

Risk Management

Funding and Liquidity Risk Management Practices

Executive Summary

In adverse circumstances, whether the result of firm-specific events or systemic credit events, the cost of funding a broker-dealer's operations could become prohibitively expensive; in extreme cases funding could become unavailable. FINRA expects broker-dealers to develop and maintain robust funding and liquidity risk management practices to prepare for adverse circumstances. Further, FINRA expects broker-dealers affiliated with holding companies to undertake these efforts at the broker-dealer level, in addition to their planning at the holding-company level. We are publishing this *Notice* to provide guidance in this effort.

Many of the practices outlined in this *Notice* were identified through FINRA examinations and a survey of 15 mid-sized and large broker-dealers that hold inventory positions and carry customer accounts. This *Notice* does not provide a comprehensive description of all appropriate funding and liquidity risk management practices. Each broker-dealer should determine which practices are best suited to its particular business, whether or not they are mentioned in this *Notice*. While much of the content in this *Notice* is directed to broker-dealers that carry inventory positions, other broker-dealers may also find it to be a valuable resource.

Questions regarding this *Notice* may be directed to:

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- ▶ Guidance

Suggested Routing

- ▶ Finance
- ▶ Internal Audit
- ▶ Legal and Compliance
- ▶ Risk Management Committee
- ▶ Risk Managers
- ▶ Senior Management
- ▶ Treasury

Key Topics

- ▶ Concentration Risk
- ▶ Contingency Funding Plan
- ▶ Funding and Liquidity Risk Management
- ▶ Independent Inventory and Collateral Valuation

Referenced Rules and Notices

- ▶ NTM 99-92
- ▶ SEA 15c3-3

Background and Discussion

The effectiveness of broker-dealer risk management practices is a subject of longstanding regulatory interest.¹ The recent financial crisis has provided many important lessons for risk managers.² One lesson, and the primary theme of this *Notice*, is that broker-dealers need to develop and monitor funding and liquidity risk management programs that take into consideration a broad range of adverse circumstances, including extraordinary credit events. The first days of a crisis may be the most critical; therefore, broker-dealers must prepare for distressed credit markets before a crisis hits.

Sound Practices for Funding and Liquidity Risk Management

FINRA expects broker-dealers to regularly assess their funding and liquidity risk management practices to maximize the likelihood that they can continue to operate under adverse circumstances, whether the result of broker-dealer-specific events or systemic credit events. Broker-dealers affiliated with holding companies are expected to conduct this analysis and develop contingency funding plans at the broker-dealer level, in addition to their planning at the holding-company level. Assessing funding and liquidity risks at the broker-dealer level enables the governing boards and senior management of broker-dealers to measure, monitor and control for risks unique to the broker-dealer. Further, this level of analysis can help broker-dealers plan for the challenges they would face should access to funding from affiliated entities become limited or even unavailable.

The following practices can help broker-dealers prepare for various market scenarios, such as loss of funding sources, unanticipated deteriorations of asset quality, contagion across markets and future earnings volatility that could affect their liquidity positions and ability to fund operations. This *Notice* does not provide an exhaustive description of all appropriate funding and liquidity risk management practices. Each broker-dealer should consider the practices that are best suited to its operations, whether or not they are mentioned in this *Notice*.

Risk Limits and Reporting

The governing board and senior management of a broker-dealer should be fully informed on the firm's risk management policies and procedures, and should participate in setting and periodically re-evaluating the level of funding and liquidity risk the organization is willing to accept to meet its business goals. Senior management should ensure that these determinations are communicated throughout the organization so that management in the various business lines can set appropriate funding and liquidity risk limits and evaluate existing risks presented by various markets and counterparties.³

It is equally important for broker-dealers to maintain robust systems that timely capture funding and liquidity exposure across all of their business lines. The scope and frequency of the information analyzed by broker-dealers should occur as necessary given an organization's size, complexity and the presence of red flags discussed below. It is critical that broker-dealers have escalation procedures to report instances where pre-established funding and liquidity limits are exceeded to the appropriate level of management, including provisions for determining when such breaches should be immediately reported to senior management. The appropriate broker-dealer staff (*e.g.*, treasury) also should consider reviewing with senior management on a regular basis formal risk reports—both quantitative and qualitative—that summarize key measures of funding and liquidity, such as:

- the amount of excess liquidity currently available;
- future cash-flow projections based on multiple scenarios, including under stressed conditions;
- the maturity profile of available funding sources;
- liquidation and mark-down assumptions for inventory positions, including those based on mark-to-model values;
- price volatility and correlation trends with respect to certain asset classes;
- inventory concentrations in related asset classes;
- the usage and limits of secured and unsecured lines of credit;
- how existing risk levels compare with pre-established risk limits;
- the level of funding through particular markets and position concentrations for certain counterparties; and
- the ability to timely monetize assets that have been set aside in an excess liquidity pool.

