

The Latest Fallacy About Money Market Funds

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I. THE LATEST FALLACY

A number of falsehoods have emerged during the past two years concerning money market funds (“MMFs”) and their role in the financial system. This paper examines the latest fallacy and explains why it is false.¹

A. “MMFs Threaten the Lending Ability of Banks”

The latest fallacy about MMFs claims that MMFs can cut off the supply of funds to the banking system and thereby imperil the ability of banks to provide loans to the economy. Therefore, supporters of this fallacy argue, MMFs are a source of systemic risk and should be subject to structural changes to ensure that they provide a continuous supply of credit to the banking system, even during times of financial stress and market instability.

Proponents of the fallacy have said that MMFs have the capacity to “bring down” the financial system by creating “systemic funding difficulties” for large banks. The fallacy is premised on the following claims:

“[L]arge banks depend on MMFs for short-term funding.”

MMFs are “a critical source of short-term, wholesale funding for large, global banks.”

“MMFs shareholders can pull their funds on demand, and have done so en masse when risk is amplified. This in turn creates systemic funding difficulties for large banks that rely on MMFs for their funding.”

“[P]rime MMFs essentially collect funds from individuals and firms to provide financing to large banks, which in turn use the proceeds to buy securities and make loans.”

Institutional investors in MMFs “threaten the ability of MMFs to fund the activities of the banking sector.”²

¹ Other fallacies regarding MMFs allege that they are susceptible to runs, a source of systemic risk, and “shadow banks.” I refute these other fallacies in my papers entitled “Shooting the Messenger: The Fed and Money Market Funds,” “How to Reduce the Risk of Runs on Money Market Funds,” and “Money Market Funds, Systemic Risk, and the Dodd-Frank Act,” all available at www.ssrn.com and the SEC’s website at <http://www.sec.gov/comments/4-619/4-619.shtml>.

² Testimony of David S. Scharfstein, Professor of Finance, Harvard Business School and member of the Squam Lake Group, before the Senate Committee on Banking, Housing, and Urban

One proponent of the fallacy has asserted that we currently are in the middle of a credit crisis caused by the refusal of MMFs to lend to banks other than on a short-term basis:

The notion that the financial crisis is over is a very happy fantasy. We are in the middle of a crisis and MMFs have played a role in it with their withdrawal of support from European banks. We are in a crisis because a headwind that the economy is facing is precisely that MMFs are unwilling to lend to banks or any other financial firm except on short-term so of course that's going to limit the ability of the banks to extend loans themselves. So one of the elements of the headwind that the economy has is the unwillingness of short-term depositors in banks, wholesale depositors in banks to extend credit on other than a short-term basis and that is because of the inability of MMFs to bear any risk of loss.³

These ominous claims and forebodings have little basis in reality. They overlook key facts regarding the multitude of diverse sources of funding and liquidity available to banks. They ignore federal regulations making it impossible for MMFs to act as a source of guaranteed finance for the banking system. They disregard complex economic, regulatory and other factors influencing credit availability.

The latest MMF fallacy has been promoted in testimony and submissions to Congress and the Securities and Exchange Commission primarily by a group of academic economists. Interestingly, almost all of these academics have ties with the Fed.⁴ The academic proponents of the fallacy have used it as a rationale to advance a proposal they have propounded to impose a capital buffer requirement on MMFs. The capital buffer concept has been discredited elsewhere as impractical, ineffective, and inappropriate for MMFs.⁵ This paper explains why the rationale for the capital buffer concept is misguided and wrong.

Affairs, June 21, 2012. See also Squam Lake Group, "SEC Beware, Money Funds Can Bring System Down," April 18, 2012, Bloomberg, available at <http://www.bloomberg.com/news/2012-04-18/sec-beware-money-funds-can-bring-system-down.html>.

³ Remarks by Jeffrey N. Gordon, at American Enterprise Institute symposium entitled "Do Money Market Funds Create Systemic Risk?" June 28, 2012.

⁴ Some of these economists have banded together in what they call the "Squam Lake Group." Their ranks include former and current Federal Reserve governors, staff members, visiting scholars, academic advisory board members, and paid consultants who receive or have received not only compensation from the Fed but valuable credentials.

⁵ See, e.g., Investment Company Institute, "The Implications of Capital Buffer Proposals for Money Market Funds," May 16, 2012.

II. WHY IT'S A FALLACY

The view that MMFs threaten the ability of banks to make loans to the economy reflects unawareness of the regulatory limits under which MMFs operate as well as the way that banking organizations fund their activities and manage their liquidity risk. Banks do not rely on MMFs as a primary source of funding for loans because they have ample other funding sources and because MMFs are not structured for that role.

A. MMFs Are Permitted to Invest Only in Short-Term High Quality Instruments, Not Bank Loans

MMFs are not designed to serve as a primary source of funds for bank loans nor are they able to do so under regulations governing their operations under the Investment Company Act of 1940 and Rule 2a-7 of the Securities and Exchange Commission ("SEC") thereunder. MMFs are permitted to invest only in high quality short-term financial instruments that pose no more than minimal credit risk. They also are required to maintain a weighted average portfolio maturity of 60 days or less and are subject to strict liquidity standards under which they must be able to liquidate 10 percent of their assets within one day and 30 percent of their assets within five business days. These requirements make them unsuitable as a major source of funding for bank loans, which have maturities of as long as 30 years.

Moreover, unlike banks, MMFs are unleveraged. They may acquire only \$1.00 of assets for every \$1.00 of shareholder capital. In contrast, banks are highly leveraged and hold roughly \$10.00 in assets for every \$1.00 of shareholder capital.

Accordingly, MMFs by their very nature are incapable of serving as a major source of funding for bank loans to support the economy. It would be an unsafe and unsound banking practice for banks to depend on MMFs as a source of funding for loans. Banks in fact do not rely on MMFs as a primary source of funding for loans.

B. Banks Rely on Deposits, Not MMFs, To Make Loans

Banks fund their lending activities primarily with deposits. No entities are permitted to take deposits in the United States other than banks.⁶ FDIC insurance enables banks to attract deposits and assures them an inexpensive, stable source of funding. As of March 31, 2012, FDIC insured banks held \$10.3 trillion in

⁶ See 12 U.S.C. § 378(a).

deposits.⁷ They had \$7.4 trillion in loans outstanding,⁸ leaving ample room for additional loans.

Banks are awash in deposits at present because Congress in the Dodd-Frank Act increased the amount of deposit insurance from \$100,000 to \$250,000 per depositor and authorized unlimited deposit insurance for noninterest bearing checking accounts until the end of this year. Loan demand currently is slack due to weakness in the economy and because banking regulators have tightened the credit underwriting standards for loans. Indeed, some banks have so many excess deposits that they are using them to engage in derivatives trading activities for their own account rather than putting them to use in loans to support economic growth.⁹

MMFs are permitted to invest in certificates of deposit, but may do so only if the issuing bank meets the credit quality standards of SEC Rule 2a-7. Few U.S. banks meet those standards at present. Consequently, MMFs hold only a small amount of certificates of deposit of U.S. banks, as one can see by viewing the portfolio holdings of MMFs, which are available on MMF web sites. As of year-end 2011, prime MMFs held approximately \$350 billion in bank certificates of deposit, most of which were issued by highly rated foreign banks.¹⁰ In any case, that amount represents a small percentage of the total deposits in domestic and foreign banks. It is farfetched to say that U.S. banks are dependent on MMFs to supply deposits for their lending activity.

C. Banks Have Access to Other Sources of Funding and Liquidity

Despite deposit having insurance, some banks are unable to maintain sufficient deposits to meet their loan demand and must rely on alternative sources for funding. Competition for deposits has intensified in recent years with the repeal of Regulation Q interest rate limits, removal of interstate banking restrictions, and innovations in electronic money transfer technology. These developments have made depositors more sensitive to variations in interest rates

⁷ Source: FDIC Quarterly Report, Table III-A, First Quarter, 2012.

⁸ *Id.* By way of comparison, assets in prime MMFs currently total approximately \$1.4 trillion.

⁹ JPMorgan Chase bank, for example, held approximately \$1.1 trillion in deposits and \$700 billion in loans as of March 31, 2012—roughly half a trillion dollars in excess deposits. JPMorgan used these excess deposits to invest in derivatives trading activities for its own account. Testimony of Jamie Dimon, Chairman and CEO of JPMorgan Chase & Co. before the Senate Committee on Banking, Housing and Urban Affairs, June 13, 2012.

¹⁰ See Investment Company Institute, Investment Company Fact Book 2012, Table 44. MMFs are a source of dollar-denominated deposits for foreign banks, which also have access to such deposits through other means, including central bank dollar swap arrangements.

and risk factors at individual banks, and better able to optimize the placement of their deposits.

Accordingly, banking regulators now require banks to anticipate fluctuations in their deposit base and to maintain alternative sources of funding and liquidity in the event of abnormal deposit outflows. The OCC has described a variety of alternative sources of funding and liquidity available to national banks:

Structural changes in banks' deposit bases have prompted banks to take advantage of improved access to wholesale and market-based funding sources. Examples of alternative funding sources include federal funds lines, repurchase agreements (repos), correspondent bank lines, Federal Home Loan Bank (FHLB) advances, Internet deposits, deposit-sharing arrangements, and brokered deposits.¹¹

The FDIC similarly has described alternative sources of funding and liquidity for state banks:

[M]any insured depository institutions have experienced difficulty attracting core deposits and are increasingly looking to wholesale funding sources to satisfy funding and liability management needs. Wholesale funding sources include, but are not limited to, Federal funds, public funds, Federal Home Loan Bank advances, the Federal Reserve's primary credit program, foreign deposits, brokered deposits, and deposits obtained through the Internet or CD listing services.¹²

These alternative funding sources are available both as a source of funding for loans and for liquidity purposes.

None of the alternative sources of funding and liquidity described by the OCC or FDIC include MMFs. Although MMFs do engage in repurchase agreement transactions ("repos") with banks, such transactions are fully collateralized by U.S. government securities owned by the banks that can be liquidated as a source of funds. With access to alternative funding sources to supplement their insured deposits, banks have little need to rely on MMFs to supply funding for loans. Banks are not dependent on MMFs to meet their funding needs.

¹¹ Office of the Comptroller of the Currency, Comptroller's Handbook: Liquidity (June 2012) at 4-6.

¹² Federal Deposit Insurance Corporation, Risk Management Manual of Examination Policies, Section 6.1, Liquidity and Funds Management.

D. MMFs Purchase Commercial Paper Issued by Bank Holding Companies for Their *Nonbanking* Activities

MMFs are large purchasers of commercial paper.¹³ Commercial paper accounted for approximately 25 percent of the portfolio holdings of prime MMFs at year-end 2011, or roughly \$350 million.¹⁴ A review of MMF portfolio holdings disclosed on MMF websites shows that much of this commercial paper was issued by finance companies and foreign banks.

Some of the commercial paper held by MMFs is issued by U.S. bank holding companies. Bank holding companies are companies that own banks.¹⁵ Federal law prohibits them from taking deposits and limits their use of deposits from their subsidiary banks. Consequently, they fund their activities by issuing equity and debt, including commercial paper. The amount of commercial paper issued by bank holding companies and held by MMFs is a small percentage of the funding available to these companies from other sources, as can be seen in their public company filings with the SEC.

Bank holding companies generally do not use the proceeds of the commercial paper they issue to fund bank loans. Rather, they use such proceeds to fund the *nonbanking* activities of their *nonbank* subsidiaries, not their banks. Such nonbank subsidiaries include companies engaged in a wide range of nonbanking activities, such as securities brokerage, underwriting and dealing, leasing, mortgage finance, commercial finance, commodities trading, trade finance, data processing, insurance, and other activities. Large bank holding companies have hundreds—indeed thousands—of nonbank subsidiaries. Unlike banks, these nonbank subsidiaries do not take deposits, are not FDIC insured, and do not have access to the Fed’s discount window. Federal law restricts the use of bank deposits to fund these nonbank affiliates.¹⁶

¹³ According to Federal Reserve data, outstanding domestic and foreign commercial paper totaled \$972.5 billion as of July 4, 2012. Of this amount, \$484 million was financial commercial paper and \$311 million was asset-backed commercial paper. Source: Federal Reserve Board, Commercial Rates and Outstanding, seasonally adjusted, <http://www.federalreserve.gov/releases/cp/>.

¹⁴ Source: Investment Company Institute, Investment Company Fact Book 2012, Table 44.

¹⁵ Over 90 percent of banking assets in the U.S. banking system is held by banks owned by bank holding companies. Banks exist as distinct entities separate and apart from their parent holding companies, but typically are managed and operated on an integrated basis with the parent and its subsidiaries.

¹⁶ For example, a bank may not extend loans to a nonbank affiliate in an amount exceeding 10 percent of its assets for one affiliate and 20 percent for affiliates in the aggregate. See sections 23A and 23B of the Federal Reserve Act, 12 U.S.C. §§ 371c and 371c-1. If a bank holding company down streams the proceeds of commercial paper to its subsidiary banks, any funds transferred will have an impact on the bank’s balance sheet, requiring the bank to maintain additional reserves, capital, and/or fees payable to the FDIC. Accordingly, bank holding

E. Commercial Paper Is Not an Appropriate Funding Source for Bank Loans

Commercial paper by nature is not an appropriate source of funding for bank loans. Commercial paper typically is issued pursuant an exemption from the Securities Act of 1933 under which it must have a maturity not exceeding 270 days and its proceeds must be used for current transactions.¹⁷ The majority of commercial paper currently has a maturity of 30 days or less. Moreover, to be eligible for purchase by MMFs, commercial paper must be of high quality and present no more than minimal credit risk. Commercial paper may become ineligible for purchase by MMFs if it is downgraded. Thus, commercial paper by definition is not an appropriate source of funding for long-term bank loans.

Prior to the financial crisis, banks and their affiliates attempted to use commercial paper as a means of funding long-term loans by packaging the loans into “conduits” that issued asset-backed commercial paper (“ABCP”). The banks sponsored and guaranteed payment of the commercial paper through back-up letters of credit and other liquidity enhancements, which made the paper eligible for purchase by MMFs and other investors. MMFs stopped purchasing the ABCP in 2007 and 2008, however, when the quality of the underlying loans came into question. Unable to roll over the ABCP, some large banks were forced to take the commercial paper onto their own balance sheets, depleting their capital and creating a liquidity crisis as banks stopped loaning to each other. Banks lacked sufficient capital to meet their ABCP guarantees because banking regulators exempted ABCP conduits from consolidated capital treatment in 2004. In 2010, the regulators eliminated the exemption. Consequently, banks have substantially curtailed their ABCP conduits and the amount of ABCP outstanding has dramatically declined. ABCP currently represents a small percentage of bank lending activity.

The OCC has cautioned national banks about the risks of asset securitization as an alternative source of bank funding and liquidity:

Banks of all sizes have increased the use of asset sales and securitization to access alternative funding sources, manage concentrations, improve financial performance ratios, and more efficiently meet customer needs. Some of these transactions, however, carry explicit recourse provisions within contractual documents, as well as the potential implied recourse associated with a bank’s desire to

companies generally do not use the proceeds of commercial paper or other debt to directly fund loans by their subsidiary banks.

