

# Reforming Money Market Funds

## A Proposal by the Squam Lake Group\*

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In 2010, the U.S. Securities and Exchange Commission tightened the risk requirements for assets held by money market funds in response to the run on the Reserve Primary Fund, and severe redemptions from other money-market funds, that followed the collapse of Lehman in September 2008. Despite the improvements represented by the resulting new version of Rule 2a-7, we believe that money market funds continue to pose significant systemic risk. In our view, funds based on a so-called “stable” net asset value, described below, should meet a regulatory buffer requirement that we outline in this note. The proposed buffer would lower the risk of destructive runs by significantly lowering the risk that a money market fund could “break the buck,” and would better align the incentives of fund managers with the interests of the public in reducing systemic risk.

Our principal concern is the industry norm of a “stable” net asset value (NAV), by which purchases and redemptions of money market funds occur at a price equal to the per-share amortized cost of the fund’s assets, rounded to the nearest penny. Under normal conditions, this rounding implies a purchase or redemption price of one dollar per share. If, however, investors in a money market fund fear that the actual market value of fund assets may be less than one dollar per share, or that this could easily happen in the near future, then they have an incentive to redeem their shares, and to do so before the rounded NAV per share drops below one dollar, an event known as “breaking the buck.” This incentive to run is exacerbated by the knowledge that the first investors to run have less risk than those that follow because redemptions at one dollar per share dilute the claims of unredeemed shares whenever the actual NAV is less than one dollar. A run can be further accelerated by a lack of transparency of the actual NAV and by fears that large sudden redemptions from a fund can only be met through a fire sale of its assets. The problem is worsened because the asset holdings of money market funds with similar objectives are likely to be similar, so that fire sales from one fund are likely to be accompanied by fire sales of other funds. For example, in the two-week period following the failure of Lehman, net outflows

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from a subset of prime money market funds tracked by Moody's exceeded \$400 billion, almost entirely through redemptions by institutional investors, who are prone to run for cover much more quickly than are retail investors.<sup>1</sup> During the same period, money market funds dedicated to holding only government securities experienced net *inflows* of over \$225 billion, again largely because of the quick decisions of institutional investors, who account for over 65% of investments in money market funds.

The potential for a run on money market funds is a systemic risk. A large fire sale of assets held by money market funds could destabilize the markets for these assets. Investments in U.S. prime stable-NAV money market funds and similar European "CNAV" money market funds now total over \$2 trillion. Industry concentration has increased significantly, to the point that the top 5 U.S. fund managers now account for about 50% of the U.S. total. In the event of a run on money market funds, systemically important borrowers such as large securities dealers could suddenly lose access to a significant source of financing, as happened following the fall of Lehman in 2008. The commercial paper market essentially stopped functioning and Lehman experienced a run by money market funds, who typically buy the commercial paper of large banks and lend overnight to dealers through tri-party repurchase agreements.<sup>2</sup> A run on money market funds could therefore set off fire sales of securities by dealers and, potentially, the failures of systemically important financial institutions. The withdrawal of funding could also lead large financial firms to reduce their lending.

Part of the government's response to the massive redemptions from money market funds that occurred in the wake of Lehman's failure was to guarantee that money market fund investors could redeem at one dollar per share.<sup>3</sup> If money market fund managers believe that such guarantees will be forthcoming in response to any systemic event, they will have incentives to take greater risks than is prudent from a systemic perspective. Moreover, if investors also believe that their money market fund investments are protected in a systemic event, they will overinvest in money market funds, thereby increasing the magnitude of the systemic risk. And while money market fund managers and investors may believe that they will be protected, it is always possible that they will not be and that a run on money market funds succeeds in destabilizing the financial system, while the government stands by either because it cannot or will not intervene. Indeed, Treasury's program to protect money market funds was outlawed by the Emergency Economic Stabilization Act of 2008, the legislation that created the Troubled Asset Relief Program. Whether there are other programs that could be used to stabilize money market funds is an open question.

