

Liquidity Risk

Guidance on Liquidity Risk Management Practices

Executive Summary

Effective liquidity management is a critical control function at broker-dealers and across firms in the financial sector. Failure to manage liquidity has contributed to both individual firm failures and, when widespread, systemic crises. From an investor protection perspective, sound liquidity risk management practices enhance investor protection because they make it more likely that a firm's customers continue to have prompt access to their assets, even in times of stress.

FINRA is providing guidance on effective practices that senior management and risk managers at firms should consider and implement. This *Notice* is directed to firms that hold inventory positions or clear and carry customer transactions. Other types of broker-dealers may also find this *Notice* is of value to them when assessing their own liquidity risks.

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Background

The primary role of liquidity-risk management is ensuring the availability of cash or highly liquid assets to support a financial institution's funding needs under both normal and stressed conditions. To do so, a financial institution needs a rigorous prospective assessment of its sources of funds to meet obligations, the amounts it will need when a stress occurs, the behavior characteristics of funding sources, and the limitations that funding sources may have or to which they may become subject.

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Notice Type

- ▶ Guidance

Suggested Routing

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

Key Topics

- ▶ Financial Stress Tests
- ▶ Liquidity Risk Management Practices

Referenced Rules & Notices

- ▶ NTM 99-92
- ▶ Regulatory Notice 99-92
- ▶ Regulatory Notice 10-44
- ▶ Regulatory Notice 10-57

Beginning in March 2014 and continuing into the first quarter of 2015, FINRA conducted a review of the policies and practices at 43 firms related to managing liquidity needs in a stressed environment. The review had two broad purposes: to understand better firms' liquidity risk-management practices and to raise awareness of the need for liquidity stress planning. The review included assessing firm management's knowledge and understanding of the liquidity risks that their firm faced, the firm's ability to measure liquidity needs in stress situations, management's preparedness and plans for addressing such a scenario should it arise, and the specific steps the firm would take to address its needs.

The firms reviewed comprised a wide range of clearing firms and large introducing firms with varying levels of capitalization. The business mix at these firms also varied, from firms that focused on one or two market sectors to firms that provide a full range of products and services. A number of the firms were affiliated with banks, including firms affiliated with non-U.S. banks. In some instances, the banking business was an adjunct to the broker-dealer business and in other instances the banking business was the primary business of the holding company group. Of the 43 participating firms, 28 were part of a bank holding company group¹ (11 U.S. bank holding company (BHC) or financial holding company groups, and 17 non-U.S. groups). Of the U.S. firms, nine were associated with BHCs that had greater than \$50 billion of total consolidated assets, and two were affiliated with BHCs that had from \$10 billion to \$50 billion in total consolidated assets.

The review consisted of two phases. The first phase required firms to calculate the impact on liquidity when five stresses were applied concurrently to the broker-dealer's business. The second phase allowed a firm to challenge the severity of the assumptions used in the test, describe mitigating action the firm would take and demonstrate the resources available to offset the stressed outflows of cash.

The results of our review of the 43 firms for effective and ineffective practices in meeting stressed outflows of funds are described in the Results section below. Planning for adverse liquidity conditions based upon stress tests is one way to protect against failure when extreme events occur. The practices described in this *Notice* are intended to inform senior management and risk managers at firms of steps that they should consider and implement.

In general, each broker-dealer should review its liquidity condition under possible stress events and determine which liquidity management practices are best suited to its particular business. Similar to *Regulatory Notice 10-57*, this *Notice* is directed to firms that hold inventory positions or clear and carry customer transactions. Other types of broker-dealers may also find this *Notice* is of value to them when assessing their own liquidity risks.

Financial Responsibility Rules

A fundamental purpose of the SEC's financial responsibility rules is to assure that broker-dealers have sufficient liquidity to conduct their business or to liquidate it without losses to customers. As part of a firm's obligation to supervise the businesses in which it engages, FINRA expects each firm to regularly assess its funding and liquidity risk management practices so that it can continue to operate under adverse circumstances, whether these result from an idiosyncratic or a systemic event. Sound liquidity risk management practices enhance investor protection because a firm's customers are more likely to continue to have prompt access to their assets.

Twice in the past, FINRA has issued *Notices* addressing liquidity practices. *Notice to Members 99-92* reported on the results of a multi-year effort by examination staffs of the NASD, NYSE and SEC assessing broker-dealer risk management practices. This report set forth general risk management practices that were found to be sound, as well as describing shortcomings at certain firms.