¹⁷ Securities Act of 1933 § 3(a)(3).

maintain access to future funding by repurchasing or otherwise supporting securitizations that exhibit performance problems. As a result, examiners should be aware of situations in which banks might overestimate the risk transfer of sales and securitization or may underestimate the commitment and resources required to manage this process effectively. Such mistakes may lead to highly visible problems during the life of a transaction that could impair future access to the secondary markets. A bank's role and level of involvement in asset sales and securitization activities determine the degree of risk to which it is exposed.¹⁸

The OCC has warned that off-balance sheet obligations associated with ABCP and other market-based funding vehicles may increase liquidity risk:

Off-balance-sheet positions can serve as both a source of liquidity and a potential, sometimes unexpected, drain on liquidity. Banks with a substantial amount of unfunded loan commitments may be required to fund such obligations unexpectedly and on short notice. Other off-balance-sheet commitments, such as legally binding and non-legally binding support for securitizations, asset-backed commercial paper conduits, and other market-based funding vehicles, can affect a bank's liquidity position. . . . Often, the fulfillment of non-legally binding off-balance-sheet commitments is necessary to preserve the reputation of the institution, as well as to allow a bank continued access to that segment of the financial markets. On the other hand, off-balance-sheet activities may provide additional sources for liquidity. Banks can supplement their liquidity position by maintaining lines of credit with correspondent banks or their respective FHLB. Sound liquidity management includes the analysis of and planning for the operational and contingent sources and uses of funds associated with off-balance-sheet activities.¹⁹

Research on ABCP during the financial crisis indicates that banks used this form of securitization to concentrate, rather than disperse, financial risks in

¹⁸ Office of the Comptroller of the Currency, *Comptroller's Handbook: Liquidity* (June 2012) at 5-6.

¹⁹ *Id.* at 6.

the banking sector.²⁰ Because banks could sell ABCP only by issuing liquidity enhancements to guarantee payment to purchasers, they suffered losses of as much as \$200 billion when the ABCP market imploded in 2007 and 2008.²¹

F. SEC Filings Show That MMFs Are Not a Primary Source of Funding for Bank Loans

Banking organizations are required to disclose their sources of funding and liquidity in their annual and quarterly reports filed with the SEC. A review of public documents filed by major bank holding companies reveals that none of them rely on MMFs as a primary source of funding or liquidity. Rather, the public company documents show that bank holding companies and their subsidiary banks have access to an array of funding sources. Bank deposits are the main source of funds, along with long-term debt and shareholder equity. Commercial paper and other short-term borrowings serve as supplemental funding.

In its most recent annual report, for example, Citigroup stated that it relies on a variety of sources of funding and liquidity as follows:

Citi's primary sources of funding include (i) deposits via Citi's bank subsidiaries, which continue to be Citi's most stable and lowest cost source of long-term funding, (ii) long-term debt (including long-term collateralized financings) issued at the non-bank level and certain bank subsidiaries, and (iii) stockholders' equity. These sources are supplemented by short-term borrowings, primarily in the form of secured financing transactions (securities loaned or sold under agreements to repurchase, or repos), and commercial paper at the non-bank level.

Citigroup works to ensure that the structural tenor of these funding sources is sufficiently long in relation to the tenor of its asset base. The key goal of Citi's asset-liability management is to ensure that there is excess tenor in the liability structure so as to provide excess liquidity to fund the assets. The excess liquidity resulting from a longer-term tenor profile can effectively offset potential decreases in liquidity that may occur under stress. This excess funding is

²⁰ Viral V. Acharya, Philipp Schnabl, and Gustavo Suarez, "Securitization Without Risk Transfer," April 15, 2010.

²¹ *Id.* at 5.

held in the form of aggregate liquidity resources, as described below.

Citigroup's aggregate liquidity resources totaled \$405.5 billion at December 31, 2011....At December 31, 2011, Citigroup's non-bank aggregate liquidity resources totaled \$98.4 billion. This amount included unencumbered liquid securities and cash held in Citi's U.S. and non-U.S. broker-dealer entities. Citigroup's significant bank entities had approximately \$200.2 billion of aggregate liquidity resources as of December 31, 2011. This amount included \$70.7 billion of cash on deposit with major central banks (including the U.S. Federal Reserve Bank, European Central Bank, Bank of England, Swiss National Bank, Bank of Japan, the Monetary Authority of Singapore and the Hong Kong Monetary Authority). . . . The significant bank entities' liquidity resources also included unencumbered highly liquid government and government-backed securities. These securities are available-for-sale or secured funding through private markets or by pledging to the major central banks. The liquidity value of these liquid securities was \$129.5 billion at December 31, 2011.... Citi estimates that its other entities and subsidiaries held approximately \$106.9 billion in aggregate liquidity resources as of December 31, 2011. This included \$27.6 billion of cash on deposit with major central banks and \$79.3 billion of unencumbered liquid securities. . . .

Further, Citi's summary of aggregate liquidity resources above does not include additional potential liquidity in the form of Citigroup's borrowing capacity at the U.S. Federal Reserve Bank discount window and from the various Federal Home Loan Banks (FHLB), which is maintained by pledged collateral to all such banks. Citi also maintains additional liquidity available in the form of diversified high grade non-government securities.²²

Other bank holding company annual reports show a similarly diverse range of funding and liquidity sources.²³

²² Citigroup, Inc., Annual Report for the fiscal year ending Dec. 31, 2011, at 47.

²³ The funding structure of Goldman Sachs and Morgan Stanley differs somewhat from that of traditional bank holding companies. These companies previously were investment banks and became bank holding companies only in 2008. Hence, they draw more funding from commercial

In addition to their ability to raise funds and provide supplemental liquidity to their subsidiary banks, bank holding companies also can transfer liquidity among their bank subsidiaries in order to maximize lending on a group-wide basis. The FDIC has noted:

Loans can be shifted through sales or participations within the affiliated group from banks with excessive loan demand to others with inadequate loan demand. Banks with unpledged assets or unused borrowing capacity can lend assets, cross collateralize an affiliate's borrowings, or fund liabilities for other banks in the chain. Purchased liabilities can be attracted at the corporate level and inserted anywhere in the affiliated group. Therefore, in viewing liquidity or interest sensitivity in subsidiary banks, it can be misleading to review only the mix, maturity and rate sensitivity of an individual bank's balance sheet.²⁴

Accordingly, it is clear that banking organizations have ample sources of funding other than MMFs. It is misleading to view MMFs as a primary or indispensable source of funding for bank loans.

G. Numerous Factors Affect Banking Organizations' Access to Funds

Numerous factors affect the ability of banking organizations to obtain funding for loans. Some are bank-specific and some reflect external factors or events. The OCC has identified the following liquidity factors as affecting the ability of national banks to access funds and liquidity, none of which involve MMFs:

- deterioration in asset quality,
- events that affect public reputation or market perception (e.g., accounting scandals, adverse consumer or market events),
- deteriorating earnings performance,
- downgrade in a credit rating,
- aggressive balance-sheet growth,
- breakdowns in internal systems or controls (fraud),
- deteriorating local economic conditions,

paper, long- and short-term debt, and repo transactions than do traditional bank holding companies.

²⁴ Federal Deposit Insurance Corporation, Risk Management Manual of Examination Policies, § 6.1, Liquidity and Funds Management.

- major changes in national or global economic conditions or dislocations in financial markets,
- financial scandal or failure of major firms affecting public confidence,
- price volatility of certain types of assets in response to market events, and
- disturbances to payment and settlement systems or local natural disasters.²⁵

Banking organizations discuss their liquidity risk factors in their annual and quarterly reports filed with the SEC. A review of filings by major bank holding companies reveals that MMFs are not viewed as a liquidity risk factor. In its annual report, for example, Citigroup disclosed a variety of external factors that could affect its funding and liquidity sources:

Citi's liquidity and sources of funding can be significantly and negatively impacted by factors it cannot control, such as general disruptions in the financial markets or negative perceptions about the financial services industry in general, or negative investor perceptions of Citi's liquidity, financial position or credit worthiness in particular. Market perception of sovereign default risks, such as issues in the Eurozone as well as other complexities regarding the current European debt crisis, can also lead to ineffective money markets and capital markets, which could further impact Citi's availability of funding.

In addition, Citi's cost and ability to obtain deposits, secured funding and long-term unsecured funding from the capital markets are directly related to its credit spreads. Changes in credit spreads constantly occur and are market-driven, including both external market factors as well as factors specific to Citi, and can be highly volatile. Citi's credit spreads may also be influenced by movements in the costs to purchasers of credit default swaps referenced to Citi's long-term debt, which are also impacted by these external and Citi-specific factors. Moreover, Citi's ability to obtain funding may be impaired if other market participants are seeking to access the markets at the same time, or if market appetite is reduced, as is likely to occur in a liquidity or other market crisis. In addition, clearing

²⁵ Office of the Comptroller of the Currency, Comptroller's Handbook: Liquidity (June 2012) at 8.

organizations, regulators, clients and financial institutions with which Citi interacts may exercise the right to require additional collateral based on these market perceptions or market conditions, which could further impair Citi's access to funding.²⁶

Nowhere in its annual report did Citigroup state or suggest that it relies heavily on MMFs as a primary source of funding or that MMFs pose a risk factor in its sources of funding or liquidity. Citigroup emphasized, among other things, the importance of its credit rating in its ability to raise funds: "Citigroup's ability to access the capital markets and other sources of funds, as well as the cost of these funds and its ability to maintain certain deposits, is partially dependent on its credit ratings."²⁷ Citigroup also discussed how a downgrade of debt obligations of the U.S government might affect Citigroup's ability to obtaining funding:

A future downgrade of U.S. debt obligations or U.S. government-related obligations by one or more credit rating agencies, or heightened concern that such a downgrade might occur, could negatively affect Citi's ability to obtain funding collateralized by such obligations as well as the pricing of such funding. Such a downgrade could also negatively impact the pricing or availability of Citi's funding as a U.S. financial institution. In addition, such a downgrade could affect financial markets and economic conditions generally and the market value of the U.S. debt obligations held by Citi. As a result, such a downgrade could lead to a downgrade of Citi debt obligations and could have a material adverse effect on Citi's business, results of operations, capital, funding and liquidity.²⁸

* * * * Ratings downgrades by Fitch, Moody's or S&P could have a significant and immediate impact on Citi's funding and liquidity through cash obligations, reduced funding capacity and additional margin requirements for derivatives or other transactions. Ratings downgrades could also have a negative impact on other funding sources, such as secured financing and other margined transactions, for which there are no explicit triggers.²⁹

²⁶ Citigroup, Inc., 2011 Annual Report at 61.

²⁷ *Id.*

²⁸ *Id.* at 60.

²⁹ *Id.* at 61.

MMFs have no ability to control credit ratings or other risk factors that affect the ability of banking organizations to obtain funding and liquidity.

III. BANK FUNDING AND LIQUIDITY MANAGEMENT HAS BEEN DEFICIENT

Despite their access to insured deposits and other sources of funding and liquidity, banks and bank holding companies may experience difficulties accessing funds if they fail to manage their funding and liquidity risks appropriately. Flawed funding and liquidity management by banking organizations was a problem during the financial crisis, as banking regulators have acknowledged.

A. Banking Regulators Have Acknowledged Deficiencies in Funding and Liquidity Management at Banking Organizations

The financial crisis highlighted significant deficiencies in funding and liquidity risk management at banking organizations. Federal banking supervisors have acknowledged these deficiencies:

Recent events illustrate that liquidity risk management at many financial institutions is in need of improvement. Deficiencies include insufficient holdings of liquid assets, funding risky or illiquid asset portfolios with potentially volatile short-term liabilities, and a lack of meaningful cash flow projections and liquidity contingency plans.³⁰

In order to improve funding and liquidity risk management at banking organizations, the regulators in 2010 issued an interagency policy statement requiring banks and bank holding companies to identify, measure, monitor, and control their funding and liquidity risk.³¹ In addition, the OCC in 2012 issued comprehensive updated guidance on liquidity risk management for national banks.³² The Fed has proposed a new liquidity regime for large bank holding companies,³³ and the FDIC has issued guidance to banks and examiners on

³⁰ 74 Fed. Reg. 32035, 32038 (July 6, 2009) (Proposed Interagency Guidance on Funding and Liquidity Risk Management). See also 75 Fed. Reg. 13656 (March 22, 2010) (final Interagency Policy Statement on Funding and Liquidity Risk Management).

³¹ *Id.*

³² Office of the Comptroller of the Currency, Comptroller's Handbook: Liquidity (June 2012).

³³ 77 Fed. Reg. 594 (Jan. 5, 2012) (Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies, proposed rule).

funding and liquidity management.³⁴ These supervisory initiatives are discussed below. In none of these supervisory issuances are MMFs mentioned as a cause of funding or liquidity deficiencies at banking organizations.

B. The Fed Has Said That Flawed Liquidity Management “Contributed Significantly” to the Financial Crisis

The Federal Reserve has acknowledged that the reason why many banking organizations had difficulty funding themselves during the financial crisis was flawed liquidity risk management. The Fed has stated that many of the liquidity problems encountered by banking organizations were due to “lapses in basic principles of liquidity risk management”:

During the financial crisis that began in 2007, many solvent financial companies experienced significant financial stress because they did not manage their liquidity in a prudent manner. In some cases, these companies had difficulty in meeting their obligations as they became due because sources of funding became severely restricted. These events followed several years of ample liquidity in the financial system, during which liquidity risk management did not receive the same level of priority and scrutiny as management of other sources of risk. The rapid reversal in market conditions and availability of liquidity during the crisis illustrated how quickly liquidity can evaporate, and that illiquidity can last for an extended period, leading to a company’s insolvency before its assets experience significant deterioration in value.

Many of the liquidity-related difficulties experienced by financial companies were due to lapses in basic principles of liquidity risk management. This problem was evidence from the horizontal reviews of financial companies conducted by the Senior Supervisors Group (“SSG”), which comprises senior financial supervisors from seven countries. The SSG found that failure of liquidity risk management practices contributed significantly to the financial crisis. In particular, the SSG noted that firms’ inappropriate reliance on short-term sources of funding and in some cases, the repo market, as well as inaccurate measurements of funding needs and lack of effective

³⁴ Federal Deposit Insurance Corporation, Risk Management Manual of Examination Policies, § 6.1, Liquidity and Funds Management.

contingency funding were key factors in the liquidity crises many firms faced.³⁵

C. The Basel Committee on Banking Supervision Has Pointed to Flawed Liquidity Management as a Major Problem

The Basel Committee on Banking Supervision also identified flaws in liquidity risk management as a significant weakness that exacerbated financial difficulties at banks during the financial crisis:

During the early “liquidity phase” of the financial crisis that began in 2007, many banks – despite adequate capital levels – still experienced difficulties because they did not manage their liquidity in a prudent manner. The crisis again drove home the importance of liquidity to the proper functioning of financial markets and the banking sector. Prior to the crisis, asset markets were buoyant and funding was readily available at low cost. The rapid reversal in market conditions illustrated how quickly liquidity can evaporate and that illiquidity can last for an extended period of time. The banking system came under severe stress, which necessitated central bank action to support both the functioning of money markets and, in some cases, individual institutions. The difficulties experienced by some banks were due to lapses in basic principles of liquidity risk management.³⁶

In response, the Basel Committee in 2008 published “Principles for Sound Liquidity Risk Management and Supervision,” including detailed guidance on the risk management and supervision of funding liquidity risk. In 2011, the Basel Committee adopted a more formalized regulatory structure for liquidity risk management, discussed below.

IV. BANK LIQUIDITY RISK MANAGEMENT IS BEING IMPROVED

Banking regulators are seeking to improve funding and liquidity risk management at banks and bank holding companies to ensure they are able to maintain access to adequate funding at all times. Banking regulators have not identified MMFs as a funding or liquidity risk factor.

³⁵ 77 Fed. Reg. 594, 604 (Jan. 5, 2012) (Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies; proposed rule).

³⁶ *Id.* at 1.

A. The Dodd-Frank Act Requires Strict Liquidity Standards for Large Bank Holding Companies

The Dodd-Frank Act requires the Fed to impose strict prudential standards on bank holding companies with total consolidated assets of \$50 billion or more.³⁷ Among the standards specifically mandated are liquidity requirements.³⁸ The Fed is required to adopt liquidity requirements for large bank holding companies that are “more stringent” than those applicable to other bank holding companies and that increase in stringency based on certain risk factors.³⁹

Nothing in the Dodd-Frank Act indicates that Congress viewed MMFs as a threat to the safety and soundness of banks or their ability to make loans.

