

## Reforming Money Market Mutual Funds: A Difficult Assignment

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The money market mutual fund ( MMMF ) industry was one of many segments of the financial sector that experienced significant volatility during the 2007–08 financial crisis. Reform efforts have been underway to make the industry more resilient to shocks, but proposals have been controversial. This *Economic Brief* explores some of the key issues and sheds light on why reforming this industry has been so challenging.

Money market mutual funds ( MMMFs ) were among many investment vehicles that experienced volatility during the 2007–08 financial crisis. Like many financial markets during the crisis, large numbers of investors rapidly withdrew from these funds, and the U.S. government, through the Federal Reserve and the Treasury Department, extended extraordinary support. And like many other investment vehicles, MMMFs have been the focus of reform efforts since the crisis to make the industry more resilient.

But unlike many other segments of the financial sector, major reforms for MMMFs have not yet been passed. (The 2010 Dodd-Frank Act did not directly address the MMMF industry.) This is partly because proposed reforms have been controversial and regulators have failed to agree on the best path. This *Economic Brief* explores some of the key issues of MMMF reform and helps explain why reforming this industry has been so difficult.

### **MMMF Basics**

To better understand certain events during the financial crisis and reform efforts after the crisis, it is useful to review some basic facts about the MMMF industry.

MMMFs act as intermediaries between investors seeking highly liquid, safe investments and a variety of corporate and government entities that issue short-term debt to fund operations. There are three types of MMMFs, and only one of them experienced major problems during the crisis. “Prime” funds invest primarily in private credit instruments, and they experienced significant volatility in late 2008 after suffering losses on these investments. The other two types—government MMMFs, which invest in U.S. Treasury and agency securities, and tax-exempt funds, which invest in state and local government securities—did not experience trouble during the crisis. In terms of assets under management, prime funds accounted for \$2.1 trillion of the \$3.5 trillion MMMF industry on September 10, 2008.<sup>1</sup>

The core feature of MMMFs is that investments are predominantly open-ended, and investors can withdraw funds at any time by cashing in their shares, generally at a constant price of \$1.00 per share. Rule 2a-7 of the Securities and Exchange Commission (SEC), which regulates MMMFs, allows the funds to value their portfolios based on the fund’s acquisition cost rather than based on the current market value of those assets as long as the former is not too far from the

latter. What this means in practice is that the funds can value shares at \$1.00, but they must periodically calculate the market value of the portfolio, and if the market value, or “shadow” net asset value (NAV) per share falls below \$0.995, the fund’s board must decide whether or not to lower the share price, which is called “breaking the buck.” To reduce the likelihood that the shadow value will fall below \$1.00, funds are subject to certain risk-limiting conditions, such as maturity and credit-quality restrictions.

The constant share value is intended to help customers, especially smaller investors, manage their cash holdings. It is based on the assumption that a pool of high-quality, short-term investments will deliver its expected return if held until maturity. However, if MMMF shareholders suspect that the fund will break the buck, they have incentive to withdraw their funds before the price is reduced. As investors rush to be first in line, the fund may be forced to sell assets to meet redemptions, potentially increasing the likelihood that the fund will actually break the buck. Even though the direct effects of breaking the buck are not necessarily great—since the share price may fall by as little as 5 percent of one penny—investors face a “first mover” advantage because only early withdrawers will receive the full share price, concentrating losses on the remaining shareholders. This can lead to a rush to withdraw funds, a so-called “run.”

### **During the Crisis**

A wave of redemptions occurred after Lehman Brothers announced on September 14, 2008, that it would file for bankruptcy protection the next day. There was a massive outflow of funds from prime MMMFs over the next two days, including more than \$40 billion in redemption requests from the Reserve Primary Fund, a \$62.5 billion prime MMMF that held \$785 million in Lehman debt. On September 16, the Reserve Primary Fund became only the second prime fund to ever break the buck, the first since 1994. Outflows from prime funds then accelerated significantly. Within a week, institutional investors withdrew roughly \$321 billion, or 16 percent of prime funds’ total assets.<sup>2</sup>

A natural way for prime funds to meet the high volume of redemptions would be to sell some of their

assets. The secondary market for these instruments can be thin, however, and MMMFs tend to hold a significant share of the market; for example, MMMFs held 45 percent of all outstanding commercial paper as of September 2008.<sup>3</sup> As a result of outflows experienced after Lehman’s failure, MMMFs’ purchases of new securities in short-term funding markets fell abruptly. These events threatened to restrict funding for a wide array of institutions that rely on short-term borrowing to fund operations.