Independent Risk Oversight

Broker-dealers are encouraged to use staff that is independent of business lines to ensure that the firm does not exceed the levels of risk tolerance set by the governing board and senior management. The staff may perform such functions as analyzing exposure across business lines, monitoring for early warning signs concerning potential funding and liquidity problems, evaluating pricing decisions, performing stress tests, and maintaining and regularly updating contingency funding plans. Regardless of whether the staff works in departments dedicated to risk management functions or in other departments independent of business lines, firms should ensure that the staff has sufficient resources and authority.

Further, many broker-dealer funding and liquidity risk management programs are supported by committees that include senior managers who oversee key functions such as trading desks, treasury operations, credit risk, market risk and collateral management. These committees can help evaluate risk across business lines at the broker-dealer and ensure that relevant information is appropriately shared. Broker-dealers are encouraged to periodically review the charters and mission statements for these committees to ensure that they reflect prevailing market developments and organizational structures.

Maturity Profile of Funding Sources

Over reliance on shorter-term funding to finance longer-term assets was a significant factor in the severe difficulties faced by some financial firms during the credit crisis. Broker-dealers that use shorter-term financing to fund longer-term positions should regularly assess their ability to continue operating under a variety of market conditions and firm-specific events. Some broker-dealers that use shorter-term funding to finance longer-term assets have determined that they should reduce their exposure to the very short-term credit market. These broker-dealers are diversifying funding sources and laddering the maturity profile of liabilities. Broker-dealers should consider the following steps in order to match-fund holding periods:

- extend maturity terms beyond overnight for repurchase agreement (repo) positions or other short-term funding sources;⁴ and
- establish irrevocable lines of credit or other supplementary sources of short-term funding.

Greater reliance on shorter-term financing to fund longer-term assets elevates the significance of funding and liquidity risk indicators, such as the level of excess liquidity, inventory quality and holding periods, inventory and counterparty concentration exposure, costs of funding and projected cash-flows.

Red Flags of Potential Funding and Liquidity Problems

Many broker-dealers have programs designed to monitor for early warning signs of potential funding and liquidity problems. Red flags should trigger management to take immediate action or perform additional monitoring. Broker-dealers should consider the following red flags:

- significant increases in the cost of funding operations, including those that are firm specific and those based on changes in the interest rate environment;
- unexpected increases in exposure to certain asset classes, markets and counterparties;

- elevated costs of holding particular asset classes;
- sudden difficulty in entering into longer-term funding arrangements;
- significant increases in the proportion of the broker-dealer's longer-term assets funded through shorter-term markets, such as the overnight repo market;
- downgrades or announcements of potential downgrades of the credit ratings assigned to the public debt of the broker-dealer or its parent;
- downgrades or announcements of potential downgrades of the credit ratings assigned to collateral pledged by the broker-dealer;
- negative publicity or rumors targeted at the broker-dealer or parent that could reduce its perceived credit worthiness;
- widening spreads in the credit default swap market that suggest concerns about the credit worthiness of the broker-dealer or its parent;
- significantly widened credit spreads for the public debt of the broker-dealer or its parent;
- significant decline in earnings or projected earnings for the broker-dealer or its parent;
- increases in demands for funding by affiliates, as this may negatively affect the parent's ability to fund the broker-dealer;
- cancellation of external funding sources and non-renewal of maturing debt (*e.g.*, uncommitted repo or revolving credit facilities);
- imposition of increased collateral requirements and wider haircuts by counterparties, carrying broker-dealers⁵ and clearing organizations;
- excessive reliance on customer assets (cash and securities held in margin accounts) to help fund operations;
- significant reductions in the market value of certain asset classes held in inventory;
- breaches of pre-established risk limits;
- difficulty in timely monetizing the broker-dealer's assets in an excess liquidity pool;
- significant decline in the amount of excess liquidity available;
- unexpected demands for cash arising from contingent liabilities (*e.g.*, pending lawsuit);
- notable increases in collateral disputes with counterparties;
- assets returning to the balance sheet from customers with explicit or implicit puts that require immediate unanticipated funding; and
- deterioration in the financial condition of the broker-dealer or its parent that may trigger loan covenants or other credit events.