B. The Fed Has Proposed a New Framework for Liquidity Risk Management at Large Bank Holding Companies

In 2012, the Fed proposed a new framework to impose more stringent liquidity standards on large bank holding companies, as required by the Dodd-Frank Act.⁴⁰ The Fed stated:

Given the direct link between liquidity risk management failures and the many strains on firms and the financial system experienced during the recent crisis, the Board believes that strong liquidity risk management is crucial to ensuring a company’s resiliency during periods of financial market stress and that covered companies should be held to the highest liquidity standards.⁴¹

The Fed endorsed the liquidity framework established by the Basel Committee on Banking Supervision and committed to institute a new “liquidity regime” for large bank holding companies that would include a regulatory framework for strong liquidity risk management and quantitative liquidity requirements based on the Basel III liquidity ratios.⁴² The Fed stated that it intends to institute the new liquidity regime through a multi-stage process that would require a company to take a number of prudential steps to manage liquidity risk.

³⁷ Dodd-Frank Act § 165; 12 U.S.C. § 5365.

³⁸ 12 U.S.C. § 5365(b)(1)(A)(ii).

³⁹ 12 U.S.C. § 5365(b)(3).

⁴⁰ 77 Fed. Reg. 594 (Jan. 5, 2012) (Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies, proposed rule).

⁴¹ *Id.* at 604.

⁴² *Id.*

Key elements of the Fed’s proposed liquidity regime are the following: cash flow projections, liquidity stress testing, liquidity buffers, contingency funding plans, and specific limits on potential sources of liquidity risks. In proposing the new liquidity management regime, the Fed stated:

The Board believes liquidity requirements are vitally important to the overall goals of section 165 of the Dodd-Frank Act, to prevent or mitigate risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected financial companies.”⁴³

With respect to specific quantitative liquidity requirements, the Fed noted that it currently oversees liquidity risk management through the supervisory process and does not impose specific regulatory liquidity requirements on bank holding companies. It stated, however, that it intends to impose specific liquidity requirements in the future.⁴⁴

Nothing in the Fed’s proposed liquidity requirements for large bank holding companies under the Dodd-Frank Act suggests that MMFs threaten the ability of such companies or their subsidiaries to provide loans to the economy. Rather, the Fed’s proposal addresses weaknesses in bank holding companies that threaten their own stability.

C. The Basel Supervisory Committee Has Adopted a Liquidity Framework for Banking Organizations

The Fed’s liquidity regime for large bank holding companies relies heavily on the liquidity management framework adopted by the Basel Committee on Bank Supervision in.⁴⁵ The Basel Committee stated that its framework is designed to enhance the ability of banking organizations to absorb shocks and maintain their resiliency during periods of financial stress:

The objective of the reforms is to improve the banking sector’s ability to absorb shocks arising from financial and

⁴³ *Id.* at 604-605.

⁴⁴ *Id.* at 605.

⁴⁵ Basel Committee on Bank Supervision, *Basel III: International Framework for Liquidity Risk Measurement, Standards, and Monitoring* (December 20, 2010), available at www.bis.org/publ/bcbs188.htm. The Basel Committee in 2008 published *Principles for Sound Liquidity Risk Management and Supervision* providing detailed guidance on the risk management and supervision of funding liquidity risk.

economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy.⁴⁶

The Basel liquidity framework establishes minimum requirements designed to promote the resilience of a banking organization's liquidity risk profile. These minimum requirements are imposed through two ratios:

A liquidity coverage ratio (LCR), which is designed to promote the short-term resiliency of a banking organization's liquidity risk profile by ensuring that it has sufficient high quality liquid resources to survive an acute stress scenario lasting for one month; and

A net stable funding ratio (NSFR), which is designed to promote liquidity risk resilience over a longer time period and to create incentives for a banking organization to fund its activities with medium- and longer-term funding sources. The NSFR has a time horizon of one year, and is designed to provide a sustainable maturity structure of assets and liabilities.

Notably, MMFs are not included among the liquid assets a banking organization may use to satisfy the liquidity coverage ratio. This omission is ironic in view of the liquidity and diversification attributes of MMFs.⁴⁷

The Basel III liquidity ratios are scheduled to be implemented by Basel Committee member countries, including the United States, by 2015 and 2018, respectively. Nothing in the Basel liquidity framework suggests that MMFs threaten the ability of banking organizations to provide loans to the economy. Rather, the Basel framework addresses risk management deficiencies that are the source of liquidity issues at banking organizations.

D. Banking Regulators Have Issued a Joint Policy Statement on Funding and Liquidity Risk Management

The federal banking regulators in 2010 issued an interagency policy statement to improve funding and liquidity risk management at banking organizations.⁴⁸ The policy statement requires banking organizations to maintain

⁴⁶ *Id.* at 1.

⁴⁷ The irony is especially notable since less liquid, less diversified corporate bonds, in contrast, may be included.

⁴⁸ Federal Reserve Board, Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Office of Thrift Supervision, National Credit Union Administration,

adequate liquidity at the consolidated level and at significant subsidiaries based on the scope of business operations, business mix, and other legal or operational constraints. The agencies stated:

Recent events illustrate that liquidity risk management at many financial institutions is in need of improvement. Deficiencies include insufficient holdings of liquid assets, funding risky or illiquid asset portfolios with potentially volatile short-term liabilities, and a lack of meaningful cash flow projections and liquidity contingency plans.

The following guidance reiterates the process that institutions should follow to appropriately identify, measure, monitor, and control their funding and liquidity risk. In particular, the guidance re-emphasizes the importance of cash flow projections, diversified funding sources, stress testing, a cushion of liquid assets, and a formal well-developed contingency funding plan (CFP) as primary tools for measuring and managing liquidity risk. The agencies expect every depository financial institution to manage liquidity risk using processes and systems that are commensurate with the institution's complexity, risk profile, and scope of operations. Liquidity risk management processes and plans should be well documented and available for supervisory review. Failure to maintain an adequate liquidity risk management process will be considered an unsafe and unsound practice.⁴⁹

Nothing in the policy statement suggests that MMFs threaten the ability of a banking organization to make loans. Rather, the guidance seeks to improve the ability of banks to manage their funding and liquidity risk and thereby maintain their safety and soundness.

Interagency Policy Statement on Funding and Liquidity Risk Management, 75 Fed. Reg. 13656 (March 22, 2010).

⁴⁹ *Id.* at 13660.

E. The OCC Has Issued Supervisory Guidance on Funding and Liquidity for National Banks

In a supervisory booklet entitled “Liquidity,” the OCC in 2012 provided extensive guidance to examiners and bankers on liquidity risk management.⁵⁰ The OCC stated:

Liquidity is the lifeblood of any institution, but it is particularly crucial to highly leveraged entities such as banks. More broadly, the financial crisis beginning in 2008 demonstrated how liquidity problems and risks can be transmitted throughout the entire financial system. For all banks, the immediate and dire repercussions of insufficient liquidity makes liquidity risk management a key element in a bank’s overall risk management structure. The OCC expects all banks to manage liquidity risk with sophistication equal to the risks undertaken and complexity of exposures. Critical elements of a sound liquidity risk management process established by the board include:

- appropriate corporate governance and active involvement by management.
- appropriate strategies, policies, procedures, and limits used to manage and control liquidity risk, even in stressed conditions.
- appropriate liquidity risk measurement and monitoring systems.
- active management of intraday liquidity and collateral.
- maintaining an appropriately diverse mix of existing and potential future funding sources.
- adequate levels of highly liquid marketable securities, with no legal, regulatory, or operational impediments, that can be used to meet liquidity needs in stressful situations.
- comprehensive contingency funding plans (CFP) sufficient to address potential adverse liquidity events and emergency cash flow needs.
- adequate internal controls surrounding all aspects of liquidity risk management.⁵¹

⁵⁰ Office of the Comptroller of the Currency, Comptroller’s Handbook: Liquidity (June 2012).

⁵¹ *Id.* at 4.

The OCC pointed out that banks derive funding from both the asset and liability sides of their balance sheets, as well as from off balance-sheet activities. Asset-based liquidity sources include cash flows, pledging of assets, liquidation of assets, and securitization of assets. Liability-based liquidity sources include retail deposits, borrowed funds, deposit listing services, brokered deposits, and funding from the financial markets.

With respect to funding from the financial markets, the OCC noted that such funding can provide “a broader and more diversified funding base to larger banks” and “can allow banks to access funds at costs below those associated with more traditional retail deposit gathering.” The OCC noted that reliance on such funding, however, requires more complex risk management:

Some banks, particularly larger domestic and multinational institutions, turn to the financial markets for funding. Today, financial markets provide funding to banks in a variety of ways, including asset purchases, repurchase agreements, and equity and debt issuances. These sources provide a broader and more diversified funding base to larger banks. Often these market-based funding programs, when conducted on a broad scale, can allow banks to access funds at costs below those associated with more traditional retail deposit gathering.

A bank’s reliance on the financial markets for funding, however, can also increase the level, uncertainty, and complexity of a bank’s liquidity risk profile. The acceptance of bank products and services by the financial markets can be affected by a multitude of factors not usually associated with more traditional bank funding strategies. In addition to the customary institution-specific liquidity risks associated with most wholesale funding regimes, funding from financial markets also exposes a bank to heightened systemic liquidity risk. Increased liquidity risks can arise from the volatility of global and domestic funds supply and demand, unexpected disruptions in normal market trading and pricing, settlement and operational interruptions, and pronounced adjustments in a market’s risk pricing and acceptance.

Many financial market funding vehicles that remove assets from a bank’s balance sheet sometimes carry with them both contractual and noncontractual funding commitments. These noncontractual or implied commitments are usually not exercised during normal market conditions. However,

during market disruptions or times of stress, these commitments to financial investors and other market participants may necessitate substantial and unexpected use of funds or require a bank to repurchase underlying assets. Often, the fulfillment of these nonlegally binding commitments is necessary to preserve the reputation of the institution and allow a bank continued access to that segment of the financial markets. When the quality and performance of these assets has deteriorated, this condition may elevate the issuing bank's liquidity risk profile.

When a bank relies on funding from the financial markets, both operating and contingent liquidity management and planning programs must incorporate strategies designed to mitigate these unique and sometimes complex liquidity risks.⁵²

Nothing in the OCC's guidance suggests that MMFs threaten the ability of national banks to provide loans to the economy. Rather, the focus of the OCC's guidance appropriately is on improving funding and liquidity risk management at banks.

F. The FDIC Has Issued Supervisory Guidance on Funding and Liquidity for State Banks

The FDIC also has issued guidance for banks and examiners concerning funding and liquidity management.⁵³ The FDIC's guidance describes the importance of funding and liquidity management:

Liquidity represents the ability to fund assets and meet obligations as they become due. Liquidity is essential in all banks to compensate for expected and unexpected balance sheet fluctuations and provide funds for growth. Liquidity risk is the risk of not being able to obtain funds at a reasonable price within a reasonable time period to meet obligations as they become due. Because liquidity is critical to the ongoing viability of any bank, liquidity management is among the most important activities that a bank conducts.⁵⁴

⁵² *Id.* at 18-19

⁵³ Federal Deposit Insurance Corporation, Risk Management Manual of Examination Policies, § 6.1, Liquidity and Funds Management.

⁵⁴ *Id.* at Introduction.

Nothing in the FDIC's guidance suggests that MMFs threaten the ability of banks to make loans. The FDIC's guidance appropriately seeks to improve bank management of funding and liquidity risk.

V. MANY FACTORS AFFECT CREDIT AVAILABILITY

Many factors affect the availability of credit in the economy. Monetary and fiscal policies, along with global economic conditions, are key determinants of credit availability. In addition, government regulation of financial institutions affects the flow of credit.

Regulatory requirements can cause a contraction in credit. Capital requirements directly affect the amount of loans banks can make, for example. Increased capital on the balance sheet increases bank lending capacity but regulatory capital requirements prevent banks from expanding their lending when capital is already committed or otherwise unavailable. Lending limits and liquidity requirements also affect bank lending. Major banks have said that proposed limits on loans to counterparties will reduce their credit commitments by an estimated \$1.2 trillion.⁵⁵ Central bankers in Europe are worried that overly strict liquidity requirements "could force banks to rapidly shrink by constraining their lending."⁵⁶

The OCC has acknowledged that overly strict capital and liquidity requirements can adversely affect the flow of credit to the economy:

On the one hand, we need to adopt the kinds of real prudential reforms – to capital, liquidity, and risk management – that will fortify the financial system to prevent inevitable future problems from mushrooming into the type of meltdown we sustained in the fall of 2008, with devastating effects on the real economy. On the other hand, if we swing the pendulum too far too fast – requiring banks to hold too much capital and liquidity – we risk a significant and suboptimal restriction of credit, which can also have dire consequences for the real economy.⁵⁷

⁵⁵ See Tom Braithwaite, "Banks urge Fed retreat on credit exposure," *Financial Times*, April 15, 2012 ("Wall Street banks are resisting a Federal Reserve plan to limit their exposure to individual companies and governments, warning it will cut a combined \$1.2tn from credit commitments").

⁵⁶ David Enrich, "EU Banks: Give Us Leeway on Assets," *Wall St. J.*, Feb. 2, 2012, at C1.

⁵⁷ Remarks by John C. Dugan, Comptroller of the Currency, before the Institute of International Bankers, March 1, 2010.

Government regulation can dampen bank lending in other ways also. Community banks have complained that unduly strict underwriting standards and examiner criticism have impeded their lending to creditworthy small businesses since the financial crisis.⁵⁸ Banking regulators have pointed to other factors that reduced bank lending to small businesses following the financial crisis, including economic weakness, decreased loan demand, and higher levels of credit delinquency:

Some small businesses are experiencing difficulty in obtaining or renewing credit to support their operations. . . . This decline is attributable to a number of factors, including weakness in the broader economy, decreasing loan demand, and higher levels of credit risk and delinquency. These factors have prompted institutions to review their lending practices, tighten their underwriting standards, and review their capacity to meet current and future credit demands. In addition, some financial institutions may have reduced lending due to a need to strengthen their own capital positions and balance sheets.⁵⁹

* * * *

A number of factors are contributing to the reduced supply of bank loans. For instance, in response to an increase in the number of delinquent and nonperforming loans, many banks have reduced existing lines of credit sharply and have tightened their standards and terms for new credit. In other cases, banks with capital positions that have been

⁵⁸ See Elizabeth A. Duke, Governor, Federal Reserve Board, “Opportunities to Reduce Regulatory Burden and Improve Credit Availability,” remarks at the 2012 Bank Presidents Seminar, Jan. 13, 2012 (“Since 2008, many banks have seen their assets’ quality criticized and their ratings downgraded. This is not surprising given the severity of the economic downturn and the effect it had on the quality of bank assets. However, some bankers complain that examiners also tightened their approach. Indeed, we repeatedly hear that fear of examiner criticism is one of the reasons banks hesitate to lend to small businesses.”) These concerns are long-standing. See “Effect of Bank Regulation on Credit Availability,” Hearing before the Subcommittee on Financial Institutions Supervision, Regulation, and Deposit Insurance of the House Committee on Banking, Finance, and Urban Affairs, March 30, 1993; “Bank and Thrift Regulation: Concerns About Credit Availability and Regulatory Burden,” Testimony by Charles A. Bowsher, Comptroller General of the United States before the House Subcommittee on Commerce, Consumer and Monetary Affairs, Committee on Government Operations, March 17, 1993, GAO/T-GGD-93-10.

⁵⁹ Department of the Treasury, Federal Deposit Insurance Corporation, Federal Reserve Board, Interagency Statement on Meeting the Credit Needs of Creditworthy Small Business Borrowers (Feb. 5, 2010).

eroded by losses or those with limited access to capital markets may be reducing risk assets to improve their capital positions, especially amid continued uncertainty about the economic outlook and possible future loan losses.

. . . . The reduction in the availability of credit, however, is not the whole story. There is also less demand for credit by sound firms. . . . [W]hile some potential borrowers seek less credit, others are no longer qualified to borrow. Weakened balance sheets, reduced income, falling real estate collateral values, and in some cases, a recent history of payment problems, have made it difficult for some businesses and consumers to qualify for loans, especially under the current stricter standards.