Regulatory Notice 10-57 outlined a number of steps that firms should consider in managing liquidity and funding risks. In addition to criteria for immediate escalation to senior management, the *Notice* noted 10 areas where appropriate broker-dealer staff (*e.g.*, treasury) 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.

Overview of the Stress Test and FINRA's Stress Criteria

FINRA's current review had two phases. First, each participating firm computed a stress test for a 30-calendar-day period using specific stress criteria. These criteria were selected based, in part, upon our review and analysis of a number of broker-dealers whose businesses had failed during the past 30 years.

The Phase 1 baseline stress test assumed limited or no mitigating action could be taken, so that the result in extreme stress could be observed. The test also assumed that the firm would fulfill all of its contractual obligations as would its counterparties. We believe that these assumptions reflect what may occur in a real idiosyncratic stress situation.

During Phase 2 of the stress test FINRA met with each participating firm to discuss baseline stress results. If any liquidity shortfall resulted during the 30-day period tested during Phase 1, the firm was given the opportunity to identify any mitigating action that it expected to take to ameliorate the shortfall. Phase 2 also involved a discussion of contingent funding sources that a firm expected to be available to offset any stressed outflows, including commitments and contingencies from affiliates and other lenders. A firm that is part of a holding company group, as many of the firms are, was expected to conduct this analysis

and have contingency funding plans at the broker-dealer level.² Planning at the broker-dealer level supplements the corporate group's 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 risks that relate specifically to the broker-dealer.³ 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 unavailable.

The five specific concurrent stresses in the Phase 1 review are described below. In performing the required computations, the firm was asked to include a daily analysis for the first 10 consecutive business days, and a weekly analysis for the remainder of the 30-day stress period.

- 1. Funding Inventory Positions.** The firm was to assume a 100 percent loss of all money market funds as counterparties for funding and a 100 percent loss of funding for collateral other than Treasury securities, agency pass-through securities and agency debentures (immediately for open or demand transactions, at maturity for term financing). In addition, the firm was to assume 10 percent loss of available funding from all counterparties with Treasury, agency pass-through and agency debentures collateral. Further, for all inventory positions consisting of Treasury, Agency Pass-Through and Agency Debentures the firm was to assume haircuts of 3 percent, 7 percent and 9 percent, respectively, as each funding transaction rolled over.
- 2. Stressing of Financing for Mismatched Financing Transactions.** For other financing transactions, generally those that involved a matched book in repo/reverse repo or stock borrow/loan, the firm was to make the same assumptions with respect to the collateral securing the side in which it was receiving funding as it was to make with respect to funding inventory positions. Just as in the first stress criteria, the firm was to assume fulfillment of the contractual terms of each transaction and apply the stress as funding transactions matured.
- 3. Operational Drains.** To address daily operational items that can cause liquidity drains, the firm was to stress clearing deposits with clearing banks, central counterparties (CCPs) and clearing organizations. Specifically, the firm was to assume a doubling of all clearing deposits, whether client or firm related, on Day 1. In addition, it was to assume no release of net settlement amounts from clearing banks, CCPs or clearing organizations for the first 10 business days.
- 4. Funding Customer Withdrawals.** The firm was to assume customers would withdraw free credit balances at the rate of 5 percent each day for the first 10 business days.
- 5. Losses from Forced Deleveraging and Reserves Against Trading Losses.** Firms were to reasonably assess loss estimations against potential trading losses for each day of the stress analysis. (For example, sales of inventory at a discount.)

Evaluation Methodology

At the conclusion of both phases of the stress test, FINRA evaluated the liquidity risk management practices of each of the participating firms based on four different criteria. The criteria and basis for evaluation and effective and ineffective practices for managing liquidity stress are described below.

The areas of evaluation and factors we considered under each phase were:

1. **Management and line staff understanding of the issues that can reasonably be expected to arise in such events.** We evaluated whether the firm's management considered the issues that would go into planning, whether they had analyzed the differences between operating in normal times and in times of stress, and understood how different these situations can be. We also evaluated management's familiarity with risk mitigating strategies based on the firm's business mix.
2. **Measuring risk.** We reviewed a firm's capability to make the necessary computations required in Phase 1 and, to the extent a firm proposed mitigating techniques, to accurately compute the effects and incorporate them into the results of the stress test.
3. **Plan for responding to an idiosyncratic stress events.** We reviewed whether a firm had a written liquidity plan, a governance process for determining when to implement the plan, the operational processes needed to carry out its plan, and the firm's testing of those processes. We also evaluated the comprehensiveness of the plan in relation to its business lines and resources.
4. **Effectiveness of a firm's contingent funding plan.** We reviewed a firm's plans for funding its inventory, particularly fixed income inventory, including its ability to absorb increases in haircut requirements for repurchase transactions. We also compared FINRA's suggested stress haircuts on collateral to those firms used in their liquidity stress planning. We reviewed whether firms had loan facilities and liquidity pools that could be drawn on to meet funding needs as they arose during the test, which included whether the terms under which the loan facilities and liquidity pools could be accessed were properly understood by the firm and whether the amount of such liquidity sources were commensurate with the firm's business and the attendant risks. If applicable to a particular firm, we evaluated the firm's plans and capacity to obtain liquidity to meet customer withdrawals by accessing the funds in its Special Reserve Account for the Exclusive Benefit of Customers. We also reviewed the firm's plans to reduce inventory through outright sale.