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<sup>1</sup> From Moody's data, over the period from September 9, 2008 to September 23, 2008, holdings by institutional investors in prime money market funds dropped from \$1,330 billion to \$948 billion, while holdings by retail investors declined from \$755 billion to \$727 billion. As a matter of disclosure, one of the members of the Squam Lake Group is a member of the board of directors of Moody's Corporation.

<sup>2</sup> See the "The Trustee's Preliminary Investigation Report and Recommendations," United States Bankruptcy Court, Southern District of New York, in *Lehman Brothers Inc., Debtor*, and "Report of Anton R. Valukas, Examiner," in *Lehman Brothers Holdings Inc., et al., Debtors*, United States Bankruptcy Court, Southern District of New York.

<sup>3</sup> Details on the Treasury Money Market Guarantee program, announced on September 19, 2008, are available at <https://ustreas.gov/press/releases/hp1147.htm>. The program expired on September 18, 2009.

In the past, without the prospect of government guarantees, whenever money market funds threatened to break the buck, it had been common for their managers to bail them out in order to preserve the franchise values of their fund management businesses. Between August 2007 and December 31, 2009, at least 36 U.S. and 26 European money market funds received support from their sponsor or parent<sup>4</sup> because of losses incurred on their holdings of distressed or defaulted assets, as well as the costs of meeting the redemption demands of investors through sales of assets. Going forward, if sponsors believe that their funds will receive government support, their incentive to bail out their own funds may be substantially reduced, particularly given the squeeze on profitability associated with exceptionally low money-market interest rates.

We can envision two broad ways of addressing the systemic risks created by stable-NAV funds. First, and most directly, regulation could simply require that all money market funds have a variable NAV. In effect, this would force any fund that holds risky assets to be fully transparent about the evolution of these risks—it would no longer be possible to present the performance of risky investments as though they are riskless. While we believe that this “floating NAV” alternative has substantial advantages, the fund management industry has spoken out strongly against it. The industry argues that investors derive significant operating, accounting, and tax management benefits from the ability to transact at a fixed price.<sup>5</sup> In our view, the magnitude of these benefits—particularly from a social perspective—remains an important open question. We have not seen any analysis of the value of these benefits to money market fund investors relative to the cost to the public of the associated systemic risk. Another source of uncertainty comes from the potential impacts on other types of financial institutions. If investors strongly prefer stable-NAV type products, then requiring that all funds have a floating NAV might induce investors to shift their investments into bank deposits as a substitute for stable-NAV money market funds. Because the bank deposits of large institutional investors are uninsured, this could simply move the threat of runs from money market funds to the banking sector. Given that banks are less transparent than money market funds, the likelihood of a damaging run could theoretically increase as a result of this shift. Again, this possibility is difficult to assess empirically.

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<sup>4</sup> See “Sponsor Report to Key Money Market Funds,” by Henry Shilling, Moody’s Investor Service, August 9, 2010. The forms of support included capital contributions, purchases of distressed securities at par, letters of credit, capital support agreements, and letters of indemnity or performance guarantees.

<sup>5</sup> See “Report of the Money Market Working Group,” Investment Company Institute, March 17, 2009. With respect to tax issues, the Money Market Working Group writes: “With a floating NAV, investors could be required to track the amount and timing of all money market fund purchases and sales, capital gains and losses, and share cost basis. To be sure, investors already face these burdens in connection with investments in long-term mutual funds. But most investors do not trade in and out of long-term mutual funds on a frequent basis, as many do with money market funds. Thus, if money market funds had a floating NAV, all share sales become tax-reportable events, potentially greatly magnifying investors’ tax and recordkeeping burdens.” As for financial accounting costs, “companies would face the additional burden of having to mark to market the value of their money market fund shares. Corporate treasurers would also have to track the costs of their shares and determine how to match purchases and redemptions for purposes of calculating gains and losses for accounting and tax purposes. Moreover, under the new treatment, companies could not enter and reconcile cash transactions nor calculate the precise amount of operating cash on hand until the money market fund’s NAV became known at the end of the day, creating additional disincentives for corporations to use money market funds for cash management purposes.” The Money Market Working Group also details some operational and legal difficulties that would confront certain investors in stable-NAV funds if these funds did not exist. The Money Market Working Group (2009) also points out that floating-NAV instruments, such as “ultra-short” bond funds and certain French floating-NAV money market funds were not immune from substantial sudden redemptions during the financial crisis.