In response, government agencies announced two emergency programs on September 19. The Fed established the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), which allowed the Fed to make direct loans to depository institutions and bank holding companies that were buying commercial paper from mutual funds.<sup>4</sup> The intended effects were twofold: to help credit flow to asset-backed commercial paper issuers, and to provide a market for the commercial paper that MMMFs sought to sell, helping them to meet redemptions.<sup>5</sup> In addition, the U.S. Treasury announced a blanket guarantee of the \$1.00 NAV per share for eligible MMMFs.<sup>6</sup> Outflows from MMMFs slowed in the weeks after these programs were announced, but the funds did continue to divest large amounts of commercial paper and other assets for some time.

Many prime funds also received private support from “sponsors.” A sponsor in this context is an affiliated company—often the fund’s asset management firm or parent company—that has an interest in avoiding the reputational damage of the MMMF’s forced liquidation. During the crisis, sponsors gave cash or purchased securities from MMMFs at above-market prices. According to a report by the Federal Reserve Bank of Boston, sponsors provided over \$4.4 billion in support to 78 MMMFs (out of 341 funds reviewed) between 2007 and 2011.<sup>7</sup> Some sponsors also provided contractual backstops that were not drawn upon but arguably helped funds to avoid breaking the buck.

### **Since the Crisis**

Since 2008, there have been multiple efforts to make the industry more resilient to sudden waves of with-

drawals, but these efforts have been controversial. On February 23, 2010, the SEC implemented a new set of rules for MMMFs.<sup>8</sup> These rules tightened restrictions on funds' risk-taking by imposing additional credit-quality standards, shortening the average maturity of funds' portfolios, and introducing, for the first time, the requirement that funds hold a minimum percentage of assets in highly liquid securities. The rule change also permitted a fund's board of directors to suspend redemptions when losses threaten to break the buck, a move that necessarily would result in liquidation of the fund. (Previously, funds had to get permission from the SEC to suspend redemptions.) The rule also enhanced funds' information disclosures, among other things.

The SEC explicitly noted in this rulemaking that the newly introduced rules were only a first step. In particular, they did not completely remove the possibility of runs created by the constant share value.

In November 2010, the SEC requested public comment on a long list of structural reforms proposed by the President's Working Group to make the industry less vulnerable to runs.<sup>9</sup> In August 2012, the SEC announced that its commissioners had failed to reach agreement on these reforms, and thus it would not proceed with a vote to solicit public comment on new proposed rules.<sup>10</sup>

Under section 120 of the Dodd-Frank Act, the newly established Financial Stability Oversight Council (FSOC) may recommend to a financial regulatory agency that it adopt stricter regulation of any financial product or practice if the FSOC believes its conduct, scope, nature, size, scale, concentration, or interconnectedness poses risks to financial stability. Under the law, the agency in question must either implement the recommendation or explain in writing why it has not done so, and these steps must be reported to Congress. On September 27, 2012, then-Treasury Secretary Timothy Geithner, serving in that position's capacity as FSOC chairman, wrote a letter to FSOC members urging them to act on section 120 by seeking public comment on reforms to the MMMF industry and providing a recommendation to the SEC.<sup>11</sup> If the SEC were to fail to implement reforms,

he urged the FSOC to consider other options, such as whether aspects of, or institutions in, the MMMF industry should be designated as "systemically important" under Title I of the Dodd-Frank Act, which would subject such firms to both higher prudential standards and supervision by the Fed.

On November 19, 2012, the FSOC sought public comment on three alternatives: (1) permanent elimination of the constant \$1.00 share price, meaning all redemptions would take place at the market value of the portfolio (floating NAV) as is done for other types of mutual funds; (2) preserving the stable NAV, but requiring funds to hold an asset buffer equal to 1 percent of the NAV to help absorb credit losses. Simultaneously, a small percentage of large investors' shares would be available for redemption only after a delay, a provision known as "minimum balance at risk;" and (3) maintaining the stable NAV and requiring MMMFs to hold an asset buffer equal to 3 percent of the NAV to help absorb credit losses.<sup>12</sup>

The SEC subsequently indicated that it would not pursue the latter two options because of its judgment that doing so might result in a greater contraction of the MMMF industry than other acceptable proposals. On June 5, 2013, the SEC sought comment on two proposals: (1) a floating NAV, and (2) a stable NAV combined with two measures intended to limit runs. Those measures would allow funds to impose fees on redemptions if liquidity fell below a certain threshold and would allow funds to temporarily suspend redemptions—known as redemption "gates"—if a certain amount of redemptions already had occurred.<sup>13</sup>

### **Understanding Proposed Reforms**

Every major reform proposal has emphasized the incentives to run created by the constant \$1.00 share price, and every major reform proposal has included a floating NAV as one option.

If shareholder redemptions were paid based on the current market value of shares, there would be much less value in rushing to be first in line because there would be no event (breaking the buck) to beat. Under a floating NAV, the redemptions that do occur are more likely to be because investors have a consump-

tion need or see a better investment opportunity elsewhere. The floating NAV option is considered further in the final section of this *Economic Brief*.

