bank differentiation in access to facilities
 - Types of crisis, severity of crisis, financial stability
- ◆ “Constructive ambiguity” versus “constructive clarity”
 - What types of additional collateral could be pledged under what conditions (haircuts, limits by asset type, delivery requirements)?
 - What criteria does a bank have to fulfill?
 - Crisis communication, coordination of information collection
- ◆ Central banks should participate in contingency planning and periodic testing

Reliance on Secured Financing Sources

During a liquidity crisis, unsecured funding sources dry up.....

- ◆ Liquidity derived from assets (as opposed to incremental liabilities) is the most reliable source of funding in a liquidity event
- ◆ Concentration of collateralized market with small number of players
- ◆ Strong dependence on secured financing in times of crisis
- ◆ Address these concerns through mitigating factors
 - Industry and official sector:
 - Should reduce probabilities of liquidity drying up in secured finance and liquid asset markets
 - Firms:
 - Should evaluate asset liquidity based on normal and stressed conditions
 - Liquidity value only given to unencumbered assets
 - Liquidity demonstrated through active and ongoing sales

...where can funding come from if secured financing also dries up?

Impact of Complex Financial Instruments

- ◆ Growth in the use of Complex Financial Instruments over the past decade requires us to consider how these products affect the liquidity of the firm and should affect its related policies and practices.

- ◆ The analysis provides an insight into how liquidity vulnerabilities may arise, what the drivers are and how to monitor and mitigate the liquidity risks arising.
 - Documentation Risk
 - Liquidity of Assets
 - Total Return Swaps
 - Conduits

Summary (I)

- ◆ Increased complexity demands analytical approaches for measuring, monitoring and controlling liquidity risk
 - Further investment in improving tools and continuous review of assumptions warranted
- ◆ Stress testing results in a range of liquidity gaps for which contingency funding might be required
 - Stress testing can provide the cornerstone for a liquidity limit framework
- ◆ An asset reduction plan and financing strategy for both firm-specific and market-related liquidity events are essential components of contingency planning
 - Ongoing assessment of capacity to generate liquidity is a core management responsibility

Effective liquidity management mitigates the impact of a liquidity crisis

Summary (II)

- ◆ Necessity for continued improvement in preventing future crises and enhancing readiness to respond to them when they do occur
 - A contingency plan should always be in place
- ◆ Crisis coordination amongst central banks is important
 - Globalization has made it easier for a crisis to cross over into another jurisdiction
 - Requirement for consistency of liquidity standards across these jurisdictions
 - Cross-border collateral arrangements
- ◆ Obligation to reduce risk of liquidity drying up in secured finance and liquid asset markets
 - Joint efforts to be made by both the banking/securities industry and the official sector.

Opportunity to direct liquidity risk regulation in the right direction, using IIF report as a starting point!

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