. . . . Finally, small business lending often is based on relationships that are solidified over time. Sometimes those relationships are broken as a result of the bank's inability to lend, such as when banks fail or when they reduce lending due to strains or concentrations in their own portfolios. In those circumstances, small businesses may find it quite difficult to establish similar arrangements with a new bank.⁶⁰

Treasury Secretary Geithner has stated that recent changes in banking regulation have made banks better positioned to supply credit to the economy:

We have forced banks to substantially increase the amount of capital they hold, so that they are able to provide credit to the economy and absorb losses in the future. Tier 1 common capital levels at our country's banks are up by \$420 billion, or 70 percent, from three years ago.... We have forced a significant reduction in overall leverage in the financial system. Financial sector debt has dropped by more than \$3 trillion since the crisis, and household debt is down \$900 billion. Banks are funding themselves more conservatively, relying less on riskier short-term funding.... Credit is expanding, and the cost of credit has fallen significantly from the peaks of the crisis. Commercial and industrial lending at commercial banks increased 10

⁶⁰ Elizabeth A. Duke, Governor, Federal Reserve Board, "Restoring Credit to Communities," Remarks at the 53rd Annual Western Independent Bankers Conference, March 31, 2010.

percent in 2011 and increased at an annual rate of 11 percent in the first five months of 2012.⁶¹

Thus, a variety of factors affect the availability of bank credit in the economy. The “unwillingness” or failure of MMFs to provide funding for bank loans is not one of them.

The role of banks in extending credit to the economy gradually has eroded over the years due in part to government policies as well as competition. For example, the Regulation Q prohibition on the payment of interest on bank deposits was a key impetus for the emergence of MMFs as an efficient investment alternative for many bank depositors. Banks have faced growing competition from securities firms, financial companies, and other participants in the capital markets that are able to provide credit efficiently. The decreased role of banks as credit providers has not reduced the amount of credit available to the economy. Rather, other credit providers have become significant sources of credit and the total amount of credit has expanded.

A paper by researchers from the OCC, using Flow of Funds data from the Federal Reserve, shows that the share of credit extended to the U.S. economy by banks declined from more than 60 percent in 1970 to about 30 percent at the end of 2008.⁶² Government sponsored enterprises and structured finance vehicles increased their share from 4 percent to more than 30 percent during the same period.

The OCC paper shows that MMFs play a relatively small role as credit providers. According to the paper, at the end of 2008, MMFs held approximately five percent of total credit market assets extended to the U.S. economy, less than insurance companies.⁶³

It is true that the flow of bank credit to the economy may be affected if MMFs and other investors find reason to withdraw from banks and those banks lack effective liquidity management measures. Bank credit also may contract if depositors find reason to withdraw from banks. Fed researchers and academics have found that runs on banks during the financial crisis occurred not only when depositors withdrew but when bank *borrowers* drew down bank credit lines due to

⁶¹ Testimony by Timothy F. Geithner, Secretary of the Treasury, “Financial Stability Oversight Council Annual Report to Congress,” before the Senate Committee on Banking, Housing, and Urban Affairs, July 26, 2012.

⁶² Susan Hickok and Daniel E. Nolle, Office of the Comptroller of the Currency, “The U.S. Financial System in 2011: How Will Sufficient Credit Be Provided?” OCC Economics Working Paper 2009-6 (Nov. 2009) at 48.

⁶³ *Id.*

concerns about bank solvency.⁶⁴ These researchers concluded that banks reduced their lending less during the crisis if they had better access to deposit financing and were not as reliant on short-term debt.⁶⁵

In general, during most periods of financial distress, banks gain deposits as investors seek safety for their liquid assets.⁶⁶ Indeed, during the recent financial crisis, deposits increased by approximately \$800 billion and currently total approximately \$1.6 trillion more than at the height of the crisis in 2008.⁶⁷ Banks can use these deposits to maintain the flow of credit to the economy. In a crisis that slows economic activity, however, loan demand is likely to be reduced. It is noteworthy that the TARP program implemented by the government in 2008 and 2009 did not require banks to use their TARP proceeds to make loans. Nor did the FDIC's Temporary Debt Guarantee Program which guaranteed debt issued by banks and bank holding companies.⁶⁸

In sum, a variety of factors influence the demand for credit and the ability of banks to make loans, including the effectiveness with which banks manage their funding and liquidity resources, as banking regulators have recognized. Those who claim that MMFs can undermine credit availability from banks and thereby "bring down" the financial system have a simplistic and erroneous view of the complex dynamics that determine credit flows.

⁶⁴ See Judit Montoriol-Garriga, Federal Reserve Bank of Boston, and Evan Sekeris, Federal Reserve Bank of Richmond, "A Question of Liquidity: The Great Banking Run of 2008?", Quantitative Analysis Unit, Federal Reserve Bank of Boston, Working Paper No. QAU09-04 (March 30, 2009) ("In other words, when a bank was thought to be at high risk of default, firms that had credit lines with them were more likely to use them than if their credit line was with a healthier bank."). See also Victoria Ivashina and David Scharfstein, "Bank Lending During the Financial Crisis of 2008," available at ssrn.com/abstract=1297337, at 2-3 ("We document that there was a simultaneous run by borrowers who drew down their credit lines.").

⁶⁵ Ivashina and Scharfstein, *supra*.

⁶⁶ In the recent crisis, however, researchers have found that some banks aggressively sought to gain deposits by offering higher rates and that "it may not necessarily be stabilizing for the financial sector if funds are deposited at unhealthy banks with attractive rates or at banks with an unnatural advantage because of explicit or implicit guarantees." Viral V. Acharya and Nada Mora, "Are Banks Passive Liquidity Backstops? Deposit Rates and Flows during the 2007-2009 Crisis," Feb. 5, 2012.

⁶⁷ Source: Federal Deposit Insurance Corporation database.

⁶⁸ By far the majority of debt guaranteed under the FDIC's debt guarantee program during the financial crisis was issued by bank holding companies and their nonbank subsidiaries to fund their nonbanking activities. This debt was mainly in the form of medium term notes with maturities exceeding the maturity limits applicable to MMFs under SEC Rule 2a-7.

VI. CONCLUSION

Claims by academics that MMFs threaten the economy by destabilizing the ability of banks to supply credit are fallacious. It is not true that “large banks depend on MMFs for short-term funding” or that MMFs are “a critical source” of funding for large banks. One need only look at the annual reports filed by bank holding companies with the SEC, which are available on the SEC’s website, to see that this claim is unfounded.

Public company filings show that banking organizations have access to a variety of funding sources and are subject to numerous liquidity risk factors having nothing to do with MMFs. Moreover, one can look at information detailing the portfolio holdings of MMFs, available on MMF websites, to see that MMFs hold relatively small amounts of obligations of U.S. banking organizations. To the extent that MMFs hold commercial paper, much of it is used to fund nonbank subsidiaries of bank holding companies, not banks.

Claims by academics that the economy is in the middle of a credit crisis caused by the unwillingness of MMFs to lend to banks except on a short-term basis similarly are false. One need only look at SEC Rule 2a-7 to see that MMFs have no ability to act as a primary source of funding for loans. The Rule limits MMF portfolio investments to only high quality, short-term instruments posing no more than minimal credit risk and imposes maturity limits and liquidity requirements. Even when bank obligations meet the eligibility requirements for investment by MMFs, it would be an unsafe and unsound practice for a bank to rely on short-term funding from MMFs as a primary source of funds for long-term loans.

Banking regulators have acknowledged that deficiencies in basic liquidity risk management at banking organizations contributed significantly to the financial crisis. In numerous supervisory issuances, banking regulators have comprehensively analyzed the sources of funding relied on by banking organizations and issued guidance on the need for banking organizations to improve their funding and liquidity risk management. In none of these issuances have regulators identified MMFs as a primary source of funding for loans or as a risk factor that threatens the ability of banks to provide loans to the economy. Rather, banking regulators have prescribed supervisory requirements for banking organizations to better manage their funding and liquidity risks to avoid a liquidity crisis in the future.

Imposing a capital buffer requirement on MMFs, as academic proponents of the latest MMF fallacy have proposed, would do nothing to improve funding and liquidity risk management at banks. To the contrary, it would more likely encourage the erroneous view that MMFs are a stable source of funding for bank loans and thereby subvert prudent liquidity management at banks.

MMFs afford investors more safety of principal, liquidity, transparency, diversification, efficiency, and convenience, with a market rate of return, than any other product in the financial system. Only two MMFs ever have failed to maintain a net asset value of \$1.00 per share, compared to bank failures numbering in the thousands since 1980. One might surmise that a reason for the exceptional record of safety and performance of MMFs is the fact that they do not serve as a primary source of funding for bank loans.

APPENDIX—INTERAGENCY POLICY STATEMENT ON FUNDING AND LIQUIDITY RISK MANAGEMENT

In 2010, the federal banking agencies adopted an Interagency Policy Statement on Funding and Liquidity Risk Management.⁶⁹ The following are excerpts from the Policy Statement:

Recent events illustrate that liquidity risk management at many financial institutions is in need of improvement. Deficiencies include insufficient holdings of liquid assets, funding risky or illiquid asset portfolios with potentially volatile short-term liabilities, and a lack of meaningful cash flow projections and liquidity contingency plans.

The following guidance reiterates the process that institutions should follow to appropriately identify, measure, monitor, and control their funding and liquidity risk. In particular, the guidance re-emphasizes the importance of cash flow projections, diversified funding sources, stress testing, a cushion of liquid assets, and a formal well-developed contingency funding plan (CFP) as primary tools for measuring and managing liquidity risk. The agencies expect every depository financial institution to manage liquidity risk using processes and systems that are commensurate with the institution's complexity, risk profile, and scope of operations. Liquidity risk management processes and plans should be well documented and available for supervisory review. Failure to maintain an adequate liquidity risk management process will be considered an unsafe and unsound practice.

Sound Practices of Liquidity Risk Management

An institution's liquidity management process should be sufficient to meet its daily funding needs and cover both expected and unexpected deviations from normal operations. Accordingly, institutions should have a comprehensive management process for identifying, measuring, monitoring, and controlling liquidity risk. Because of the critical importance to the viability of the institution, liquidity risk management should be fully

⁶⁹ 75 Fed. Reg. 13656 (March 22, 2010) (excerpts).

integrated into the institution's risk management processes. Critical elements of sound liquidity risk management include:

- Effective corporate governance consisting of oversight by the board of directors and active involvement by management in an institution's control of liquidity risk.
- Appropriate strategies, policies, procedures, and limits used to manage and mitigate liquidity risk.
- Comprehensive liquidity risk measurement and monitoring systems (including assessments of the current and prospective cash flows or sources and uses of funds) that are commensurate with the complexity and business activities of the institution.
- Active management of intraday liquidity and collateral.
- An appropriately diverse mix of existing and potential future funding sources.
- Adequate levels of highly liquid marketable securities free of legal, regulatory, or operational impediments, that can be used to meet liquidity needs in stressful situations.
- Comprehensive contingency funding plans (CFPs) that sufficiently address potential adverse liquidity events and emergency cash flow requirements.
- Internal controls and internal audit processes sufficient to determine the adequacy of the institution's liquidity risk management process.

Supervisors will assess these critical elements in their reviews of an institution's liquidity risk management process in relation to its size, complexity, and scope of operations. * * * *

Strategies, Policies, Procedures, and Risk Tolerances

11. Institutions should have documented strategies for managing liquidity risk and clear policies and procedures for limiting and controlling risk exposures that appropriately reflect the institution's risk tolerances. Strategies should identify primary sources of funding for meeting daily operating cash outflows, as well as seasonal and cyclical cash flow fluctuations. Strategies should also

address alternative responses to various adverse business scenarios. Policies and procedures should provide for the formulation of plans and courses of actions for dealing with potential temporary, intermediate-term, and long-term liquidity disruptions. Policies, procedures, and limits also should address liquidity separately for individual currencies, legal entities, and business lines, when appropriate and material, and should allow for legal, regulatory, and operational limits for the transferability of liquidity as well. Senior management should coordinate the institution's liquidity risk management with disaster, contingency, and strategic planning efforts, as well as with business line and risk management objectives, strategies, and tactics.

12. Policies should clearly articulate a liquidity risk tolerance that is appropriate for the business strategy of the institution considering its complexity, business mix, liquidity risk profile, and its role in the financial system. Policies should also contain provisions for documenting and periodically reviewing assumptions used in liquidity projections. Policy guidelines should employ both quantitative targets and qualitative guidelines. For example, these measurements, limits, and guidelines may be specified in terms of the following measures and conditions, as applicable:

- Cash flow projections that include discrete and cumulative cash flow mismatches or gaps over specified future time horizons under both expected and adverse business conditions.
- Target amounts of unencumbered liquid asset reserves.
- Measures used to identify unstable liabilities and liquid asset coverage ratios. For example, these may include ratios of wholesale funding to total liabilities, potentially volatile retail (*e.g.*, high-cost or out-of-market) deposits to total deposits, and other liability dependency measures, such as short-term borrowings as a percent of total funding.
- Asset concentrations that could increase liquidity risk through a limited ability to convert to cash (*e.g.*, complex financial instruments,¹¹²¹ bank-owned (corporate-owned) life insurance, and less marketable loan portfolios).

- Funding concentrations that address diversification of funding sources and types, such as large liability and borrowed funds dependency, secured versus unsecured funding sources, exposures to single providers of funds, exposures to funds providers by market segments, and different types of brokered deposits or wholesale funding.
- Funding concentrations that address the term, repricing, and market characteristics of funding sources with consideration given to the nature of the assets they fund. This may include diversification targets for short-, medium-, and long-term funding; instrument type and securitization vehicles; and guidance on concentrations for currencies and geographical markets.
- Contingent liability exposures such as unfunded loan commitments, lines of credit supporting asset sales or securitizations, and collateral requirements for derivatives transactions and various types of secured lending.
- Exposures of material activities, such as securitization, derivatives, trading, transaction processing, and international activities, to broad systemic and adverse financial market events. This is most applicable to institutions with complex and sophisticated liquidity risk profiles.
- Alternative measures and conditions may be appropriate for certain institutions.

13. Policies also should specify the nature and frequency of management reporting. In normal business environments, senior managers should receive liquidity risk reports at least monthly, while the board of directors should receive liquidity risk reports at least quarterly. Depending upon the complexity of the institution's business mix and liquidity risk profile, management reporting may need to be more frequent. Regardless of an institution's complexity, it should have the ability to increase the frequency of reporting on short notice, if the need arises. Liquidity risk reports should impart to senior management and the board a clear understanding of the institution's liquidity risk exposure, compliance with risk limits, consistency between management's strategies and tactics, and consistency

between these strategies and the board's expressed risk tolerance.

14. Institutions should consider liquidity costs, benefits, and risks in strategic planning and budgeting processes. Significant business activities should be evaluated for both liquidity risk exposure and profitability. More complex and sophisticated institutions should incorporate liquidity costs, benefits, and risks in the internal product pricing, performance measurement, and new product approval process for all material business lines, products, and activities. Incorporating the cost of liquidity into these functions should align the risk-taking incentives of individual business lines with the liquidity risk exposure their activities create for the institution as a whole. The quantification and attribution of liquidity risks should be explicit and transparent at the line management level and should include consideration of how liquidity would be affected under stressed conditions.

Liquidity Risk Measurement, Monitoring, and Reporting

15. The process of measuring liquidity risk should include robust methods for comprehensively projecting cash flows arising from assets, liabilities, and off-balance-sheet items over an appropriate set of time horizons. For example, time buckets may be daily for very short timeframes out to weekly, monthly, and quarterly for longer time frames. Pro forma cash flow statements are a critical tool for adequately managing liquidity risk. Cash flow projections can range from simple spreadsheets to very detailed reports depending upon the complexity and sophistication of the institution and its liquidity risk profile under alternative scenarios. Given the critical importance that assumptions play in constructing measures of liquidity risk and projections of cash flows, institutions should ensure that the assumptions used are reasonable, appropriate, and adequately documented. Institutions should periodically review and formally approve these assumptions. Institutions should focus particular attention on the assumptions used in assessing the liquidity risk of complex assets, liabilities, and off-balance-sheet positions. Assumptions applied to positions with uncertain cash flows, including the stability of retail and brokered deposits and secondary market issuances and borrowings, are

especially important when they are used to evaluate the availability of alternative sources of funds under adverse contingent liquidity scenarios. Such scenarios include, but are not limited to, deterioration in the institution's asset quality or capital adequacy.