Observations Regarding Effective and Ineffective Practices

1. **Management's and line staff's understanding of the issues that can reasonably be expected to arise in such events.**
 - a. We observed a number of firms that had a sound planning process in place and others that had not planned for erosion of funding or counterparties not conducting business as usual. Understanding that counterparties would not continue to conduct business as usual during a stress period is a critical attribute of a firm's plans and mitigating actions. Counterparties in times of stress could discontinue funding or require greater collateral haircuts. It is not acceptable planning for a stress environment to assume counterparties will conduct business as usual.
 - b. Designating a group to ensure that systems and reports are available for use by responsible personnel to understand and manage the firm's funding and liquidity process is part of a well-developed plan.
 - c. A firm's new product approval process that included an assessment of liquidity risk introduced by each new product under normal and stress scenarios is an effective practice. Including liquidity risk in this process is critical for any firm that provides to its customers or to the market new products, be they exchange-traded or otherwise.
2. **Measuring Risk.**
 - a. An important baseline practice for a firm's planning for stress scenarios is for it to be able to anticipate and measure cash outflows under particular stress scenarios. Doing so, and having reports that enable management to consider the impact of stresses, are essential tools to developing an appropriate contingent funding plan.
 - b. We observed that many of the firms participating in this stress test were able to do so and had staff and systems that could perform the necessary computations. Other firms required some guidance before they could perform the computations, but with that guidance were able to do so. A few firms were simply unable to perform the necessary computations. Generally, these firms did not have a formal plan for addressing liquidity stress.
3. **Plans for responding to an idiosyncratic stress event.**
 - a. A realistic assessment of the effects of potential shocks is essential to effective liquidity risk management. Conducting regular stress tests that are appropriate considering the business, services and products in which a firm operates contributes to achieving this realistic assessment of liquidity risks.
 - b. The stress scenarios used by a firm should be based on severe stresses that the firm could face or that have arisen in the past for firms in similar businesses. Firms also should conduct ongoing reviews of the stress scenarios that are part of the

firm's own risk management process. Doing so increases the likelihood that a firm's current business mix and observed market events, both recent and historical, are properly contemplated in those stress scenarios (*e.g.*, growth of a product line, taking on a new correspondent, or contemplating other events, such as the October 2014 fixed income Flash Crash, the events of 2008, currency devaluations or governmental defaults).

- c. Having a governance process around stress test results and use of contingency funding plans is part of a well-developed plan. We observed plans that had clear criteria for when results should be escalated and discussed with senior management and with appropriate management committees or board committees, or indeed the full board of the firm. We also observed a number of firms that did not have a clear process for escalation.
 - d. Establishing clear criteria for when a firm should shift from "business as usual" to contingent funding mode is critical to successfully executing the plan.
- 4. Committed loan facilities and access to a committed liquidity pool.**
- a. A well-developed contingent funding plan should include a committed facility dedicated exclusively to the firm. We observed firms that relied on committed unsecured loan facilities. A majority of these loan facilities were from an affiliate or parent. Often loan facilities with parents or affiliates were not dedicated to a specific entity in a corporate group. Firms should ensure that a committed facility is not committed to multiple affiliates to ensure that funding is available when and if needed.
 - b. Third-party lending facilities that have terms and conditions that make the availability of funding unlikely should be appropriately discounted or excluded. Most third-party lending facilities we observed had extensive restrictions on borrowing in adverse conditions. Restrictive covenants and material adverse changes clauses make these facilities significantly less likely to be available in an idiosyncratic stress event and firms should be careful not to place undue reliance on such facilities. We also found instances where firms were relying on uncommitted facilities, which have little value in a stress environment.
 - c. Some firms had multiple committed funding sources both for repo/secured financing and for unsecured financing. We also observed instances where a firm was reliant on a single material funding source.
 - d. A well-prepared treasurer's office or financial office will have its loan documents readily available so that necessary forms and certifications can be quickly provided to meet preconditions for advances of funds.

