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OPENING THE GATE TO MONEY MARKET FUND REFORM

by Hester Peirce and Robert Greene



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Abstract

For decades, money market funds (MMFs) were thought to be safe, low-risk investments. The financial crisis of 2007–2009 cast MMFs in a new, less favorable light, which prompted calls for reform. Our paper offers a reform alternative that builds on MMF boards of directors and their well-established responsibility for making key decisions for MMFs. After a brief overview of the regulatory history of MMFs, we describe the responsibilities that boards have under current law, the problems MMFs encountered during the crisis, and market and government responses to these problems. Evidence shows that during the crisis, investors were discerning in deciding whether and when to run; more risky, less liquid funds experienced higher volumes of redemptions. This finding, along with our assessment of funds' boards of directors' responsibilities, helps to lay the groundwork for considering the various options for addressing problems still facing MMFs, including our proposal to allow boards to gate their funds when faced by potentially destabilizing redemption pressures.

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Opening the Gate to Money Market Fund Reform

Hester Peirce and Robert Greene

Over the last several years, the roughly \$2.7 trillion money market fund (MMF) industry¹ has found itself the uncomfortable object of attention from regulators and academics. One of these funds—the Reserve Primary Fund—notoriously could not pay investors during the crisis, a virtually unprecedented event in the stable world of money market funds. A run on certain MMFs ensued, and the government set up a number of programs to prop up MMFs and the entities that rely on them for funding. Although the focus on MMFs and the potential instability brought to light by the last crisis is warranted, the nature of the reforms being considered is not.

In this article, we propose an alternative reform that centers on having MMF boards of directors, rather than regulators, make critical decisions on behalf of the fund during times of crisis. Specifically, we propose that an MMF board of directors be permitted to gate redemptions at the board’s sole discretion for any length of time without any conditions other than an affirmative board vote—including a vote of the majority of the fund’s disinterested directors—that suspending redemptions is in the best interests of the fund and is necessary to protect the fund’s stable net asset value (NAV) and to ensure the equitable treatment of fund shareholders. This proposal is a natural extension of the existing responsibilities of MMF boards of directors.

An MMF is a mutual fund—a collectively owned pool of assets—that typically invests in low-risk securities, such as high-grade commercial paper, government securities, and certificates of deposit. The Securities and Exchange Commission (SEC) regulates MMFs under the Investment Company Act of 1940 (“Investment Company Act” or “Act”).² MMF shares generally are bought and sold at \$1.00 per share. This feature, together with the ease with which

shares can be bought and sold, allows MMFs to serve as the functional equivalent of a bank account in the eyes of many investors. MMFs are an important cash management tool for corporate treasurers and a vital source of short-term funding for banks, municipalities, and corporations. MMFs cater to both institutional and retail investors and come in several different forms: government MMFs, which invest in Treasury securities and agency securities; prime MMFs, which invest in government securities and in other short-term securities such as commercial paper; and tax-exempt MMFs, which invest in municipal securities.

The SEC adopted reforms to the regulation of MMFs in 2010 that the agency viewed as a first step toward revamping MMF regulation in response to the crisis. The reforms being considered for the second step have been the subject of heated debate by industry, regulators, MMF investors, and academics. Many of the suggested reforms are unworkable or threaten the core of the industry. This paper argues for a more measured reform that offers the promise of addressing the issues that MMFs encountered during 2008 without eliminating a useful investment and funding mechanism.

Our proposal relies on MMF boards to freeze redemptions whenever and for as long they determine is in the best interests of the fund. This approach would entrust boards with a responsibility that is consistent with other responsibilities they exercise, would serve as a stark reminder to investors that MMFs are not equivalent to bank accounts, and would give MMF advisers, boards, and investors an incentive to limit MMF risk-taking in order to safeguard ready redeemability.

This article proceeds as follows. Part I outlines briefly the background of MMFs. Part II discusses the role of the board of directors in governing MMFs, a role upon which our proposal would build. Part III discusses MMF-related events during the financial crisis of 2007–2009 and

describes the government’s response to these events. Part IV describes the reforms the SEC instituted in 2010. Part V outlines options for further reform. Part VI outlines and discusses benefits and drawbacks of our proposed solution—unrestricted discretionary gating by fund boards. Part VII concludes.

I. Competitive and Regulatory Origins of Money Market Funds

The history of MMFs is rooted in competition with bank accounts. The regulatory framework that the SEC built up around MMFs allowed them to thrive and become a large and important segment of the financial landscape.