Historically, the funds have had no explicit way to absorb losses such as the large write-downs imposed by Lehman's bankruptcy. Sponsor support has provided one way to deal with losses—according to the Boston Fed analysis, at least 31 funds would have broken the buck without sponsor support between 2007 and 2011—but to the extent that this support is discretionary, it is not enough to reliably prevent runs.

Thus, alternatives to the floating NAV have included preserving the stable NAV, but with the requirement that funds adopt capital buffers.<sup>14</sup> Capital buffers would help funds absorb losses and could therefore make runs less likely. But they are only sufficient to prevent runs if investors judge that the buffer is large enough to absorb potential losses. So setting the right buffer would require regulators to understand how investors form expectations about the viability of the funds, which would be difficult. Furthermore, because capital is often considered costly, there is a natural tendency to set capital requirements potentially too low. This is especially true after long periods without a crisis when the benefits of high capital buffers become less apparent. Moreover, capital buffers in a regime of stable NAVs do not eradicate the “cliff” effect that provides the incentive for runs. Even if withdrawing investors are forced to sacrifice part of their investment (as in the “minimum balance at risk” clause that the FSOC proposed in November 2012), they would still likely do so if they perceive that losses could exceed the relinquished amount.

A relevant question is why funds don't adopt some of these safeguards on their own. One possibility is that funds and investors expect that if run-like conditions developed, the government likely would intervene to prevent firms from breaking the buck, as the Fed and the Treasury did during the crisis. Funds may perceive little reputational risk from accepting government help because run-like conditions are likely to affect a number of funds at once. To the extent that government support is expected, funds have less incentive to structure themselves in ways that would help them

absorb losses or prevent runs. In fact, the expectation of government support itself increases the likelihood of runs because, by transferring losses from fund shareholders to taxpayers, it encourages risk-taking.

Another way to deal with the possibility of runs would be to impose redemption gates, as proposed by the SEC last year. The idea behind gates is similar to partial suspension of convertibility from deposits to cash in the famous Diamond-Dybvig model of bank runs.<sup>15</sup> In that model, depositors who don't truly need their funds know that suspension will stop the run before the bank's assets are depleted, so they are content to stay invested. However, if the gates are not appropriately set or are not credible, then gates could exacerbate runs by increasing the incentives for investors to get out before the gates are invoked. Moreover, if the ability to suspend is accompanied by liquidation (as in the provisions adopted by the SEC in February 2010) and liquidation imposes costs on the fund that reduce the return to investors, then investors may rush to exit before suspension is invoked.

### **Floating NAVs**

Though a floating NAV probably has received more combined support than any other proposal, there are evident challenges in implementing it.<sup>16</sup>

Floating NAVs are likely to be opposed by certain groups because they tend to increase the funding costs of the MMMF industry. However, some of this could be appropriate. MMMFs historically have bypassed the regulations that banks face—designed to limit moral hazard from government support through deposit insurance and access to Fed credit—because the funds did not benefit from explicit government support. After the financial crisis, the assumption that MMMFs don't benefit from an implicit government guarantee is no longer appropriate. Unless the government can credibly commit to not providing support, which would seem difficult given the events of September 2008, the funds' costs ought to rise.

Another possible objection to a floating NAV is that it could negate the economic function that MMMFs perform. But whether that is true depends on one's assessment of what that function is. Prime funds

could be seen as performing one of at least two possible functions. One is that they provide maturity transformation services to investors. Even though MMMFs generally invest in short-term securities that satisfy a maximum maturity requirement, investors in MMMFs often include corporations looking for an interest-bearing, extremely short-term, liquid, and safe place to park cash used for operating expenses. Thus, there can be a maturity mismatch involved with MMMF operations. An alternative to the maturity transformation function is that the funds serve primarily as expert managers of relatively short-term money market instruments.

One of the authors of this *Economic Brief* (Ennis) explored those functions theoretically, and their implications for setting of the NAV, in a recent paper.<sup>17</sup> He first considers the maturity transformation case. The main objective of an investment vehicle that offers demandable claims and maturity transformation services is that it provides a type of liquidity insurance to the investor. In other words, the investor can engage in longer-term investments (and the higher returns generally associated with them) but can access his funds on demand if the need to employ those funds elsewhere arises. This liquidity insurance is possible because only a portion of investors in the fund is expected to withdraw at any given time. If, on the other hand, everyone were to withdraw at once, the fund would be unable to meet all redemptions, creating the conditions for a self-fulfilling run on the fund, as modeled by Diamond and Dybvig.

The redemption value that an investor receives must take this insurance feature into account. A value that is too high—that is, not reflecting the current market value of an investment that is not yet mature—may not leave enough funds for the remaining investors, thus retaining the incentive for runs. A redemption value that is too low—reflecting the current market value—may negate the value of the liquidity insurance that the fund is supposed to provide (in the same way that narrow banking undermines maturity transformation banking). There is a tradeoff, then, between the insurance feature and stability: trying to completely rule out instability may uproot all potential benefits from maturity transformation.