5. Responding to customer withdrawals of funds.

- a. Many firms indicated they expected to and could perform a daily computation of their customer reserve fund requirement.⁴ Among the participants in the test, several indicated that in a stress environment they would do a daily computation and had trained staff and tested their systems so that they are prepared to perform daily reserve computations. We also observed firms that included performing daily computations in their mitigation plans, but had not done the preparation necessary to assure that the process would work. For example, these firms had not identified which employees would be involved in the process, had not tested the ability to run the reports necessary for the computation, and had not identified which manual computations it ordinarily performs weekly that it would have to perform on a daily basis.

6. Funding firm inventory.

- a. Having reasonable assumptions regarding the haircuts that counterparties are likely to require in stress scenarios, especially on less liquid collateral, is necessary to ensure the effectiveness of a firm's contingent funding plan. When firms evaluated the availability of secured financing based on securities collateral, there was a wide range of haircuts used. This was particularly the case with respect to DTCC eligible equity securities. Reliance on secured funding without adjusting for increased haircut levels has proven to be unreliable at times of stress. The range of haircuts on high-quality-liquid assets appeared reasonable at most firms. However, many of the firms' assumptions around less liquid collateral were too optimistic to be used for a stressed situation's collateral haircut. Examples from the table below demonstrate this optimism, such as 5 percent or 10 percent haircuts on municipal bonds; 25 percent haircuts on high yield corporate bonds; and 2-13 percent for equities. The table below shows data regarding the haircuts we set for the test and those firms used in their own testing.

Haircuts by Asset Class								
	U. S. Treasury Bills, Notes and Bonds	Agency and GSE asset backed pass-through securities	Agency and GSE Debentures	Investment grade corporate bonds rated A & Above	Corporate bonds rated BBB	Listed Equities	Municipal Bonds	High Yield Corporate Bonds
FINRA	3%	7%	9%	100%	100%	100%	100%	100%
AVG	3%	6%	6%	12%	21%	15%	12%	95.7%
Median	3%	6%	6%	12%	19%	13%	10%	100%
High	5%	10%	10%	100%	100%	100%	100%	100%
Low	1%	2%	2%	5%	5%	2%	5%	25%

- b. Comprehending the potential effects of the FICC's GCF facility's capacity limit on a firm's liquidity funding plans is important to the effectiveness of that plan. Many firms indicated that they would rely to a much greater extent on FICC's GCF repo facility for "general collateral." While under normal conditions the GCF facility is a useful tool for funding inventory that meets the GCF standard, under the terms of FICC's rules and agreements with participants a firm's GCF capacity is limited to 140 percent of the firm's trailing one month average outstanding usage. Comprehending the effect of this limit in the firm's liquidity funding plans is important to the effectiveness of the plan. Otherwise, over-reliance on the GCF or any other facility with limits to access undrawn funding capacity will fail to produce the anticipated liquidity.
 - c. Diverse sources of funding in the repo market can be a significant risk mitigation method.
- 7. Plans for liquidating firm inventory.**
- a. The vast majority of firms stated that they intended to promptly and significantly reduce inventory in liquidity stress positions. A majority of the firms participating in the test indicated they would liquidate government securities positions first. Otherwise, many firms indicated that, they would choose to liquidate positions where a bid was available rather than by the collateral type.
 - b. Many firms stratified their inventory into specific groupings based upon the anticipated market for securities in the grouping, *e.g.*, highly rated corporate debt or highly rated municipal debt and listed equities with market depth.
 - c. While reducing inventory is helpful in raising liquidity, it does not resolve the problem that less liquid securities may need to be marked down substantially in order to sell quickly.
 - d. A few firms developed a cushion for losses as part of their liquidity risk management. FINRA strongly believes that firms should incorporate this step in their stress planning and calculations. Without appropriate haircuts, firms may cling to positions that are draining liquidity in order to avoid losses when in fact consideration should be given to selling less liquid securities as well as more marketable positions.

Results

We evaluated each of the participating firms' capacity and readiness in the areas described under evaluation methodology. We also reviewed and evaluated firms upon the numerical outcomes of the stress test before and after applying the firm's proposed mitigants. With respect to the Understanding, Measurement, Planning and Contingent Funding evaluation criteria, we rated the firms as either well prepared, adequately prepared or insufficiently prepared. With respect to four specific mitigants that many firms indicated they would use, we rated the firms as either sufficiently prepared or insufficiently prepared (or N/A, if the mitigant was not applicable).