Thus, as an alternative to floating NAV, a second broad approach, which we focus on below, preserves the stable NAV structure but enhances its safety by requiring sponsors to establish contractually secure buffers that could absorb at least moderate investment losses to their money market fund investors. This is akin to a capital requirement for stable-NAV funds. The President's Working Group Report (2010) describes various alternatives, including some forms of liquidity facility or insurance that are consistent in spirit with this approach, but it does not make a specific recommendation.<sup>6</sup>

### **Buffering Stable-NAV Money Market Funds**

The following suggested buffer requirement for stable-NAV funds could be met via a number of alternative contractual approaches. The premise behind these suggestions is that Rule 2a-7 sufficiently restricts the investments of money market funds that the full set of restrictions imposed on banks need not be imposed on money market funds.

Proposed buffer requirement for stable-NAV funds:

*The manager of a stable-NAV money market fund must provide dedicated liquid financial resources that, in combination with those represented by the assets of the fund class investors, are sufficient to achieve a net buffer of "X" per dollar of net asset value. These additional resources are to be drawn upon as needed to support fund redemptions at one dollar per share until the fund converts to a floating-NAV or until the buffer resources are exhausted. That is, at the end of each business day, the combined resources available to fund investors represented by the sum of dedicated additional sources and the previous day's marked-to-market per-share value of the fund's assets must exceed 1+X per share held as of the end of the current day. The fund must convert to a floating-NAV fund within a regulatory transition period, such as 60 days, in the event that the fund manager falls out of compliance with this buffer requirement.*

Some potential alternative forms of buffers include:

1. Federal Reserve deposits, contractually committed to buffering the fund to the point of liquidation or conversion to a floating-NAV fund, at which point any residual deposits can be

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<sup>6</sup> See "Report of the President's Working Group on Financial Markets: Money Market Fund Reform Options," October 2010, which suggests that money market funds continue to pose systemic risk. Among the alternative policies described in the President's Working Group Report are: conversion of all funds to floating NAV; a private or public insurance scheme for stable-NAV funds; a rule by which large redemptions would be paid in kind (that is, with a portfolio of assets held by the fund); a two-tier system of both floating-NAV and stable-NAV funds under which stable-NAV funds would be required to have some support mechanism; a two-tier system under which stable-NAV funds are only available to retail investors; a rule forcing stable-NAV funds to convert to special purpose banks, holding capital and having access to lender of last resort facilities, and for which depositors would have some insurance coverage.

reclaimed by the original depositor, which could be the fund management firm or investors in a separate investment vehicle.<sup>7</sup>

2. Liquid assets such as Treasury bills held in a segregated custody account that is contractually committed to buffering the fund, as in the previous example.
3. Insurance by a party that meets the fund regulator's standard for creditworthiness and liquidity.
4. "Equity tranche" claims on a pool of "2a-7 compliant" assets whose senior claimant is the money market fund. That is, equity-tranche investors may receive distributions only to the extent that the total market value of the pool assets at the end of each business day meets the buffer requirement. Money-market fund investors, however, can redeem at one dollar per share until the fund is forced for lack of resources to convert to a floating NAV fund. At the end of the transition period, equity tranche investors may claim any available residual.

We illustrate the buffer requirement with a simple example, taking, for sake of illustration, a buffer size X of \$0.03 per share, in the form of Federal Reserve deposits.