16. Institutions should ensure that assets are properly valued according to relevant financial reporting and supervisory standards. An institution should fully factor into its risk management practices the consideration that valuations may deteriorate under market stress and take this into account in assessing the feasibility and impact of asset sales on its liquidity position during stress events.

17. Institutions should ensure that their vulnerabilities to changing liquidity needs and liquidity capacities are appropriately assessed within meaningful time horizons, including intraday, day-to-day, short-term weekly and monthly horizons, medium-term horizons of up to one year, and longer-term liquidity needs of one year or more. These assessments should include vulnerabilities to events, activities, and strategies that can significantly strain the capability to generate internal cash.

Stress Testing

18. Institutions should conduct stress tests regularly for a variety of institution-specific and marketwide events across multiple time horizons. The magnitude and frequency of stress testing should be commensurate with the complexity of the financial institution and the level of its risk exposures. Stress test outcomes should be used to identify and quantify sources of potential liquidity strain and to analyze possible impacts on the institution's cash flows, liquidity position, profitability, and solvency. Stress tests should also be used to ensure that current exposures are consistent with the financial institution's established liquidity risk tolerance. Management's active involvement and support is critical to the effectiveness of the stress testing process. Management should discuss the results of stress tests and take remedial or mitigating actions to limit the institution's exposures, build up a liquidity cushion, and adjust its liquidity profile to fit its risk tolerance. The results of stress tests should also play a key role in shaping

the institution's contingency planning. As such, stress testing and contingency planning are closely intertwined.

Collateral Position Management

19. An institution should have the ability to calculate all of its collateral positions in a timely manner, including the value of assets currently pledged relative to the amount of security required and unencumbered assets available to be pledged. An institution's level of available collateral should be monitored by legal entity, jurisdiction, and currency exposure, and systems should be capable of monitoring shifts between intraday and overnight or term collateral usage. An institution should be aware of the operational and timing requirements associated with accessing the collateral given its physical location (i.e., the custodian institution or securities settlement system with which the collateral is held). Institutions should also fully understand the potential demand on required and available collateral arising from various types of contractual contingencies during periods of both marketwide and institution-specific stress.

Management Reporting

20. Liquidity risk reports should provide aggregate information with sufficient supporting detail to enable management to assess the sensitivity of the institution to changes in market conditions, its own financial performance, and other important risk factors. The types of reports or information and their timing will vary according to the complexity of the institution's operations and risk profile. Reportable items may include but are not limited to cash flow gaps, cash flow projections, asset and funding concentrations, critical assumptions used in cash flow projections, key early warning or risk indicators, funding availability, status of contingent funding sources, or collateral usage. Institutions should also report on the use of and availability of government support, such as lending and guarantee programs, and implications on liquidity positions, particularly since these programs are generally temporary or reserved as a source for contingent funding.

Liquidity Across Currencies, Legal Entities, and Business Lines

21. A depository institution should actively monitor and control liquidity risk exposures and funding needs within and across currencies, legal entities, and business lines. Also, depository institutions should take into account operational limitations to the transferability of liquidity, and should maintain sufficient liquidity to ensure compliance during economically stressed periods with applicable legal and regulatory restrictions on the transfer of liquidity among regulated entities. The degree of centralization in managing liquidity should be appropriate for the depository institution's business mix and liquidity risk profile. The agencies expect depository institutions to maintain adequate liquidity both at the consolidated level and at significant legal entities.

22. Regardless of its organizational structure, it is important that an institution actively monitor and control liquidity risks at the level of individual legal entities, and the group as a whole, incorporating processes that aggregate data across multiple systems in order to develop a group-wide view of liquidity risk exposures. It is also important that the institution identify constraints on the transfer of liquidity within the group.

23. Assumptions regarding the transferability of funds and collateral should be described in liquidity risk management plans.

Intraday Liquidity Position Management

24. Intraday liquidity monitoring is an important component of the liquidity risk management process for institutions engaged in significant payment, settlement, and clearing activities. An institution's failure to manage intraday liquidity effectively, under normal and stressed conditions, could leave it unable to meet payment and settlement obligations in a timely manner, adversely affecting its own liquidity position and that of its counterparties. Among large, complex organizations, the interdependencies that exist among payment systems and the inability to meet certain critical payments has the potential to lead to systemic disruptions that can prevent

the smooth functioning of all payment systems and money markets. Therefore, institutions with material payment, settlement and clearing activities should actively manage their intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions. Senior management should develop and adopt an intraday liquidity strategy that allows the institution to:

- Monitor and measure expected daily gross liquidity inflows and outflows.
- Manage and mobilize collateral when necessary to obtain intraday credit.
- Identify and prioritize time-specific and other critical obligations in order to meet them when expected.
- Settle other less critical obligations as soon as possible.
- Control credit to customers when necessary.
- Ensure that liquidity planners understand the amounts of collateral and liquidity needed to perform payment-system obligations when assessing the organization's overall liquidity needs.

Diversified Funding

25. An institution should establish a funding strategy that provides effective diversification in the sources and tenor of funding. It should maintain an ongoing presence in its chosen funding markets and strong relationships with funds providers to promote effective diversification of funding sources. An institution should regularly gauge its capacity to raise funds quickly from each source. It should identify the main factors that affect its ability to raise funds and monitor those factors closely to ensure that estimates of fund raising capacity remain valid.

26. An institution should diversify available funding sources in the short-, medium-, and long-term. Diversification targets should be part of the medium- to long-term funding plans and should be aligned with the budgeting and business planning process. Funding plans should take into account correlations between sources of funds and market conditions. Funding should also be diversified across a full range of retail as well as secured

and unsecured wholesale sources of funds, consistent with the institution's sophistication and complexity. Management should also consider the funding implications of any government programs or guarantees it uses. As with wholesale funding, the potential unavailability of government programs over the intermediate- and long-term should be fully considered in the development of liquidity risk management strategies, tactics, and risk tolerances. Funding diversification should be implemented using limits addressing counterparties, secured versus unsecured market funding, instrument type, securitization vehicle, and geographic market. In general, funding concentrations should be avoided. Undue over-reliance on any one source of funding is considered an unsafe and unsound practice.

27. An essential component of ensuring funding diversity is maintaining market access. Market access is critical for effective liquidity risk management as it affects both the ability to raise new funds and to liquidate assets. Senior management should ensure that market access is being actively managed, monitored, and tested by the appropriate staff. Such efforts should be consistent with the institution's liquidity risk profile and sources of funding. For example, access to the capital markets is an important consideration for most large complex institutions, whereas the availability of correspondent lines of credit and other sources of wholesale funds are critical for smaller, less complex institutions.

28. An institution should identify alternative sources of funding that strengthen its capacity to withstand a variety of severe institution-specific and marketwide liquidity shocks. Depending upon the nature, severity, and duration of the liquidity shock, potential sources of funding include, but are not limited to, the following:

- Deposit growth.
- Lengthening maturities of liabilities.
- Issuance of debt instruments.
- Sale of subsidiaries or lines of business.
- Asset securitization.
- Sale (either outright or through repurchase agreements) or pledging of liquid assets.
- Drawing down committed facilities.
- Borrowing.

Cushion of Liquid Assets

29. Liquid assets are an important source of both primary (operating liquidity) and secondary (contingent liquidity) funding at many institutions. Indeed, a critical component of an institution's ability to effectively respond to potential liquidity stress is the availability of a cushion of highly liquid assets without legal, regulatory, or operational impediments (i.e., unencumbered) that can be sold or pledged to obtain funds in a range of stress scenarios. These assets should be held as insurance against a range of liquidity stress scenarios including those that involve the loss or impairment of typically available unsecured and/or secured funding sources. The size of the cushion of such high-quality liquid assets should be supported by estimates of liquidity needs performed under an institution's stress testing as well as aligned with the risk tolerance and risk profile of the institution. Management estimates of liquidity needs during periods of stress should incorporate both contractual and noncontractual cash flows, including the possibility of funds being withdrawn. Such estimates should also assume the inability to obtain unsecured and uninsured funding as well as the loss or impairment of access to funds secured by assets other than the safest, most liquid assets.

30. Management should ensure that unencumbered, highly liquid assets are readily available and are not pledged to payment systems or clearing houses. The quality of unencumbered liquid assets is important as it will ensure accessibility during the time of most need. An institution could use its holdings of high-quality securities, for example, U.S. Treasury securities, securities issued by U.S. government-sponsored agencies, excess reserves at the central bank or similar instruments, and enter into repurchase agreements in response to the most severe stress scenarios.

Contingency Funding Plan

31. All financial institutions, regardless of size and complexity, should have a formal CFP that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. A CFP should delineate policies to manage a range of stress environments, establish clear lines

of responsibility, and articulate clear implementation and escalation procedures. It should be regularly tested and updated to ensure that it is operationally sound. For certain components of the CFP, affirmative testing (e.g., liquidation of assets) may be impractical. In these instances, institutions should be sure to test operational components of the CFP. For example, ensuring that roles and responsibilities are up-to-date and appropriate; ensuring that legal and operational documents are up-to-date and appropriate; and ensuring that cash and collateral can be moved where and when needed, and ensuring that contingent liquidity lines can be drawn when needed.

32. Contingent liquidity events are unexpected situations or business conditions that may increase liquidity risk. The events may be institution-specific or arise from external factors and may include:

- The institution's inability to fund asset growth.
- The institution's inability to renew or replace maturing funding liabilities.
- Customers unexpectedly exercising options to withdraw deposits or exercise off-balance-sheet commitments.
- Changes in market value and price volatility of various asset types.
- Changes in economic conditions, market perception, or dislocations in the financial markets.
- Disturbances in payment and settlement systems due to operational or local disasters.

33. Insured institutions should be prepared for the specific contingencies that will be applicable to them if they become less than Well Capitalized pursuant to Prompt Correction Action (PCA) provisions under the Federal Deposit Insurance Corporation Improvement Act. Contingencies may include restricted rates paid for deposits, the need to seek approval from the FDIC/NCUA to accept brokered deposits, and the inability to accept any brokered deposits.

34. A CFP provides a documented framework for managing unexpected liquidity situations. The objective of the CFP is to ensure that the institution's sources of liquidity are sufficient to fund normal operating

requirements under contingent events. A CFP also identifies alternative contingent liquidity resources that can be employed under adverse liquidity circumstances. An institution's CFP should be commensurate with its complexity, risk profile, and scope of operations. As macroeconomic and institution-specific conditions change, CFPs should be revised to reflect these changes

35. Contingent liquidity events can range from high-probability/low-impact events to low-probability/high-impact events. Institutions should incorporate planning for high-probability/low-impact liquidity risks into the day-to-day management of sources and uses of funds. Institutions can generally accomplish this by assessing possible variations around expected cash flow projections and providing for adequate liquidity reserves and other means of raising funds in the normal course of business. In contrast, all financial institution CFPs will typically focus on events that, while relatively infrequent, could significantly impact the institution's operations. A CFP should:

Identify Stress Events. Stress events are those that may have a significant impact on the institution's liquidity given its specific balance-sheet structure, business lines, organizational structure, and other characteristics. Possible stress events may include deterioration in asset quality, changes in agency credit ratings, PCA capital categories and CAMELS ratings downgrades, widening of credit default spreads, operating losses, declining financial institution equity prices, negative press coverage, or other events that may call into question an institution's ability to meet its obligations.

Assess Levels of Severity and Timing. The CFP should delineate the various levels of stress severity that can occur during a contingent liquidity event and identify the different stages for each type of event. The events, stages, and severity levels identified should include temporary disruptions, as well as those that might be more intermediate term or longer-term. Institutions can use the different stages or levels of severity identified to design early-warning indicators, assess potential funding needs at various points in a developing crisis, and specify comprehensive action plans. The length of the scenario will

be determined by the type of stress event being modeled and should encompass the duration of the event.

Assess Funding Sources and Needs. A critical element of the CFP is the quantitative projection and evaluation of expected funding needs and funding capacity during the stress event. This entails an analysis of the potential erosion in funding at alternative stages or severity levels of the stress event and the potential cash flow mismatches that may occur during the various stress levels. Management should base such analysis on realistic assessments of the behavior of funds providers during the event and incorporate alternative contingency funding sources. The analysis also should include all material on- and off-balance-sheet cash flows and their related effects. The result should be a realistic analysis of cash inflows, outflows, and funds availability at different time intervals during the potential liquidity stress event in order to measure the institution's ability to fund operations. Common tools to assess funding mismatches include:

Liquidity gap analysis—A cash flow report that essentially represents a base case estimate of where funding surpluses and shortfalls will occur over various future time frames.

Stress tests—A pro forma cash flow report with the ability to estimate future funding surpluses and shortfalls under various liquidity stress scenarios and the institution's ability to fund expected asset growth projections or sustain an orderly liquidation of assets under various stress events.

Identify Potential Funding Sources

Because liquidity pressures may spread from one funding source to another during a significant liquidity event, institutions should identify alternative sources of liquidity and ensure ready access to contingent funding sources. In some cases, these funding sources may rarely be used in the normal course of business. Therefore, institutions should conduct advance planning and periodic testing to ensure that contingent funding sources are readily available when needed.

Establish Liquidity Event Management Processes

The CFP should provide for a reliable crisis management team and administrative structure, including realistic action plans used to execute the various elements of the plan for given levels of stress. Frequent communication and reporting among team members, the board of directors, and other affected managers optimize the effectiveness of a contingency plan during an adverse liquidity event by ensuring that business decisions are coordinated to minimize further disruptions to liquidity. Such events may also require the daily computation of regular liquidity risk reports and supplemental information. The CFP should provide for more frequent and more detailed reporting as the stress situation intensifies.

Establish a Monitoring Framework for Contingent Events.

Institution management should monitor for potential liquidity stress events by using early-warning indicators and event triggers. The institution should tailor these indicators to its specific liquidity risk profile. The early recognition of potential events allows the institution to position itself into progressive states of readiness as the event evolves, while providing a framework to report or communicate within the institution and to outside parties. Early-warning signals may include, but are not limited to, negative publicity concerning an asset class owned by the institution, increased potential for deterioration in the institution's financial condition, widening debt or credit default swap spreads, and increased concerns over the funding of off-balance-sheet items.

36. To mitigate the potential for reputation contagion, effective communication with counterparties, credit-rating agencies, and other stakeholders when liquidity problems arise is of vital importance. Smaller institutions that rarely interact with the media should have plans in place for how they will manage press inquiries that may arise during a liquidity event. In addition, groupwide contingency funding plans, liquidity cushions, and multiple sources of funding are mechanisms that may mitigate reputation concerns.

37. In addition to early-warning indicators, institutions that issue public debt, use warehouse financing, securitize assets, or engage in material over-the-counter derivative transactions typically have exposure to event triggers embedded in the legal documentation governing these transactions. Institutions that rely upon brokered deposits should also incorporate PCA-related downgrade triggers into their CFPs since a change in PCA status could have a material bearing on the availability of this funding source. Contingent event triggers should be an integral part of the liquidity risk monitoring system. Institutions that originate and/or purchase loans for asset securitization programs pose heightened liquidity risk concerns due to the unexpected funding needs associated with an early amortization event or disruption of warehouse funding. Institutions that securitize assets should have liquidity contingency plans that address these risks.

38. Institutions that rely upon secured funding sources also are subject to potentially higher margin or collateral requirements that may be triggered upon the deterioration of a specific portfolio of exposures or the overall financial condition of the institution. The ability of a financially stressed institution to meet calls for additional collateral should be considered in the CFP. Potential collateral values also should be subject to stress tests since devaluations or market uncertainty could reduce the amount of contingent funding that can be obtained from pledging a given asset. Additionally, triggering events should be understood and monitored by liquidity managers.