Inventory Valuation

Strong practices for identifying the true liquidation value of inventory holdings are essential for an effective funding and liquidity management program. The recent financial crisis highlighted the value of using staff that is technically competent and independent from the lines of business to evaluate pricing decisions, and empowering them to challenge pricing assumptions. Additionally, broker-dealers should consider using controls to ensure that:

- they value securities and derivative instruments daily based on current fair values;
- each business line correctly and consistently categorize assets;
- they use consistent prices across business lines, so that each security has only one price across the broker-dealer's inventory positions, reverse repo, repo and customer collateral;
- re-evaluate valuation methodologies periodically (with greater frequency in rapidly changing market conditions) and when realized results have deviated from results that were expected based on the firm's methodologies; and
- inputs and resources used in verifying prices are well-documented and independent from the trader.

It is important that material deviations from expected results be reviewed with senior management for all product lines. Materiality thresholds for bringing discrepancies to the attention of senior management should be reasonable and agreed to by internal and external auditors. Senior management also should be informed of modeling assumptions used to value securities held in inventory, particularly less liquid products. Broker-dealers are encouraged to establish procedures for senior management to formally approve price modeling assumptions. Further, broker-dealers are encouraged to develop policies and procedures for determining the circumstances under which they share pricing information with the governing board.

Stress Testing

An effective stress-testing program can help a broker-dealer identify and quantify sources of potential liquidity strains and analyze effects on its cash-flows, profitability and solvency. Accordingly, broker-dealers should consider performing stress tests on a regular basis that contemplate firm-specific and market-wide events, for varying time horizons (*e.g.*, one day, one month, one year), and varying levels of liquidity duress (*e.g.*, moderate, high and severe). The test results can help a broker-dealer assess whether it has sufficient excess liquidity in the form of unencumbered and highly marketable securities to meet possible funding shortfalls without the need to sell less

liquid assets at fire-sale prices or depend on additional funding from credit-sensitive markets. Broker-dealers should consider including the impact of the following in their stress testing programs:

- significant increases in the cost of funding operations, including those that are firm-specific and those based on broad credit market conditions;
- significant increases in the exposure to certain asset classes, markets and counterparties;
- significant erosion in inventory value resulting from a contagion across multiple asset classes or a change in the interest rate environment;
- loss of partial or complete access to particular funding sources or ability to finance particular asset classes;
- withdrawal of customer assets (cash and securities held in cash and margin accounts) that the broker-dealer uses to finance operations;
- sudden reductions in the market value of collateral, including those that could lead a counterparty, clearing broker-dealer and clearing organization to demand additional collateral or the broker-dealer to liquidate positions at fire-sale prices;
- reduction in the value of assets held in an excess liquidity pool;
- off-balance sheet assets (*e.g.*, securitized loans) coming back on to the balance sheet;
- unexpected demands for cash arising from contingent liabilities (*e.g.*, pending lawsuit);
- significant declines in earnings or projected earnings of the broker-dealer or parent;
- deterioration in the financial condition of the broker-dealer or parent that may trigger loan covenants or other credit event;
- increased demands for funding by affiliates, as this may affect the parent's ability to fund the broker-dealer;
- rating downgrade of the broker-dealer, its parent or collateral pledged by the broker-dealer; and
- negative publicity or rumors about the broker-dealer or parent that could make it more difficult to obtain funding.

The results of stress testing should be reviewed with senior management. Broker-dealers are encouraged to establish procedures for senior management to formally sign-off on the test results. Additionally, the test results may provide useful information for updating contingency funding plans.

Contingency Funding Plan

In a credit crisis, management may have little time to react and few options available to access funding and generate liquidity. A contingency funding plan can help a broker-dealer prepare for such situations and assist in its efforts to prudently and efficiently manage extraordinary fluctuations in liquidity. Accordingly, the governing boards and senior management of broker-dealers should consider maintaining and regularly updating contingency funding plans to:

- clarify responsibilities and decision-making authority, so that all personnel understand their role during a potential credit crunch;
- match sources of funds with contractual and potential obligations;
- list contingency funding sources and identify when they should be employed;
- identify business restrictions and reductions that may be employed to counteract a strain on liquidity, such as reducing certain trading positions, limiting or reducing margin loans, calling for additional margin or collateral from customers or other measures that may be needed to manage liquidity risks; and
- identify the various operational conditions that could affect access to back-up credit lines, such as credit rating triggers or loan covenants (*e.g.*, leverage ratios) and outline plans in the event of loss of such funding sources.

Broker-dealers are encouraged to establish procedures for senior management and governing boards to formally sign off on the contingency funding plans.

Use of Customer Assets

Under Exchange Act Rule 15c3-3, a carrying broker-dealer must calculate what amount, if any, it must deposit on behalf of customers in its reserve bank account for the exclusive benefit of customers (reserve bank account), according to the prescribed formula (reserve formula). Generally, under the reserve formula, a carrying broker-dealer must determine the amount of cash it owes to its customers and the amount of funds generated through the hypothecation of customer securities (*i.e.*, credits), and compare this amount to any amounts its customers owe it (*i.e.*, debits). If customer credits exceed customer debits, a carrying broker-dealer must deposit the net amount in its reserve bank account. Under Rule 15c3-3, this computation must be made weekly, for those firms that carry customer funds exceeding \$1 million, as of the close of the last business day of the week, and the deposit must be made no later than the second business day following the computation.