**Monday:** The marked-to-market end of day value of fund assets is \$1.004 per share. The dedicated Federal Reserve deposits at the end of that day are \$0.02 per share. Thus, with the combined resources of \$1.024 per share, the 1+X requirement is not satisfied, triggering a minimum additional deposit on Tuesday of \$0.006 for each share held at the end of Tuesday in order for the fund to maintain its stable-NAV status.

**Tuesday:** At the end of the day, the fund has 1 billion shares. A minimum deposit of \$6 million is therefore to be added to the Federal Reserve buffer account by the end of the day. (A deposit of only the minimum of \$6 million would rule out acceptance of any fund investments that would bring the total number of fund shares above 1 billion.) At the end of the day, the market value of the fund assets is \$1.002 per share and, based on the actual buffer deposits, the buffer deposit is \$0.032 per share. The 1+X requirement is thus exceeded by \$0.004 per share. No action is required on the next day. A withdrawal from the Federal Reserve buffer account of up to \$0.004 per share held at the Wednesday close will be permitted on Wednesday.

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<sup>7</sup> In March 1980, the Board of Governors of the Federal Reserve announced a requirement for money-market funds to maintain additional deposits at the Federal Reserve, according to a specified formula, pursuant to the Credit Control Act of 1969. The SEC issued an associated series of rulings on March 14, 1980 (19 SEC Docket 908) implementing the rule, on April 22, 1980 (19 SEC Docket 1275) providing exemptive relief, and (after the Federal Reserve eliminated the requirement on July 3, 1980), on July 21, 1980 (20 SEC Docket 746) providing for rescission of its rule. That is, this "reserve" requirement was introduced and almost immediately dropped. Our proposal would not require a money market to make such deposits, but rather for its fund manager to arrange for such deposits, or for some other form of buffer, dedicated to covering risks to fund investors.

**Wednesday:** At the end of the day, the market value of the fund assets is \$0.996 per share and the buffer is \$0.0280 per share. In order to meet the 1+X requirement, the buffer must be “topped up” on Thursday.

**Thursday:** The buffer provider fails to make additional Federal Reserve deposits. The buffer requirement is therefore not met. As a result, the 60-day transition period to floating-NAV begins. No buffer withdrawals by the fund sponsor are permitted during this period, even if, through the effects over time of fund redemptions and investments and the revaluation of fund assets, the buffer per share exceeds X. Meanwhile, fund redemptions and investments may continue to be made at 1 dollar per share, drawing as needed on the buffer deposits until they are exhausted (which occurs when the sum of the buffer deposits and the mark-to-market NAV is equal to \$1). If there is an insufficient buffer to allow redemptions, the fund immediately floats its NAV. At the end of the transition period, the fund emerges as a floating-NAV fund if it has not already been liquidated or floated. Any residual buffer deposits at that time may be retrieved by the buffer provider.

The cost to the sponsor of the buffer requirement, beyond administrative expenses, is primarily of two forms:

1. The value of an effective put option, struck at \$1 per share, on the fund’s assets.
2. The potential loss of “convenience yield” associated with tying up buffer assets for a dedicated purpose.

The value of the put option depends of course on the volatility and illiquidity of the fund assets. The cost of providing a buffer thus aligns the asset investment incentives of the fund manager with the public’s interest in lowering systemic risk. The loss of financial flexibility associated with segregating liquid assets has some value. If one assumes for this cost a convenience yield of, say, 1%, then for each increase in the buffer size by 1% of NAV, there is an additional cost of roughly 1 basis point of NAV per year.<sup>8</sup> It therefore seems safe to guess that the bulk of the cost of meeting the proposed buffer requirement is represented by the risk of loss borne by the buffer provider, and perhaps by administrative costs.