A. How Money Market Funds Began

MMFs arose as a response to investor frustration over federally imposed interest rate caps on bank savings accounts. In 1933, the Federal Reserve implemented Regulation Q, which capped the level of interest a bank could offer on savings accounts. When interest rates rose in the early 1970s, savings accounts became increasingly unattractive.³ The original purpose of these caps was to curb purportedly excessive rate competition between banks that could lead to more bank risk-taking and thus more bank failures.⁴ It was not until the 1960s and 1970s, when banks’ competition for deposits increased and interest rates rose above the regulatory cap, that the regulatory cap had a noticeable effect.⁵

MMFs, which were not bound by the caps and were thus better able to satisfy investor demand for yield, got their start in the 1970s and really started growing in the early 1980s.⁶ MMFs offered higher interest rates along with the same ready liquidity and one-dollar-in-one-dollar-out feature as bank accounts.⁷

B. Pre-2010 Regulation of Money Market Funds

MMFs went through a regulatory odyssey at the SEC that ultimately resulted in the promulgation of rule 2a-7 in 1983.⁸ Rule 2a-7 allows MMFs to maintain a stable net asset value—the one-dollar-per-share value that is a fundamental feature of most MMFs—as long as the actual value of fund shares remains within a narrow band around one dollar and the rule’s parameters with respect to portfolio maturity, quality, liquidity, and diversity are satisfied. The version of rule 2a-7 that was in force in 2008 limited MMFs’ average portfolio maturity to 90 days and generally prohibited investments in securities with maturities longer than 397 days.⁹ MMFs could invest in eligible U.S. dollar-denominated securities deemed by the board—based on a consideration of credit quality and credit ratings—to “present minimal credit risks.”¹⁰ Eligible securities were generally either first tier or second tier rated securities, meaning they had to have one of the two highest short-term debt ratings from two different government-approved credit rating agencies,¹¹ or, if unrated, they had to be of comparable quality as determined by the investing MMF’s board.¹² MMFs were prohibited from investing more than five percent of total assets in first tier securities from a single issuer.¹³ MMFs were prohibited from investing more than one percent of total assets (or \$1 million, whichever was greater) in second tier securities of a single issuer.¹⁴ Total second tier securities could not exceed five percent of a fund’s total assets.¹⁵

The SEC designed and updated these restrictions to ensure that a stable NAV of \$1.00 would be easily maintainable¹⁶ even in the face of a negative exogenous shock.¹⁷ An MMF’s board of directors is responsible for seeing that the rule’s restrictions are adhered to, and, in the event of a significant deviation from a \$1.00 NAV, rule 2a-7 requires the board to determine “what action, if any should be initiated.”¹⁸ Accordingly, we turn next to the role of an MMF board.

II. Role of Money Market Funds' Boards of Directors

MMFs, like other mutual funds, are investment companies regulated under the Investment Company Act of 1940.¹⁹ Mutual funds are organized as business trusts or corporations under state law,²⁰ and investors in a fund are shareholders. They elect a board of directors.²¹ The role of a fund's board is important, as is that of the board of an operating company with direct employees. Fund boards, however, have a unique set of responsibilities that derives from the distinct manner in which funds are established and managed. As the discussion below illustrates, our proposal—which makes the board responsible in times of crisis for protecting the fund from runs—builds on a long tradition of entrusting fund boards with key fund responsibilities. A separate company—a fund sponsor—sets up a mutual fund, typically as part of a diverse, multifund complex; usually serves as the principal investment adviser to the fund; and may also provide “back-office” administrative functions. Although a distinct legal entity,²² the fund is inextricably linked with the sponsor—both practically and in the minds of investors—after it is established.²³ Separate entities—which may be affiliates of the fund sponsor—perform other core day-to-day responsibilities of running the fund. For example, underwriters manage the distribution of fund shares, and transfer agents perform recordkeeping functions.²⁴ Funds typically enter into a custody agreement with a bank to safeguard fund assets and perform related functions.²⁵ Given that the funds within a complex are often served by the same entities, it is common for all the funds in a complex to share a single board.²⁶

The board plays an important role in overseeing the fund's relationship with the sponsor and other service providers. Boards are responsible for “performance evaluation, contract approval, fee approval, pricing of fund shares, and oversight of portfolio management and compliance issues.”²⁷ They monitor portfolio liquidity and credit quality (for MMFs).²⁸ When

the board delegates the day-to-day legwork to the fund's investment adviser, the board retains oversight responsibility.²⁹ For example, most fund boards delegate the voting of proxies for portfolio securities to the fund's adviser.³⁰ The board thus "ensure[s] that the fund's shareholders receive the benefits and services to which they are fairly entitled, both as a matter of law and in accordance with the fund's prospectus."³¹