Of the 43 participants, staff considered the large majority, 37, of the firms participating as having sufficient resources, staff and liquidity plans to be likely to surmount the stress scenario posed. A firm was considered to be sufficiently prepared for significant liquidity stress if it was also able to demonstrate sufficient liquidity throughout the 30 days covered during the test.

A small number of smaller firms did not demonstrate convincingly their preparedness to surmount the stress scenario for 30 days. These six firms could not demonstrate sufficient knowledge and understanding of the impact of the stressors on its business, or could not survive 30 days without running out of liquidity. It is FINRA's belief that of these six firms,⁵ three have subsequently improved their liquidity plans such that they now appear likely to withstand the stress scenario. We continue to work with the remaining firms as they develop their plans and mitigating strategies. While each of these three firms generally remains in compliance with the net capital and other financial responsibility rules, they continue to be subject to financial and operational surveillance in accordance with criteria described in *Regulatory Notice 10-44*.

Our evaluation of these areas is summarized in the tables below.

Characteristic Evaluated			
	Well Prepared	Adequately Prepared	Insufficiently Prepared
Understanding	22	15	6
Measuring	17	16	10
Planning	16	21	6
Contingent Funding Plan	10	27	6

Mitigant			
	Number of Firms Sufficiently Prepared	Number of Firms Insufficiently Prepared	Factor Not Applicable
Committed loan facilities and access to a liquidity pool	37	4	2
Responding to customer withdrawal of funds	15	9	19
Funding firm inventory	23	10	10
Plans for Liquidating Inventory	43	—	—

Conclusion

The test was intended to serve as a tool to understand the preparedness at firms to employ effective practices so that they could withstand significant idiosyncratic stresses. As part of the review we expected to observe practices that we considered effective for addressing stresses and to assist firms in understanding areas in their own preparation and planning that had weaknesses so their management could address those areas. Firms that implement liquidity risk metrics should ensure that conservative and appropriately difficult assumptions are used in designing the risk measurement and management systems. Failure to do so could well cause the risk management framework to fail in a real liquidity crisis.

Based on this review, FINRA expects that each firm would:

- ▶ rigorously evaluate its liquidity needs related to both market wide stress and idiosyncratic stresses;
- ▶ devote sufficient resources to measuring risks applicable to its business and report the results of measurement to senior management,
 - ▶ This would include a review for what those risks might be based on historical events that have affected the firm or other firms, and
 - ▶ Thinking about stresses that could occur but have not yet been observed,
- ▶ develop contingency plans for addressing those risks so that the firm will have sufficient liquidity to operate after the stress occurs while continuing to protect all customer assets;
- ▶ conduct stress tests and other reviews to evaluate the effectiveness of the contingency plans; and
- ▶ have a training plan for its staff and have tested processes on which it intends to rely if such stresses occur.

As a result of the many benefits that accrued to the firms participating in this review, FINRA intends to review firm liquidity risk planning and will use stress tests with various designs from time to time in the future, either with a group of firms or as part of the examination of individual firms where appropriate. We strongly encourage all firms to conduct a self-assessment of their businesses and incorporate firm wide liquidity stress testing into their risk and business planning.

Endnotes

1. Fifteen firms were not affiliated with BHCs although several were part of groups that had non-deposit taking trust companies and one was affiliated with a bank but not via a BHC.
2. Bank supervisory agencies routinely conduct stress tests of banks and their holding companies. In the United States these are mandated by the regulations adopted pursuant to the Dodd-Frank Act, 12 CFR part 252, subparts E and F. Recently, the Board of Governors of the Federal Reserve System released "Dodd-Frank Act Stress Test 2015: Supervisory Stress Test Methodology and Results March 2015." The European Banking Authority also conducts stress tests. *See, e.g.*, EBA publishes 2014 EU-wide stress test results. Similarly, the Bank of Japan evaluates funding liquidity risk as part of its semi-annual Financial System Report.
3. The Securities and Exchange Commission has proposed that ANC broker-dealers and nonbank securities based swap dealers approved to use internal models be subject to liquidity risk management requirements. Exchange Act Release No. 34-68071. An ANC broker-dealer is one that is permitted to use the alternative internal model-based method for computing net capital.
4. None of the firms in the review currently do the reserve computation on a daily basis.
5. The six that were insufficiently prepared are not among our 50 largest firms as measured by net capital and none are part of a bank holding company group.