Carrying broker-dealers are cautioned that taking advantage of the fact that the reserve formula is only required to be computed weekly by using customer assets (cash and securities held in margin accounts) in the interim period to help fund operations can create unacceptable risks. Excessive reliance on this approach may be an indication of funding and liquidity stress. Carrying broker-dealers are encouraged to:

- establish and enforce limits on the use of customer cash and the hypothecation of customer securities; and
- consider developing contingency plans to prepare for possible customer withdrawal of assets, particularly at an accelerated rate.⁶

Conclusion

FINRA urges broker-dealers to take a proactive approach to reviewing and improving their funding and liquidity risk management practices. We recognize that the appropriateness of particular policies and procedures will vary depending on a broker-dealer's size and structure, and are publishing the above sound practices as a tool for firms to draw upon. FINRA notes that even the most elaborate procedures will not be effective unless they are rigorously followed.

Endnotes

- 1 In 1999, in response to changes in the industry and breakdowns in some risk management programs, the Securities and Exchange Commission, New York Stock Exchange and NASD issued the *Broker-Dealer Risk Management Practices Joint Statement* that emphasized the importance of maintaining an appropriate risk management system. See *NASD Notice to Members 99-92*.
- 2 Regulators and industry groups have published several reports that describe the lessons for risk managers from the recent financial crisis. Among these is a report issued by the Senior Supervisors Group (SSG) on October 21, 2009, entitled *Risk Management Lessons from the Global Banking Crisis of 2008*. The SSG is a forum composed of regulators, including the

Securities and Exchange Commission, the Federal Reserve System and the Office of the Comptroller of the Currency.

Further, in response to concerns about the infrastructure of the tri-party repurchase agreement (repo) market, a major source of funding for some broker-dealers, the Federal Reserve Bank of New York (FRBNY) asked market participants in the fall of 2009 to review and make recommendations regarding opportunities for improvement to the tri-party repurchase infrastructure. The Task Force on Tri-Party Repo Infrastructure was subsequently formed, and on May 17, 2010, the FRBNY published for comment the Task Force on Tri-Party Repo Infrastructure's recommendations and its initial response to them. Although

Endnotes

- the Task Force focused on eliminating to the greatest extent possible clearing banks' extensions of intraday credit (a significant risk to the tri-party market), the Task Force discussed other important issues, such as the importance of effective funding and liquidity risk management.
- In addition, in April (and revised in May) 2010, the FRBNY also published a staff report entitled *Repo Runs* that highlights risks related to short-term funding through the repo market, including the possibility that the failure of a large dealer could prompt the liquidation of large amounts of assets and create fire-sale conditions.
- Other reports that provide guidance to institutions on risk management practices in response to the recent financial crisis include *Observations on Risk Management Practices during the Recent Market Turbulence* (SSG, March 6, 2008); *Containing Systemic Risk: The Road to Reform* (Counterparty Risk Management Policy Group III, August 6, 2008); *Final Report of the IIF Committee on Market Best Practices: Principles of Conduct and Best Practice Recommendations* (Institute of International Finance, July 2008); *Financial Risk Outlook 2010* (Financial Services Authority).
- 3 While it may be appropriate for senior management to delegate certain funding and liquidity risk functions to others in the organization, senior management nevertheless retains ultimate responsibility for the broker-dealer's funding and liquidity risk management issues. Accordingly, senior management should take reasonable and appropriate action to ensure that functions are properly delegated and executed.
 - 4 A repo is economically similar to a secured loan, whereby a borrower surrenders securities for a cash loan generally at a fixed rate of interest. In a repo, the borrower agrees to sell immediately the securities to the lender, and the borrower agrees to buy back the same securities from the lender at a fixed price and date. Most repo transactions mature on a daily basis although some are for longer periods. A reverse repo is the same transaction, but from the lender's perspective.
 - 5 Many introducing broker-dealers rely on their carrying broker-dealer as the primary source of funding to facilitate customer and proprietary trading. Carrying broker-dealers may obtain such funding through bank credit lines or the repo and securities lending markets.
 - 6 In March 2008, Bear Stearns' prime brokerage customers became concerned about the firm's ability to meet its obligations. These customers transferred their accounts to competitors perceived to be of higher credit quality and, in the process, withdrew substantial amounts of customer credit balances within the course of one week.