Under the Investment Company Act, independent directors play a particularly important role in policing conflicts of interest.³² The Act requires that at least forty percent of the board's directors be independent.³³ Independent directors cannot be "interested persons," meaning persons affiliated with the fund or fund service providers.³⁴ At the end of 2011, approximately ninety percent of fund complexes had boards with seventy-five percent independent directors, well above the statutory minimum.³⁵

Fund directors' responsibilities are governed by the state corporation law and the more tailored requirements prescribed by the Investment Company Act and the SEC's implementing regulations. Under state law duties of care and loyalty, directors must "act in good faith and with that degree of diligence, care and skill that a person of ordinary prudence would exercise under similar circumstances in a like position," and "exercise their powers in the interests of the fund and not in the directors' own interests or in the interests of another person or organization."³⁶ Specific state law obligations include providing "management direction" to the fund, approving major transactions, and monitoring conflicts of interest.³⁷ In court challenges, directors are protected by the business judgment rule "so long as the directors acted in good faith, were reasonably informed, and rationally believed that the action taken was in the best interests of the fund."³⁸ The Investment Company Act authorizes the SEC to sue directors for "engag[ing] in any act or practice constituting a breach of fiduciary duty involving personal misconduct."³⁹

The Investment Company Act and SEC implementing regulations give mutual fund boards additional responsibilities. SEC rules entrust MMF boards with an additional unique set of duties.⁴⁰ The responsibility that we propose to add—determining when gating is appropriate—would be a logical extension of the current board duties set forth in these two tables. Table 1 details mutual fund board responsibilities, and table 2 details responsibilities unique to MMFs under rule 2a-7. As these tables illustrate, boards make most key decisions for funds. Our proposal, which is described in part VI, would enable them to make another key decision.

Table 1. Select Responsibilities Unique to a Mutual Fund Board of Directors

Board responsibility	Relevant statute (2012) or regulation (2013)
Determine fair value of securities for which market values are not readily available	15 U.S.C. § 80a-2(a)(41) & 17 C.F.R. § 270.2a-4(a)(1)
Exercise rights to annually approve & terminate advisory contract	15 U.S.C. § 80a-15(a)
Annually approve the contract with the fund’s principal underwriter	15 U.S.C. § 80a-15(b)
Annually select the fund’s independent public accountant	15 U.S.C. § 80a-31(a)
Select preparer of fund’s financial statements, unless selected by shareholder vote	15 U.S.C. § 80a-31(b)
Play a role in assessing securities underlying repurchase agreements	17 C.F.R. § 270.5b-3
Approve agreement for fund, as part of underwriting syndicate, to acquire securities	17 C.F.R. § 270.10f-1(e)
Approve & monitor securities purchases from affiliated underwriting syndicates	17 C.F.R. § 270.10f-3(c)(10)
Approve & monitor fund’s participation in 12b-1 share distribution plan	17 C.F.R. § 270.12b-1
Approve interim advisory contracts	17 C.F.R. § 270.15a-4(b)
Approve & monitor affiliate purchase & sale transactions	17 C.F.R. § 270.17a-7(e)
Approve affiliated mergers	17 C.F.R. § 270.17a-8(a)(2)
Approve joint liability insurance contracts with fund affiliates	17 C.F.R. § 270.17d-1(d)(7)
Approve & monitor affiliated broker remuneration	17 C.F.R. § 270.17e-1(b)
Annually approve contract with fund’s custodian	17 C.F.R. § 270.17f-1(d)
Make certain decisions regarding the custody of fund assets	17 C.F.R. § 270.17f-2
Approve petty cash account & controls on its use	17 C.F.R. § 270.17f-3
Delegate & oversee foreign custodian arrangements	17 C.F.R. § 270.17f-5(b)
Annually approve form & amount of fidelity bonds, including joint insured bonds	17 C.F.R. § 270.17g-1(d)–(g)
Approve & monitor codes of ethics	17 C.F.R. § 270.17j-1(c)
Approve plans for multiple class funds	17 C.F.R. § 270.18f-3(d)
Determine when fund’s NAV will be calculated each day	17 C.F.R. § 270.22c-1(d)
Establish substitute to shareholder ratification of independent public accountant	17 C.F.R. § 270.32a-4
Approve compliance policies & procedures & chief compliance officer	17 C.F.R. § 270.38a-1(a)

Source: Authors’ compilation.