39. Institutions should test various elements of the CFP to assess their reliability under times of stress. Institutions that rarely use the type of funds they identify as standby sources of liquidity in a stress situation, such as the sale or securitization of loans, securities repurchase agreements, Federal Reserve discount window borrowing, or other sources of funds, should periodically test the operational elements of these sources to ensure that they work as anticipated. However, institutions should be aware that during real stress events, prior market access testing does not guarantee that these funding sources will remain available within the same time frames and/or on the same terms.

40. Larger, more complex institutions can benefit by employing operational simulations to test communications, coordination, and decision making involving managers with different responsibilities, in different geographic locations, or at different operating subsidiaries. Simulations or tests run late in the day can highlight specific problems such as difficulty in selling assets or borrowing new funds at a time when business in the capital markets may be less active.

Internal Controls

41. An institution's internal controls consist of procedures, approval processes, reconciliations, reviews, and other mechanisms designed to provide assurance that the institution manages liquidity risk consistent with board-approved policy. Appropriate internal controls should address relevant elements of the risk management process, including adherence to policies and procedures, the adequacy of risk identification, risk measurement, reporting, and compliance with applicable rules and regulations.

42. Management should ensure that an independent party regularly reviews and evaluates the various components of the institution's liquidity risk management process.

APPENDIX—OCC GUIDANCE ON BANK LIQUIDITY

The OCC has provided extensive supervisory guidance to national banks and bank examiners on liquidity risk management.⁷⁰ The OCC has emphasized the need for bank management and examiners to be attuned to the sensitivities of fund providers and to understand the key factors that increase a bank's liquidity risk:

Managing liquidity involves estimating present and future cash needs and providing for those needs in the most cost-effective way possible. Banks obtain liquidity from both sides of the balance sheet, as well as from off balance-sheet activities. A manager who attempts to control liquidity solely by adjustments on the asset side is potentially ignoring less costly sources of liquidity. Conversely, focusing solely on the liability side or depending too heavily on purchased wholesale funds can leave a bank vulnerable to market conditions and influences beyond its control. Effective liquidity managers consider the array of available sources when establishing and implementing their liquidity plans.

Bank management must understand the sensitivities of their funds providers, the funding instruments they use, the relationship of funding costs to asset yields, and any market or regulatory constraints on funding. In order to accomplish this, management must understand the volume, mix, pricing, cash flows, and risk exposures stemming from its bank's assets and liabilities, as well as other available sources of funds and potential uses of excess cash flow. Management must also be alert to the risks arising from concentrations in funding sources.

Liquidity managers must also understand that a bank's liquidity and liquidity risk profile can change quickly, and these changes may occur outside of management's control. In fact, the adequacy of a bank's liquidity position can be affected by a bank's operating environment or by the market's perception of that institution. A bank's liquidity position may be adequate under certain operating

⁷⁰ Office of the Comptroller of the Currency, Comptroller's Handbook: Liquidity (June 2012) (excerpts).

environments yet be insufficient under adverse environments. This is particularly true for a bank that is heavily reliant on wholesale or market based funding sources. During some adverse operating environments, a bank may see a considerable decline in the availability of funding, an increased need for funds, or a dramatic change in the timing of fund inflows or outflows. Therefore, it is critical for managers to determine the adequacy of liquidity under numerous adverse environments.

Key factors that increase an institution's liquidity risk include poor asset quality, high cash-flow volatility, low levels of liquid assets, high or rising funding costs when compared to the assets they fund, concentrations in funding sources, and dependence on credit- and rate-sensitive providers.

Effective liquidity management entails the following elements:

Management of operating liquidity: On an ongoing basis, assessing a bank's current and expected future needs for funds, and ensuring that sufficient funds or access to funds exists to meet those needs at the appropriate time.

Management of contingent liquidity: Providing for an adequate cushion to meet unanticipated cash flow needs that may range from high probability and low-impact events that could occur in daily operations to low-probability and high-impact events that occur less frequently but may significantly affect an institution's safety and soundness.

A financial institution's liquidity needs depend significantly on the balance sheet structure, product mix, and cash flow profiles of both on- and off balance-sheet obligations. External events and internal financial and operating risks (interest rate, credit, operational, legal, and reputation risks) can influence the liquidity profile of an institution.

Bank-specific factors include:

- deterioration in asset quality,
- events that affect public reputation or market perception (e.g., accounting scandals, adverse consumer or market events),
- deteriorating earnings performance,
- downgrade in a credit rating,
- aggressive balance-sheet growth, and
- breakdowns in internal systems or controls (fraud).

External factors or events include

- geographical—deteriorating local economic conditions,
- systemic—major changes in national or global economic conditions or dislocations in financial markets,
- financial sector - financial scandal or failure of major firms affecting public confidence,
- market-oriented—price volatility of certain types of assets in response to market events, and
- operational—disturbances to payment and settlement systems or local natural disasters.

Contribution of Balance Sheet Structure to Liquidity Risk

Banks should evaluate the cash flow characteristics, structure, and stability of each major asset and liability category to determine the effect on operating and contingent liquidity risk. This assessment, combined with an evaluation of the interrelationship of these asset and liability accounts, provides the basis for determining the quantity of liquidity risk in the institution.

The cash flow volatility of assets and how quickly they can be converted to cash without incurring unacceptable loss form the basis for evaluating the liquidity contained in a bank's asset base. Several factors influence this evaluation, including the credit, interest rate, and price risk profiles of the asset, as well as the accounting treatment. Exhibit 1 (following page) illustrates the primary assets found on a bank's balance sheet and their relative contribution to meeting a bank's liquidity needs.

Funding stability of liabilities and the ability to renew or replace them at favorable terms form the basis for assessing the liquidity risk in a bank's liabilities. The stability of a

bank's liabilities depends on many factors, including the level of deposit insurance, the degree of credit-risk sensitivity to the institution, and the level of market interest-rate sensitivity. Exhibit 2 (following page) illustrates the primary liabilities on a bank's balance sheet and the relative sensitivity of those funding sources to both interest-rate and credit risk.

Banks with large mismatches between liability maturities and asset maturities have greater earnings exposure to changes in interest rates. Changes in market conditions are often unpredictable and sometimes severe. These changes can make it difficult for a bank to secure funds, retain additional funding, and manage the maturity of its funding structure.

Banks that manage liquidity predominantly with liabilities, particularly volatile funding sources, require managers to plan strategies more fully and execute them more carefully than if a bank managed liquidity by relying principally on assets. In these institutions, the interrelationship between liabilities and the assets they fund is critical for sound liquidity risk management. For example, institutions that depend heavily on volatile liabilities with high rollover risk require a higher level of support from liquid assets. Banks that rely on volatile liabilities to fund assets that are less liquid exhibit lower credit quality, or produce less predictable cash flows and possess higher liquidity risk profiles. These banks require well-established funding strategies, such as back-up liquidity lines, contingent calls on equity capital, or a countervailing large, high quality securities portfolio. These banks face the risk that asset cash flows decline at the same time as liabilities mature and roll out of a bank. In addition, if assets with higher credit risk lead to credit quality deterioration and impair a bank's financial condition, some credit-sensitive funding providers may reduce or eliminate their funding to a bank.

Operating Liquidity

A key building block in managing liquidity risk is the estimation of cash inflows (sources of funds) and outflows (uses of funds) for each significant balance-sheet account, given a specific time period. For any given time period, assets and liabilities can have either a net positive or

negative impact on cash flows. Specific period aggregate funding mismatches can result in the institution lacking sufficient capacity to fund obligations in the normal course of business (funding gap). Effective management and control of the liquidity risk stemming from funding gaps depends heavily on the use of operational cash flow projections and the reasonableness and accuracy of the assumptions that are applied. Institution-specific factors that affect the development of cash flow assumptions include the following:

- Deteriorating asset quality
- Highly volatile or unpredictable asset amortization (prepayments), nonmaturity deposits, off-balance-sheet commitments (lines or letters of credit), and other estimated cash flows
- Unexpected fluctuations in loan demand or deposit balances
- Unanticipated new business due to poor internal management information systems (MIS) reporting and communication
- The inability of permanent takeout lenders to perform as expected.

In order to assess fully the impact of these factors on funding gaps and cash flow projections, management should develop multiple scenarios. These scenarios should include institution-specific risk (i.e., the risk of a credit rating downgrade), market risks such as a market-driven liquidity crisis, and a combination of the two.

Funding mismatches can expose an institution to significant liquidity risk that can be exacerbated by unexpected fluctuations in cash flows under both normal business conditions and stressful contingent events, including swings in collateral required to support off balance sheet derivative contracts. By estimating and reporting future balance-sheet cash flows, management can identify periodic funding mismatches and cash flow shortfalls and excesses. This allows bank management to take steps to generate funds from a bank's asset base or to obtain or attract additional liabilities before actual cash flow mismatches occur.

Asset-Based Liquidity Sources

Liquidity managers may look toward a bank's assets as a source for primary (operating liquidity) and secondary (contingent liquidity) funding. Asset-based liquidity sources include cash flows stemming from a bank's various asset classes, the use of assets as collateral for a variety of funding alternatives, or the securitization or liquidation of assets for cash.

Cash Flows

The primary source of funding stemming from a bank's asset base is the periodic principal and interest cash flows produced by the loan and investment securities portfolios. The cash flow schedules of a bank's assets can be based on their contractual maturity and are predictable and expected, or they may be adjusted by contractual options afforded to the counterparty and occur unexpectedly. A significant impact on a bank's liquidity position typically occurs when counterparties do not pay according to their contractual requirements because of credit problems or other issues.

Pledging of Assets

Financial institutions routinely pledge various types of assets to secure borrowings or line commitments. Secured or collateralized borrowings generally are more reliable sources of liquidity and are generally lower cost when compared with unsecured funding sources. Secured stand-by commitments are also a common form of liquidity provided by the pledging of assets. Common providers of secured funding are the Federal Home Loan Banks, the Federal Reserve discount window, and broker-dealers (repurchase agreements).

While pledging provides a lower cost and a more stable alternative to unsecured borrowings, banks must carefully manage the amount of assets available for pledging. A bank should have the ability to calculate all of its collateral positions, including assets currently pledged relative to the amount of security required and unencumbered assets available to be pledged. A bank's level of available collateral should be monitored by legal entity, by jurisdiction, and by currency exposure. Furthermore,

systems should be capable of monitoring shifts between intraday and overnight, or term collateral usage.

Although secured funding providers are less sensitive to a bank's condition and performance than unsecured creditors, credit risk exposure has a significant impact on the ultimate liquidity provided by pledged bank assets.

In addition, changes in the following factors may affect counterparty collateral requirements and may force a bank to increase the amount of assets required to secure funding:

- The credit quality, underwriting, or performance of pledged loans
- The liquidity or market value of pledged assets
- The bank's financial condition
- Collateral margin requirements
- The counterparty advance rates on various types of collateral
- The amount of borrowings or collateral pledged when compared with the overall size of the bank (e.g., total assets, total loans)
- Regulatory actions against the bank.

Liquidation of Assets

Banks obtain funds by reducing or liquidating assets. Most institutions incorporate asset liquidation into their ongoing management of operating liquidity. They also use the potential liquidation of a portion of their assets (generally, a portion of their loan or investment portfolio) as a contingent liquidity source under adverse liquidity circumstances. Assets must be unencumbered, be marketable, and have a low interest-rate and price-risk profile to be effective as a contingent liquidity source. The sale of less liquid assets usually requires a bank to engage in an active and ongoing sales program to achieve efficient transactions and favorable market pricing, which limits availability during times of stress.

Securitization of Assets

Asset securitization is another method that some banks use to fund their activities. Securitization involves the transformation of on-balance-sheet loans (e.g., auto, credit card, commercial, student, home equity, and mortgage) into

packaged groups of loans in various forms that are subsequently sold to investors. Depending on the business model employed, securitization proceeds can be a material source of ongoing funding and a significant tool for meeting future funding needs. However, for banks that have not previously used securitization as a funding tool, the administrative requirements for securitization may mean significant delays in obtaining funds. In addition, a bank without experience in using securitization may find that its underwriting and administrative policies and procedures do not meet market requirements or expectations.

In addition, banks must ensure that their securitization structures and activities comply with all applicable accounting and regulatory guidelines, including those that may be affected by the Dodd–Frank Wall Street Reform and Consumer Protection Act. These activities are sometimes complex and require strong risk management processes. If an institution relies significantly on securitization as a liquidity source, refer to the “Asset Securitization” booklet of the *Comptroller’s Handbook* for more information on how to examine these activities. The examination of securitization activities should be closely coordinated with the assessment of liquidity risk.

Liability-Based Liquidity Sources

Liability funding sources are typically characterized as retail or wholesale. Banks distinguish between retail and wholesale funding, because the two sources of funding have different sensitivities to credit risk and interest rates and react differently to changes in economic conditions and the financial condition of a bank.

Retail Deposits

Retail deposits from consumers and small businesses are often important and relatively stable sources of funds for banks. In many instances, the decision made by consumers and business owners to deposit funds in a bank is driven by service and relationship factors, and not merely by the rate of return.

Banks focusing on retail deposit generation can build a more diversified and stable funding base, one that is less sensitive to changes in market interest rates and a bank's financial condition. The protection afforded by Federal Deposit Insurance Corporation (FDIC) deposit insurance also provides insured banks with an advantage over other money market participants. During times of bank stress, insured depositors have proven to be a bank's most reliable funding source and, therefore, play an integral role in mitigating liquidity risk during crisis scenarios. Banks can generate interest-bearing retail deposits more quickly by offering interest rates significantly higher than local and national market levels. However, they risk substantially increasing their funding costs if existing customers switch their relationships to the new, higher-cost deposit products. In addition, any new funds generated by high interest rate deposits may prove highly rate sensitive, requiring a bank to match market rates to retain the funding. Noninterest costs can also be substantial. Costs from generating a large volume of new accounts can include personnel, advertising, and operating costs, as well as the costs associated with branch expansion.

Public or municipal deposits are another source for bank funding. Although similar to retail deposits, public deposits are usually in larger denominations, often placed by a professional money manager or through a bidding process and may require collateral in the form of high-quality investment securities. A bank may have existing financial relationships with local municipalities that give the bank a competitive advantage in attracting deposit accounts.

Nonetheless, public funds are generally more sensitive to interest rates than retail deposits and often require competitive rates at placement and subsequent rollover dates. Municipalities have a fiduciary responsibility for the safe placement of funds and typically are mandated to place funds only in banks that are sufficiently capitalized and in otherwise sound financial condition. Therefore, public funds are also more sensitive to the financial condition of the depository and may react to a bank's negative press or deteriorating financial condition more rapidly than retail depositors. Liquidity managers must consider these sensitivities of public-funds providers in their operational

and contingency planning activities. These products have become more complex over time.

Borrowed Funds

A bank can also generate funds through borrowings from various counterparties. Borrowed funds include secured and unsecured debt obligations across the maturity spectrum. In the short term, borrowed funds include purchased Federal Funds (Fed funds) and securities sold under agreements to repurchase (repos). Longer-term borrowed funds include various types of collateralized loans and the issuance of corporate debt.

Depending on their contractual characteristics and the behavior of fund providers, borrowed funds vary in maturity and availability because of their sensitivity to the perceived risk of the institution, general trends in interest rates, and other market factors.

A bank that relies on borrowed funds for ongoing or contingent funding must understand the credit standards of the entities lending to it. Some funds providers may be less sensitive to the financial condition of a bank, since the lenders are primarily focused on the quality and liquidity of collateral, and are looking to the pledged assets to ensure repayment. However, other funds providers, including sellers of overnight funds and the Federal Home Loan Banks, usually have credit policies that lead them to require alternative or additional collateral if the actual or perceived condition of the institution begins to deteriorate. They might also freeze or reduce funding provided to a bank that is experiencing a deteriorating financial condition. Bank management should determine the credit policies of key funds providers and use that information to estimate the amount of funding that would be available to a bank as its financial condition changes. This is an integral part of planning for funding contingencies.