Because fund sponsors have frequently provided voluntary support to their funds as needed to avoid breaking the buck, some of the cost of our proposal has already been effectively borne by fund sponsors and, indirectly through fees, by fund investors. How the additional costs of being required to buffer a stable-NAV fund are shared between a fund’s manager and its investors would depend on financial industry competition, among other factors.

In the United States, some if not all of the alternative buffer approaches that we have discussed would require exemptive relief or significant rule changes from the SEC. We presume that rule changes would also be needed in Europe. It is possible that changes in accounting standards for money market funds may also be required. Because of significant variation in the types of fund managers and investors, we

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<sup>8</sup> Evidence that such an estimate is reasonable can be found in “The aggregate demand for Treasury debt,” by Arvind Krishnamurthy and Annette Vissing-Jorgensen, working paper, Northwestern University.

are not proposing a specific contractual approach. Regulators may choose to design a rule that mandates the required effect of the buffer without tightly restricting the specific mechanism by which the required effect is to be achieved. If the value of stable-NAV funds is low relative to the costs of our proposed method of avoiding systemic risk, then funds will presumably choose to adopt a floating NAV structure.

When setting the size “X” of a required buffer, regulators may wish to consider the amounts by which money market funds have broken the buck in the past, or the amounts per share that fund sponsors have contributed in order to prevent them from breaking the buck. In the two-day period following Lehman’s bankruptcy, the Reserve Primary Fund reported a minimum share price of 97 cents.<sup>9</sup> Had redemptions not been halted by the Reserve Fund’s sponsors, a fire sale of additional assets could have caused significant additional losses. A buffer of at least \$0.03 per share would therefore have been necessary to prevent the Reserve Fund from breaking the buck.

Another consideration in determining the size of a buffer requirement is the concentration of fund assets among the debt instruments of a small number of borrowers. As of June 2010, for example, the top 5 exposures of U.S. prime money market fund assets, were all to European banks, with each of the 5 banks representing an exposure of at least 2.5% of aggregate fund assets.<sup>10</sup>

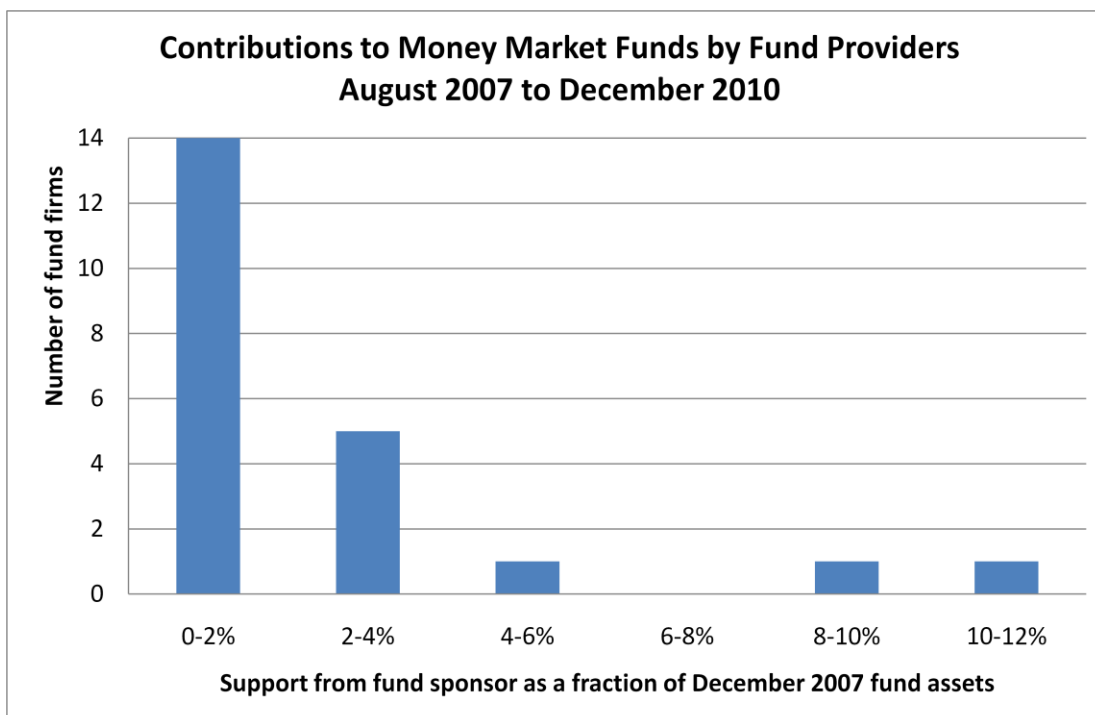
A third consideration in choosing an appropriately sized buffer is the level of support from fund sponsors that has been necessary in the past to prevent money market funds from breaking the buck. The bar chart below shows the levels of support provided to prime money market funds by their sponsors or parents from August 2007 to December 2010, from data provided to us by Moody’s Investors Service, and obtained from public disclosures. The support was provided by 21 firms with asset management units, some of which are foreign. The levels of support are shown in the figure as a fraction of the net assets of the relevant funds as of December 31, 2007. The total amount of support provided in these 21 cases was \$12.1 billion, for an average of 1.62% of net assets under management by the money market funds. Had these firms not made these contributions to the money market funds that they managed, then, absent other effects, these funds would have required buffers of the illustrated sizes in order to avoid breaking the buck. This is not to suggest that an appropriate buffer should necessarily have been large enough to prevent losses to fund investors in all cases. A buffer that suffices to cover losses with a