Note: Some board responsibilities are omitted. *See, e.g.*, 17 C.F.R. § 270.6e-2(b)(9) (2013) (setting forth duties of boards with respect to variable life insurance separate accounts); 17 C.F.R. § 270.23c-3 (2013) (setting forth duties of closed-end companies that are engaging in repurchase offers).

Table 2. Responsibilities Unique to Money Market Mutual Fund Boards

MMF board's responsibility	Paragraph of rule 2a-7
Designate Nationally Recognized Statistical Rating Organizations on which MMF can rely	(a)(11)(i)
Determine whether an unrated security is of comparable quality to a rated security	(a)(12) & (14)
Determine how fund shares are priced	(c)(1)
Determine which securities present minimal credit risks and thus are appropriate investments	(c)(3)(i)
Determine risk associated with securities subject to a conditional demand feature	(c)(3)(iv)(B)
Evaluate seller's creditworthiness in connection with repurchase agreement acquisitions	(c)(4)(ii)(A)
Determine that MMFs in portfolio in excess of diversification limits satisfy rule 2a-7	(c)(4)(ii)(E)
Determine that demand features or guarantees are not basis for credit quality determination	(c)(6)
Determine appropriate action if security is downgraded or otherwise requires reassessment	(c)(7)(i)(A)
Determine whether to override requirement to exercise a portfolio security's demand feature	(c)(7)(i)(C)
Determine whether to override requirement to dispose of a troubled portfolio security	(c)(7)(ii)
Establish procedures to maintain & monitor fund's stable NAV under amortized cost method	(c)(8)(i)
Establish interval for determining deviation from market NAV	(c)(8)(ii)(A)(1)
Periodically review deviations from market NAV	(c)(8)(ii)(A)(2)
Determine appropriate action if the deviation from market price exceeds 0.5%	(c)(8)(ii)(B)
Cause fund to act to reduce dilution or unfair results of material deviation from market price	(c)(8)(ii)(C)
Minimize price deviations for funds using the penny-rounding method	(c)(9)
Determine likelihood of deemed issuers for asset-backed securities purchased by the fund	(c)(10)(iv)
Determine appropriate intervals for stress testing ability to maintain stable NAV	(c)(10)(v)
Guide & monitor delegates if board delegates responsibilities to the fund's adviser or officers	(e)

Source: 17 C.F.R. § 270.2a-7 (2013).

III. Money Market Funds During the Crisis of 2007–2009

Until the most recent crisis, money market funds had not attracted much attention from those looking for trouble in the financial system. Highly regulated and diversified in their holdings, MMFs were thought to be safe, low-risk investments.⁴¹ The events of 2007 through 2009 cast money market funds in a new, less favorable light. Looking briefly at the problems that MMFs encountered and the market and government responses will help to lay the groundwork for considering the various options for addressing those problems, including our proposal to allow boards to gate their funds when faced by such redemption pressures.

A. ABCP Crisis and Its Effect on Money Market Funds

Prime MMFs, those that invest in money market instruments other than simply Treasury and agency securities, began to feel the effects of the subprime mortgage crisis in mid-2007 when asset-backed commercial paper (ABCP) markets came under stress.⁴² In 2007, twenty-five percent of global prime MMFs were invested in ABCP,⁴³ which is commercial paper backed by revenue-generating assets such as mortgages and credit card receivables.⁴⁴ By July 2007, outstanding ABCP in the United States had grown to a peak of \$1.16 trillion.⁴⁵ A very difficult period for ABCP followed, and MMFs, along with other ABCP purchasers, responded by treating ABCP more warily than they had before.

On August 9, 2007, just weeks after two Bear Stearns hedge funds filed for bankruptcy following losses on subprime loans, three funds managed by the French bank BNP Paribas, unable to value the securities in its portfolio backed by subprime mortgages, stopped redemptions.⁴⁶ The head of BNP's division of asset management and services was quoted as saying, "For some of the securities there are just no prices As there are no prices, we can't calculate the value of the funds."⁴⁷ These events prompted more widespread concern about the quality of the assets underlying ABCP.⁴⁸ Accordingly, ABCP interest rates rose, and the amount of ABCP outstanding fell markedly during the following year.⁴⁹ By one estimate, in August 2007, approximately twenty-five percent of ABCP programs experienced runs, meaning that lenders refused to roll over ABCP when it expired.⁵⁰ MMFs were among the investors that pulled their money out of ABCP. MMFs and other ABCP investors did not experience large losses as a result of the ABCP troubles because guarantees by the bank sponsors of ABCP programs prevented losses.⁵¹