Alternatively, suppose that MMMFs are cash managers and perform little or no maturity transformation services. The Diamond-Dybvig model of runs, which centers on maturity transformation, no longer applies. If the NAV is purely floating, the redemptions that do occur can be efficient because they are due to needs to reallocate resources to better uses. In this framework, delays in adjusting NAVs to the appropriate value could produce the run-like behavior that occurred in 2008. Furthermore, limiting the ability of investors to withdraw from troubled funds could prevent the efficient reallocation of resources.

Note the difference between the maturity transformation case and the investment manager case. In the former, a fully floating NAV produces stability, but negates the maturity transformation function of MMMFs. In the latter, a floating NAV enhances stability and efficiency.

Of course, MMMFs may be performing both functions at the same time, along with other functions. How much of each they are doing is ultimately an empirical question. Calculating efficiency-enhancing redemption values thus is not always straightforward. More generally, after taking a stand on the functions performed by MMMFs, well-understood theoretical concepts can guide the design of an appropriate regulatory framework. ■

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## Endnotes

<sup>1</sup> For a more detailed summary of events during the financial crisis, see Duygan-Bump, Burcu, Patrick Parkinson, Eric Rosengren, Gustavo A. Suarez, and Paul Willen, "How Effective Were the Federal Reserve Emergency Liquidity Facilities? Evidence from the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility," *Journal of Finance*, April 2013, vol. 68, no. 2, pp. 715–737.

<sup>2</sup> Data from iMoneyNet.

<sup>3</sup> Duygan-Bump, et al., April 2013.

<sup>4</sup> Federal Reserve Board of Governors press release, September 19, 2008.

<sup>5</sup> To provide direct support to commercial paper issuers, the Fed also announced the Commercial Paper Funding Facility (CPFF) on October 7, 2008.

<sup>6</sup> See “Treasury Announces Guaranty Program for Money Market Funds,” Treasury Department press release, September 19, 2008.

<sup>7</sup> Brady, Steffanie A., Ken E. Anadu, and Nathaniel R. Cooper, “The Stability of Prime Money Market Mutual Funds: Sponsor Support from 2007 to 2011,” Federal Reserve Bank of Boston Risk and Policy Analysis Unit, Working Paper No. RPA 12-3, August 2012.

<sup>8</sup> See “SEC Approves Money Market Fund Reforms to Better Protect Investors,” SEC press release, January 27, 2010.

<sup>9</sup> The President’s Working Group was a precursor to the FSOC created by the 2010 Dodd-Frank Act. It was composed of the secretary of the Treasury, the chairman of the Federal Reserve Board of Governors, the chairman of the SEC, and the chairman of the Commodity Futures Trading Commission. See “Report of the President’s Working Group on Financial Markets: Money Market Fund Reform Options,” October 2010.

<sup>10</sup> See “Statement of SEC Chairman Mary L. Schapiro on Money Market Fund Reform,” SEC press release, August 22, 2012.

<sup>11</sup> See letter from Timothy F. Geithner, secretary of the Treasury, to members of the FSOC, September 27, 2012.

<sup>12</sup> See “Proposed Recommendations Regarding Money Market Mutual Fund Reform,” *Federal Register*, vol. 77, no. 223, November 19, 2012, pp. 69455–69483. For a discussion of minimum balance at risk, see McCabe, Patrick E., Marco Cipriani, Michael Holscher, and Antoine Martin, “The Minimum Balance at Risk: A Proposal to Mitigate the Systemic Risks Posed by Money Market Funds,” Federal Reserve Bank of New York *Staff Reports*, No. 564, July 2012.

<sup>13</sup> See “SEC Proposes Money Market Fund Reforms,” SEC press release, June 5, 2013.

<sup>14</sup> The proposals discussed above consider that MMMFs could be given a choice between a floating NAV and a stable NAV combined with other safeguards.

<sup>15</sup> Diamond, Douglas W., and Philip H. Dybvig, “Bank Runs, Deposit Insurance, and Liquidity,” *Journal of Political Economy*, June 1983, vol. 91, no. 3, pp. 401–419.

<sup>16</sup> For example, two comment letters, one to the FSOC and one to the SEC, both signed by all 12 Reserve Bank presidents, endorsed the floating NAV option while raising concerns about the other options.

<sup>17</sup> Ennis, Huberto M., “Some Theoretical Considerations Regarding Net Asset Values for Money Market Mutual Funds,” Federal Reserve Bank of Richmond *Economic Quarterly*, Fourth Quarter 2012, vol. 98, no. 4, pp. 231–254.

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