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<sup>9</sup> In the two days following Lehman's failure, and before the Reserve Fund halted redemptions, the Reserve Fund suffered a net loss of assets of \$27.3 billion, taking total assets from \$62.6 billion to \$35.3 billion. The Reserve Fund had held approximately \$785 million of Lehman debt instruments, or about 1.3%. See Sam Mamudi and Jonathan Burton, MarketWatch, “Money market breaks the buck, freezes redemptions”, September 17, 2008. The only other instance of a breaking of the buck was that of Community Bankers U.S. Government Money Market, which when it broke the buck in 1994, was valued at 96 cents per share.

<sup>10</sup> See “Money Market Funds: 2010 Outlook,” by Henry Shilling, Moody’s Investors Service, April 2010, revised, June 18, 2010. These top-five exposures, as a fraction of total Prime MMF Assets, were to BNP Paribas (3.5%), Société Générale (3.0%), Crédit Agricole (2.7%), Lloyds (2.7%), and Banco Bilbao Vizcaya Argentaria (2.5%). Because these are industry-average exposures, any variation across funds would have caused exposures of some individual funds to these borrowers to exceed these averages.

high probability could significantly reduce the likelihood of a run by investors, and increase the incentive of the fund sponsor to cover additional losses from its own resources in order to protect its franchise value.



Data source: Moody's

In general, the regulatory buffer should be sufficient in size to cover both (a) default losses on fund assets, and (b) potential additional losses that could arise from a need to sell or restructure fund assets quickly because of a moderately large surge of redemption demands. This second category of losses is relevant if the assets are illiquid or if their market values are affected by changes in market interest rates or credit spreads. The Investment Company Institute has recently proposed<sup>11</sup> an industry-wide “emergency liquidity facility,” a bank with access to liquidity from the Federal Reserve, that could purchase assets from money market funds at a price equal to amortized cost. While an emergency liquidity facility would mitigate the liquidity risk of money market funds, it would leave them, and itself, exposed to default risk. Fund investors would have a lower incentive to run if they were confident of at least a moderate level of coverage of losses due to both illiquidity and default.

<sup>11</sup> See the letter of January 10, 2011, of Paul Schott Stevens, President and CEO of the Investment Company Institute, to the Securities and Exchange Commission, commenting on the report of the President’s Working Group Report on Money Market Reform Options.