Deposit Listing Services

A bank may use a national deposit listing service to raise both time and money market deposits. This source of funding can be convenient and usually involves minimal noninterest costs. A bank can also tailor the tenor of listed

deposits to meet its funding needs. However, it is sometimes difficult to control the volume of funds generated from listing services. Further, funds generated from these sources tend to be more rate sensitive than deposits raised locally, because the relationship with the depositor is based principally on the offering rate. Funding strategies that incorporate deposit listing services should include management systems designed to control these risks. Because the depositor relationship with a bank is motivated primarily through rates paid, deposits obtained through the use of a listing service have behavioral characteristics similar to deposits gathered through a broker. However, they generally do not meet the formal definition of a brokered deposit, because the service merely involves the listing of offering rates and does not employ the use of a third party to communicate with the customer.

Brokered Deposits

Brokered deposits are deposits that are obtained or placed through the use of or relationship with a third party (deposit broker). Banks obtain brokered deposits typically through arrangements with securities brokerage firms.

However, brokered deposits can be gathered through other means as well, including a deposit listing service. Brokered deposits can also be obtained through a sweep arrangement with an affiliated broker dealer. While sweep accounts pay a market rate, these accounts are established to maximize insurance coverage. The use of brokered deposits provides a means for banks to raise large amounts of funds quickly with a predetermined maturity structure. However, similar to deposits gathered via a listing service, the primary motivation for placing or depositing funds is the offering rate. These funds are highly rate sensitive. Thus, at maturity, a bank will need to match prevailing market rates to successfully roll over or renew the deposit.

Brokered deposits with short-term or immediate (e.g., money market deposit accounts) maturities are particularly at risk to rollover risk and should be closely monitored and managed. For institutions with material reliance on brokered deposits, management must identify and maintain committed alternative funding sources for short-term deposit maturities as conditions warrant. Funding strategies

should also address the potential higher costs associated with renewing or replacing funds garnered through a deposit broker. In addition, banks that do not meet regulatory requirements to be “well capitalized” (under Prompt Corrective Action 12 CFR 6) will find their ability to access or renew brokered funds restricted or eliminated, and both primary and contingent funding plans should incorporate this potential loss of funding.

Funding From the Financial Markets

Some banks, particularly larger domestic and multinational institutions, turn to the financial markets for funding. Today, financial markets provide funding to banks in a variety of ways, including asset purchases, repurchase agreements, and equity and debt issuances. These sources provide a broader and more diversified funding base to larger banks. Often these market-based funding programs, when conducted on a broad scale, can allow banks to access funds at costs below those associated with more traditional retail deposit gathering.

A bank’s reliance on the financial markets for funding, however, can also increase the level, uncertainty, and complexity of a bank’s liquidity risk profile. The acceptance of bank products and services by the financial markets can be affected by a multitude of factors not usually associated with more traditional bank funding strategies. In addition to the customary institution-specific liquidity risks associated with most wholesale funding regimes, funding from financial markets also exposes a bank to heightened systemic liquidity risk. Increased liquidity risks can arise from the volatility of global and domestic funds supply and demand, unexpected disruptions in normal market trading and pricing, settlement and operational interruptions, and pronounced adjustments in a market’s risk pricing and acceptance. Many financial market funding vehicles that remove assets from a bank’s balance sheet sometimes carry with them both contractual and noncontractual funding commitments. These noncontractual or implied commitments are usually not exercised during normal market conditions.

However, during market disruptions or times of stress, these commitments to financial investors and other market

participants may necessitate substantial and unexpected use of funds or require a bank to repurchase underlying assets. Often, the fulfillment of these non legally binding commitments is necessary to preserve the reputation of the institution and allow a bank continued access to that segment of the financial markets. When the quality and performance of these assets has deteriorated, this condition may elevate the issuing bank's liquidity risk profile.

When a bank relies on funding from the financial markets, both operating and contingent liquidity management and planning programs must incorporate strategies designed to mitigate these unique and sometimes complex liquidity risks.⁷¹

The OCC described the reasons why many banks increasingly have needed to look to alternative sources of funding to meet their liquidity needs:

Funding dynamics at community, midsize, and large banks, however, have evolved over time. Technological advances in the delivery of financial products and services, the removal of interstate banking restrictions, and the deregulation of interest rates paid on deposit accounts changed both depositor and banker behavior. Legislative reforms were intended to give depository institutions the tools to compete with other market participants for deposits, but they also increased competition among the banks themselves. The combination of these reforms and technological advances also made it easier for depositors, looking for better returns on their money, to leave their local markets. Consequently, in some cases, retail bank deposit growth did not keep pace with asset growth. Some banks became reliant on alternative deposit, nondeposit, and off balance-sheet funding sources to cover the shortfall in traditional retail deposit funding.

Changes in technology, product innovation, and funding dynamics create new challenges for liquidity managers. Intense competition and declining customer loyalty increase the rate sensitivity of traditional retail deposits. As banking customers are now using deposit accounts more as transaction vehicles than savings vehicles, thereby

⁷¹ *Id.* 7-19.

maintaining lower average excess balances, bankers can no longer rely upon historically inelastic depositor behavior. Thus, the reliance on alternative sources of funding from the wholesale and brokered markets exposes banks to more rate and liquidity sensitivity than the reliance on traditional retail deposits did. Moreover, many banks have increased their use of products with embedded optionality on both sides of the balance sheet, which makes it more challenging to manage the corresponding cash flows. Liquidity risk management systems and controls must keep pace with these changes and added complexities.

Given these changes in funding dynamics, liquidity management is more complex and requires a more robust risk management process. To effectively identify, measure, monitor, and control liquidity risk exposure, well-managed banks supplement traditional liquidity risk measures like static-balance-sheet ratios with more prospective analyses. Bankers and examiners should have, at a minimum, a sound understanding of a bank's

- projected funding sources and needs under a variety of market conditions.
- net cash flow and liquid asset positions given planned and unplanned balance sheet changes.
- projected borrowing capacity under stable conditions and under adverse scenarios of varying severity and duration.
- highly liquid asset and collateral position, including the eligibility and marketability of such assets under a variety of market environments.
- vulnerability to rollover risk.
- funding requirements for unfunded commitments over various time horizons.
- projected funding costs, as well as earnings and capital positions under varying rate scenarios and market conditions.⁷²

The OCC's supervisory booklet provides detailed guidance in the following key components of a sound liquidity risk management program for national banks:

⁷² Office of the Comptroller of the Currency, Comptroller's Handbook: Liquidity (June 2012) at 1-2.

- corporate governance and accountability.
- policies, procedures, and limits.
- risk measurement, monitoring, and reporting systems.
- intraday liquidity management.
- funding diversification.
- maintenance of a cushion of highly liquid assets.
- comprehensive contingency funding plans.
- internal controls.⁷³

With respect to funding diversification, the OCC's guidance states:

An institution should establish a funding strategy that provides effective diversification in the sources and tenor of funding. An institution should diversify available funding sources in the short-, medium- and long-term.

Diversification targets should be part of medium- to long-term funding plans and should be aligned with the budgeting and business planning process.

Funding plans should take into account correlations between sources of funds and market conditions. Management should also consider the funding implications of any government programs or guarantees that a bank uses. The desired diversification should include limits by counterparty, secured versus unsecured market funding, instrument type, securitization vehicle, and geographic market.

Institutions that rely on market-based funding sources should maintain an ongoing presence in their chosen funding markets and strong relationships with funds providers to promote effective diversification of funding sources.

An institution should regularly gauge its capacity to raise funds quickly from each source. The institution should identify the main factors that affect its ability to raise funds and monitor those factors closely to ensure that estimates of fund-raising capacity remain valid.

⁷³ *Id.* at 20.

An essential component of ensuring funding diversity is maintaining market access. Market access is critical for effective liquidity risk management, as this access affects the ability to both raise new funds and liquidate assets. A bank should identify and build strong relationships with current and potential investors, even in funding markets facilitated by brokers or other third parties.

Building strong relationships with various key providers of funding can give a bank insight into providers' behavior in times of bank-specific or market-wide shocks. Senior management should ensure that market access is being actively managed, monitored, and tested by the appropriate staff.

An institution should identify diversified alternative sources of funding that strengthen its capacity to withstand a variety of severe institution-specific and market-wide liquidity shocks. Depending on the nature, severity, and duration of the liquidity shock, potential sources of funding include, but are not limited to, the following actions:

Tactical actions

- Sale (either outright or through repurchase agreements) or pledging of liquid assets.
- Drawing-down committed facilities.
- Wholesale deposit growth.
- Lengthening maturities of new liabilities.

Strategic actions

- Retail deposit growth.
- Raising capital.
- Issuance of debt instruments.
- Sale of subsidiaries or lines of business.
- Asset securitization.⁷⁴

⁷⁴ *Id.* at 28-29.

APPENDIX—FED PROPOSAL FOR NEW LIQUIDITY REGIME AT LARGE BANK HOLDING COMPANIES

In 2012, the Federal Reserve proposed a new liquidity regime for bank holding companies with total consolidated assets of \$50 billion or more.⁷⁵ The following are excerpts from the Federal Register notice of the proposal addressing the key components of the proposed regime:

Board of Directors Duties

The proposed rule would impose several specific duties on the board of directors. First, the board of directors would be required to establish the covered company's liquidity risk tolerance at least annually. The proposed rule would define liquidity risk tolerance as the acceptable level of liquidity risk the covered company may assume in connection with its operating strategies. In determining the liquidity risk tolerance, the board of directors would be required to consider the covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk related factors. These considerations should help to ensure that the established liquidity risk tolerance will be appropriate for the business strategy of the covered company and its role in the financial system, and will reflect the covered company's financial condition and funding capacity on an ongoing basis.

The liquidity risk tolerance should reflect the board of directors' assessment of tradeoffs between the costs and benefits of liquidity. That is, inadequate liquidity can expose the covered company to significant financial stress and endanger its ability to meet contractual obligations. Conversely, too much liquidity can entail substantial opportunity costs and have a negative impact on the covered company's profitability. In establishing the covered company's liquidity risk tolerance, the Board would expect a covered company's board of directors to articulate the liquidity risk tolerance in such a way that all levels of management clearly would: (i) Understand the board of director's policy for managing the trade-offs between the

⁷⁵ 77 Fed. Reg. 594 (Jan. 5, 2012) (Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies, proposed rule) (excerpts).

risk of insufficient liquidity and generating profit; and (ii) properly apply this approach to all aspects of liquidity risk management throughout the organization. To ensure that a covered company is managed in accordance with the liquidity risk tolerance, the proposed rule would require the board of directors to review information provided by senior management at least semi-annually to determine whether the covered company is managed in accordance with the established liquidity risk tolerance.

Second, the risk committee or a designated subcommittee of the risk committee would be required to review and approve the liquidity costs, benefits, and risk of each significant new business line and each significant new product before the covered company may implement the line or offer the product. In connection with this review, the risk committee or a designated subcommittee would be required to consider whether the liquidity risk of the new strategy or product under current conditions and under a liquidity stress is within the established liquidity risk tolerance. At least annually, the risk committee or a designated subcommittee would be required to review approved significant business lines and products to determine whether each line or product has created any unanticipated liquidity risk, and to determine whether the liquidity risk of each line or product continues to be within the established liquidity risk tolerance.

Third, the proposed rule would require the board of directors to review and approve the covered company's CFP at least annually and whenever the covered company materially revises the plan. As discussed below, the CFP is the covered company's compilation of policies, procedures, and action plans for managing liquidity stress events.

Fourth, the risk committee or a designated subcommittee would be required to conduct the following reviews and approvals at least quarterly:

(i) A review of cash flow projections produced under section 252.55 of the proposed rule that use time periods in excess of 30 days to ensure that the covered company's liquidity risk is within the covered company's established liquidity risk tolerance;

(ii) A review and approval of the liquidity stress testing described in section 252.56 of the proposed rule, including the covered company's stress testing practices, methodologies, and assumptions. The risk committee or a designated subcommittee would also be required to conduct this review and approval whenever the covered company materially revises its liquidity stress testing;

(iii) A review of the liquidity stress testing results produced under section 252.56 of the proposed rule;

(iv) Approval of the size and composition of the liquidity buffer established under section 252.57 of the proposed rule;

(v) A review and approval of the specific limits on potential sources of liquidity risk established under section 252.59 of the proposed rule, and a review of the covered company's compliance with those limits; and

(iv) A review of liquidity risk management information necessary to identify, measure, monitor, and control liquidity risk and to comply with the new liquidity rules.

In addition, the risk committee or a designated subcommittee would be required to periodically review the independent validation of the stress tests produced under section 252.56(c)(2)(ii) of the proposed rule.

The proposed rule establishes minimum requirements governing the frequency of certain reviews and approvals. It also would require the board of directors (or the risk committee) to conduct more frequent reviews and approvals as market and idiosyncratic conditions warrant. The risk committee or a designated subcommittee would also be required to establish procedures governing the content of senior management reports on the liquidity risk profile of the covered company and other information described in the senior management responsibilities section below.

Senior Management Responsibilities

Under the proposed rule, senior management of a covered company would be required to establish and implement

liquidity risk management strategies, policies and procedures. This would include overseeing the development and implementation of liquidity risk measurement and reporting systems, the cash flow projections, the liquidity stress testing, the liquidity buffer, the CFP, the specific limits, and the monitoring procedures required under the proposed rule.

Senior management would also be required to report regularly to the risk committee or designated subcommittee thereof on the liquidity risk profile of the covered company, and to provide other relevant and necessary information to the board of directors (or risk committee) to facilitate its oversight of the liquidity risk management process. As noted above, the proposed rule would require the risk committee or a designated subcommittee to establish procedures governing the content of management reports on the liquidity risk profile of the covered company and other information regarding compliance with the proposed rule. The Board expects that management would be required under these procedures to report as frequently as conditions warrant, but no less frequently than quarterly.

Independent Review

Under the proposed rule, a covered company would be required to establish and maintain an independent review function to evaluate its liquidity risk management. Under the proposal, this review function must be independent of management functions that execute funding (the treasury function). The independent review function would be required to review and evaluate the adequacy and effectiveness of the covered company's liquidity risk management processes regularly, but no less frequently than annually. It would also be required to assess whether the covered company's liquidity risk management complies with applicable laws, regulations, supervisory guidance, and sound business practices, and to report statutory and regulatory noncompliance and other material liquidity risk management issues to the board of directors (or the risk committee) in writing for corrective action.

An appropriate internal review conducted by the independent review function should address all relevant elements of a covered company's risk management process,

including adherence to its own policies and procedures, and the adequacy of its risk identification, measurement, and reporting processes. Personnel conducting these reviews should seek to understand, test, document, and evaluate the risk management processes, and recommend solutions to any identified weaknesses.

Cash Flow Projections

Comprehensive projections of a covered company's cash flows from the company's various operations are a critical tool for managing liquidity risk. To ensure that a covered company has a sound process for identifying and measuring liquidity risk, the proposed rule would require a covered company to produce comprehensive projections that forecast cash flows arising from assets, liabilities, and off-balance sheet exposures over appropriate time periods, and to identify and quantify discrete and cumulative cash flow mismatches over these time periods. The proposed rule would specifically require the covered company to provide cash flow projections over the short-term and long-term time horizons that are appropriate to the covered company's capital structure, risk profile, complexity, activities, size and other risk-related factors.

To make sure that the cash flow projections will analyze liquidity risk exposure to contingent events, the proposed rule would require that projections must include cash flows arising from contractual maturities, as well as cash flows from new business, funding renewals, customer options, and other potential events that may impact liquidity. Static projections based on the contractual cash flows of assets, liabilities, and off-balance sheet items are helpful in identifying liquidity gaps. However, such static projections may inadequately quantify important aspects of potential liquidity risk because these projections ignore new business, funding renewals, customer options, and other contingent events that have a significant impact on a covered company's liquidity risk profile. A dynamic analysis that incorporates management's reasoned assumptions regarding the future behavior of assets, liabilities, and off-balance sheet items in projected cash flows is far more useful than a static projection in identifying potential liquidity risk exposure.

Under the proposed rule, a covered company would be required to develop cash flow projections that provide sufficient detail to reflect its capital structure, risk profile, complexity, activities, size, and other appropriate risk related factors. Such detail may include projections broken down by business line, legal entity, or jurisdiction, and cash flow projections that use more time periods than the two minimum time periods that would be required under the rule.

The proposed rule states that a covered company must establish a robust methodology for making its cash flow projections, and must use reasonable assumptions regarding the future behavior of assets, liabilities, and off-balance sheet exposures in the projections. Given the critical importance that the methodology and underlying assumptions play in liquidity risk measurement, the covered company would also be required to adequately document the methodology and assumptions. In addition, the Board expects senior management to periodically review and approve the assumptions used in the cash flow projections to make sure that they are reasonable and appropriate.

Liquidity Stress Testing

While financial companies typically manage their liquidity under normal circumstances with regular sources of liquidity readily available, they should also be prepared to manage liquidity under adverse conditions in which liquidity sources may be limited or nonexistent. Insufficient consideration of liquidity management under the conditions that arose during the financial crisis was a major contributor to the severe liquidity problems many financial companies faced at the time. Accordingly, rigorous and regular stress testing and scenario analysis, combined with comprehensive information about an institution's funding position, is an important tool for effective liquidity risk management that should reduce the risk of a firm's failure due to adverse liquidity conditions.

To promote preparedness for adverse liquidity conditions, the proposed rule would require the covered company to regularly stress test its cash flow projections by identifying liquidity stress scenarios and assessing the effects of these

scenarios on the covered company's cash flow and liquidity. By considering how adverse events, conditions, and outcomes, including extremes, affect the covered company's exposure to liquidity risk, a covered company can identify vulnerabilities, quantify the depth, source, and degree of potential liquidity strain, and analyze the possible impacts. Under the proposed rule, the covered company would use the results of the stress testing to determine the size of its liquidity buffer, and would incorporate information generated by stress testing in the quantitative component of the CFP.

The proposed rule would require that liquidity stress testing comprehensively address a covered company's activities, exposures, and risks, including off-balance sheet exposures. To satisfy this requirement, stress testing would have to address the covered company's full set of activities, exposures and risks, both on- and off-balance sheet, and address non-contractual sources of risks, such as reputational risks. For example, stress testing should address potential liquidity issues arising from the covered company's use of sponsored vehicles that issue debt instruments periodically to the markets, such as asset-backed commercial paper and similar conduits. Under stress scenarios, the covered company may be contractually required, or compelled in the interest of mitigating reputational risk, to provide liquidity support to such a vehicle.

The proposed rule would require a covered company to conduct the liquidity stress testing at least monthly. In addition to monthly stress testing, a covered company should have the flexibility to conduct "ad hoc" stress testing to address rapidly emerging risks or consider the impact of sudden events. Accordingly, the proposed rule specifies that the covered company must have the ability to perform stress testing more frequently than monthly, and the ability to vary underlying assumptions as conditions change. To facilitate effective supervision of the sufficiency of a covered company's liquidity management, under the proposed rule, a covered company may be required by the Federal Reserve to perform additional stress testing as conditions relating to the institution or the markets generally may warrant, or to address other supervisory concerns. The Federal Reserve may, for

example, require a covered company to perform additional stress testing where there has been a significant deterioration in the covered company's earnings, asset quality, or overall financial condition; are negative trends or heightened risk associated with a particular product line; or are increased concerns over the covered company's funding of off-balance sheet exposures.

Effective stress testing should include scenario analysis that uses historical and hypothetical scenarios to assess the impact on liquidity of various events and circumstances, including extremes. Effective liquidity stress testing should also employ a range of stress scenarios involving macroeconomic, market-wide, and idiosyncratic events, and consider interactions and feedback effects. Accordingly, the proposed rule states that a covered company's stress testing must incorporate a range of stress scenarios that may significantly affect the covered company's liquidity, taking into consideration its on- and off-balance sheet exposures, business lines, organizational structure, and other characteristics. At a minimum, the proposed rule would require a covered company to incorporate stress scenarios to account for market stress, idiosyncratic stress, and combined market and idiosyncratic stresses. Additional scenarios should be used as needed to ensure that all of the significant aspects of liquidity risks to the covered company have been modeled. The proposed rule would also require that the stress scenarios address the potential impact of market disruptions on the covered company, and the potential actions of market participants experiencing liquidity stresses under the same market disruption.

Under the proposed rule, a covered company's liquidity stress scenarios must be forward-looking and incorporate a range of potential changes to a covered company's exposures, activities, and risks as well as changes to the broader economic and financial environment. To meet this standard, the stress tests would need to be sufficiently dynamic to incorporate changes in the covered company's on- and off-balance sheet activities, portfolio composition, asset quality, operating environment, business strategy, and other risks that may arise over time from idiosyncratic events, macroeconomic and financial market developments, or some combination of thereof. The stress tests should

look beyond assumptions based only on historical data, and incorporate new events and challenge conventional assumptions.

Effective liquidity stress testing should be conducted over a variety of different time horizons to adequately capture rapidly developing events, and other conditions and outcomes that may materialize in the near or long term. To make sure that a covered company's stress testing captures such events, condition, and outcomes, the proposed rule would require that the covered company's stress scenarios use a minimum of four time horizons including an overnight, a 30-day, a 90-day, and a one-year time horizon. A covered company may be required to use more time horizons where necessary to reflect the covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk-related factors.

The proposed rule further provides that liquidity stress testing must be tailored to, and provide sufficient detail to reflect a covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk-related factors. This requirement is intended to ensure that stress testing will be tied directly to the covered company's business profile and the regulatory environment in which the covered company operates, and will address relevant risk areas, provide for the appropriate level of aggregation, and capture all appropriate risk drivers, internal and external influences, and other key considerations that may affect the covered company's liquidity position. This may require analyses by business line, legal entity, or jurisdiction, or stress scenarios that use time horizons in addition to the minimum number described above.

The proposed rule would require a covered company to incorporate certain assumptions designed to ensure that stress testing will provide relevant information to support the establishment of the liquidity buffer (see section 252.56(b)(4) of the proposed rule). As discussed below, the liquidity buffer is composed of highly liquid assets that are unencumbered, and is designed to meet projected net cash outflows and the projected loss or impairment of existing funding sources for 30 days during a range of liquidity stress scenarios. To reflect this design, the proposed rule would require that the covered company must assume that,

for the first 30 days of a liquidity stress scenario, only highly liquid assets that are unencumbered may be used as cash flow sources to meet projected funding needs. For time periods beyond the first 30 days of a liquidity stress scenario, highly liquid assets that are unencumbered and other appropriate funding sources may be used.

A covered company's liquidity stress testing should account for deteriorations in asset valuations when there is market stress. Accordingly, the proposed rule would require the covered company to impose a discount to the fair market value of an asset that is used as a cash flow source to offset projected funding needs in order to reflect any credit risk and market volatility of the asset. The proposed rule would also require that sources of funding used to generate cash to offset projected funding needs be sufficiently diversified throughout each stress test time horizon. Thus, if a covered company holds high quality assets other than cash and securities issued by the U.S. government, a U.S. government agency, or a U.S. government-sponsored entity, the assets should be diversified by collateral, counterparty, or borrowing capacity, and other liquidity risk identifiers.

The proposed rule would impose various process and system requirements for stress testing. Specifically, a covered company would be required to establish and maintain policies and procedures that outline its liquidity stress testing practices, methodologies, and assumptions; detail the use of each stress test employed; and provide for the enhancement of stress testing as risks change and techniques evolve. The proposed rule also states that a covered company must have an effective system of control and oversight over the stress test function to ensure that each stress test is designed in accordance with the rule, and the stress process and assumptions are validated. The validation function must be independent of functions that develop or design the liquidity stress testing, and independent of management functions that execute funding (e.g., the treasury function).

In addition, the proposed rule would require a covered company to rely on reasonably high-quality data and information to produce creditable outcomes. Specifically, the proposed rule would require that the covered company

must maintain management information systems and data processes sufficient to enable it to effectively and reliably collect, sort, and aggregate data and other information related to liquidity stress testing.

Liquidity Buffer

To withstand liquidity stress under adverse conditions, a company generally needs a sufficient supply of liquid assets that can be sold or pledged to obtain funds. During the financial crisis, financial companies that experienced severe liquidity difficulties often held insufficient liquid assets to meet their liquidity needs as market sources of funding were severely curtailed. The BCBS's LCR standard was developed to promote short-term resilience of a bank's liquidity risk profile by ensuring that it has sufficient high-quality liquid assets to survive an adverse stress scenario lasting for one month, providing time for appropriate corrective actions to be taken by management or supervisors, or to allow the institution to be resolved in an orderly way.

Consistent with the effort towards developing a comprehensive liquidity framework that would eventually incorporate the LCR standard, the proposed rule, in addition to requiring stress tests as described above, would require a covered company to continuously maintain a liquidity buffer of unencumbered highly liquid assets sufficient to meet projected net cash outflows and the projected loss or impairment of existing funding sources for 30 days over a range of liquidity stress scenarios.

In addition to using the results of the liquidity stress testing to size a covered company's liquidity buffer, the proposed rule would require that the liquidity buffer would also be aligned to reflect the covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk related factors, as well as the covered company's established liquidity risk tolerance. These factors, however, could not justify reducing the buffer to a point where it would be insufficient to meet projected net cash outflows and the projected impairment of existing funding sources for 30 days under the range of liquidity stress scenarios incorporated into its stress testing. As explained above, under the proposal, the risk committee or

a designated subcommittee of the risk committee would be required to approve the size and composition of the liquidity buffer at least quarterly.

The proposed rule limits the type of assets that may be included in the buffer to highly liquid assets that are unencumbered. The definition of highly liquid assets would ensure that the assets in the liquidity buffer can easily and immediately be converted to cash with little or no loss of value. Thus, cash or securities issued or guaranteed by the U.S. government, a U.S. government agency, or a U.S. government-sponsored entity are included in the proposed definition of highly liquid assets. In addition, the proposed rule includes criteria that may be used to identify other assets that could be included in the buffer as highly liquid assets. Specifically, the proposed definition of highly liquid assets includes any other asset that a covered company demonstrates to the satisfaction of the Federal Reserve:

(i) Has low credit risk (low risk of default) and low market risk (little or no price volatility);

(ii) Is traded in an active secondary two-way market that has observable market prices, committed market makers, a large number of market participants, and a high trading volume; and

(iii) Is a type of asset that investors historically have purchased in periods of financial market distress during which liquidity is impaired (flight to quality). For example, certain “plain vanilla” corporate bonds (that is, bonds that are neither structured products nor subordinated debt) issued by a non-financial company with a strong financial profile have been reliable sources of liquidity in the repurchase and sale market during past stressed conditions. Assets with the above characteristics could, as proposed, meet the definition of a highly liquid asset.

The highly liquid assets in the liquidity buffer should be readily available at all times to meet a covered company's liquidity needs.

Contingency Funding Plan

The proposed rule would require a covered company to establish and maintain a CFP. A CFP is a compilation of policies, procedures, and action plans for managing liquidity stress events. The objectives of the CFP are to provide a plan for responding to a liquidity crisis, to identify alternate liquidity sources that a covered company can access during liquidity stress events, and to describe steps that should be taken to ensure that the covered company's sources of liquidity are sufficient to fund its operating costs and meet its commitments while minimizing additional costs and disruption.

The proposed rule states that a covered company must establish and maintain a CFP that sets out the covered company's strategies for addressing liquidity needs during liquidity stress events. Under the proposed rule, the CFP would be required to be commensurate with the covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk related factors, and established liquidity risk tolerance. A covered company would be required to update the CFP at least annually or whenever changes to market and idiosyncratic conditions warrant an update.

Under the proposed rule, the CFP includes four components: a quantitative assessment, an event management process, monitoring requirements, and testing requirements. * * * *

Specific Limits

To enhance management of liquidity risk, the proposed rule would require a covered company to establish and maintain limits on potential sources of liquidity risk, including three specified sources of liquidity risk. The size of each limit must reflect the covered company's capital structure, risk profile, complexity, activities, size, and other appropriate risk related factors, and established liquidity risk tolerance. The covered company would be required to establish limits on:

(i) Concentrations of funding by instrument type, single counterparty, counterparty type, secured and unsecured funding, and other liquidity risk identifiers.

(ii) The amount of specified liabilities that mature within various time horizons.

(iii) Off-balance sheet exposures and other exposures that could create funding needs during liquidity stress events. Such exposures may be contractual or non-contractual exposures, and include such liabilities as unfunded loan commitments, lines of credit supporting asset sales or securitizations, collateral requirements for derivative transactions, and a letter of credit supporting a variable demand note. * * * *

Monitoring

The proposed rule would require a covered company to monitor liquidity risk related to collateral positions, liquidity risks across the enterprise, and intraday liquidity positions. In addition, the covered company would be required to monitor compliance with the specific limits established under [the rule]. * * * *

Documentation

The proposed rule would require a covered company to adequately document all material aspects of its liquidity risk management processes and its compliance with the requirements of the proposed rule, and submit such documentation to the risk committee. Material aspects of its liquidity risk management process would include, but would not be limited to, the methodologies and material assumptions used in cash flow projections and the liquidity stress testing, and all elements of the comprehensive CFP. The covered company must make this documentation available to the Federal Reserve upon request.

APPENDIX—PUBLIC COMPANY FILINGS

Public company filings by bank holding companies indicate that they rely on a variety of sources of funding. Bank of America Corporation, for example, described its sources of funding as follows:

We maintain excess liquidity available to Bank of America Corporation, or the parent company, and selected subsidiaries in the form of cash and high-quality, liquid, unencumbered securities. These assets, which we call our Global Excess Liquidity Sources, serve as our primary means of liquidity risk mitigation. Our cash is primarily on deposit with central banks, such as the Federal Reserve. We limit the composition of high-quality, liquid, unencumbered securities to U.S. government securities, U.S. agency securities, U.S. agency MBS and a select group of non-U.S. government and supranational securities. We believe we can quickly obtain cash for these securities, even in stressed market conditions, through repurchase agreements or outright sales. We hold our Global Excess Liquidity Sources in entities that allow us to meet the liquidity requirements of our global businesses, and we consider the impact of potential regulatory, tax, legal and other restrictions that could limit the transferability of funds among entities. * * * *

Diversified Funding Sources. We fund our assets primarily with a mix of deposits and secured and unsecured liabilities through a globally coordinated funding strategy. We diversify our funding globally across products, programs, markets, currencies and investor groups.

We fund a substantial portion of our lending activities through our deposits, which were \$1.04 trillion and \$1.03 trillion at March 31, 2012 and December 31, 2011. Deposits are primarily generated by our *CBB*, *GWIM* and *Global Banking* segments. These deposits are diversified by clients, product type and geography and the majority of our U.S. deposits are insured by the FDIC. We consider a substantial portion of our deposits to be a stable, low-cost and consistent source of funding. We believe this deposit funding is generally less sensitive to interest rate changes, market volatility or changes in our credit ratings than wholesale funding sources. Our lending activities may also

be financed through secured borrowings, including securitizations with GSEs, the FHA and private-label investors, as well as FHLB loans.

Our trading activities in broker/dealer subsidiaries are primarily funded on a secured basis through securities lending and repurchase agreements and these amounts will vary based on customer activity and market conditions. We believe funding these activities in the secured financing markets is more cost efficient and less sensitive to changes in our credit ratings than unsecured financing. Repurchase agreements are generally short-term and often overnight. Disruptions in secured financing markets for financial institutions have occurred in prior market cycles which resulted in adverse changes in terms or significant reductions in the availability of such financing. We manage the liquidity risks arising from secured funding by sourcing funding globally from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate.

We reduced unsecured short-term borrowings at the parent company and broker/dealer subsidiaries, including commercial paper and master notes, to relatively insignificant amounts in 2011. During the three months ended March 31, 2012, securities loaned or sold under agreements to repurchase increased due to an increase in trading account assets as a result of customer demand.⁷⁶

⁷⁶ Bank of America March 31, 2012 10-Q.