Even without big losses, the 2007 ABCP experience caused MMFs to adjust their portfolios. As Marcin Kacperczyk and Philipp Schnabl explain, the emergence of problems in

the ABCP markets caused “a repricing of risks in money markets” that enabled MMFs to choose “whether to invest in assets with a substantial risk premium to safe government securities.”⁵² Many prime funds chose to move assets out of commercial paper and into bank certificates of deposit and other safer assets.⁵³

B. The Reserve Primary Fund’s Collapse

One of the funds that invested in high-risk assets in the hope of higher returns was the Reserve Primary Fund.⁵⁴ As the Investment Company Institute’s Money Market Working Group documents, the Reserve Primary Fund had nearly sixty percent of its assets in commercial paper by July 2008, compared to one percent a year earlier.⁵⁵ Its yield correspondingly rose and the fund moved from the bottom twenty percent (in terms of yield) to the top ten percent of institutional funds.⁵⁶ Institutional investors responded to these high yields, and its assets doubled between July 2007 and July 2008.⁵⁷ The fund’s share of the total net assets in prime institutional MMFs rose from 1.7% to 3.5% in the same time period.⁵⁸

Among the types of commercial paper that the Reserve Primary Fund purchased during this period was commercial paper issued by financial institutions, including Lehman Brothers Holdings Inc.⁵⁹ By August 2008, the Reserve Primary Fund held \$785 billion in Lehman commercial paper and medium-term notes,⁶⁰ or approximately 1.18% of the fund’s \$62.5 billion assets under management.⁶¹ On September 15, 2008, after Lehman’s bankruptcy filing, the board of the Reserve Primary Fund held an emergency meeting and revalued the Lehman debt at eighty percent of par.⁶² The high volume of redemption requests reflected deep investor concern about the securities.⁶³ On September 16, the Reserve Primary Fund announced that the Lehman securities had been written down to zero, the fund’s net asset value had fallen to \$.97, and there

would be a seven-day delay on redemptions.⁶⁴ The Fund had “broken the buck,” meaning that its stated NAV had fallen below the \$1.00 that is a distinguishing feature of MMFs. Breaking the buck was a notable event because it had only happened to an MMF once before.⁶⁵

The Reserve Fund Board’s decision to delay filling redemption requests was intended to curb additional losses that the fund would have incurred if it had needed to meet those redemption requests by selling securities at a loss.⁶⁶ On September 22, the SEC retroactively granted the fund an exemptive order under section 22(e)(3) of the Investment Company Act to allow the fund to suspend redemptions “until the markets are liquid to a degree that enables each Fund to liquidate portfolio securities without impairing the net asset value of each Fund, or the Commission, on its own initiative, rescinds the order”⁶⁷ As the board explained, the SEC’s order would enable the fund to sell its assets through “an orderly sale process that seeks to obtain best pricing for the interest of shareholders and integrity of the funds’ NAV.”⁶⁸ Over the course of almost two years, the Reserve Primary Fund liquidated and returned to its shareholders over ninety-nine percent of fund assets as of the close of business on September 15, 2008.⁶⁹

C. Other Funds’ Troubles and the Drivers of Redemption Activity

The Reserve Primary Fund was not the only MMF to run into trouble, but MMFs were not uniformly affected by the market strains of fall 2008. Academic literature indicates that MMF redemptions were primarily driven by concerns surrounding each fund’s portfolio risk as measured by past yield and liquidity. These findings seem consistent with investors’ incentives to exit early from MMFs that are likely to run into trouble, while those MMFs still have liquid assets with which to redeem their shares at one dollar.⁷⁰

Institutional and prime MMFs were most heavily affected. Presumably because institutional investors were more sensitive to the implications of remaining in a troubled fund, they were much more active redeemers than retail investors.⁷¹ Federal Reserve economist Patrick McCabe estimates that during the month starting September 10, 2008, institutional prime MMFs were depleted by thirty percent compared to five percent for retail prime MMFs.⁷² Government MMFs—which were relatively liquid and transparent—experienced inflows, including from investors who had redeemed their prime MMF holdings.⁷³ By one estimate, during the week in which the Reserve Primary Fund broke the buck, investors redeemed \$310 billion—or fifteen percent of prime MMF assets—from prime MMFs.⁷⁴

Even among prime MMFs, investors were discerning in deciding whether to run. Economists Kacperczyk and Schnabl find “that funds with more money fund business and funds that took more risks before Lehman’s default experienced larger runs.”⁷⁵ McCabe finds that MMFs with higher portfolio yields (an indicator of portfolio risk) were more likely to experience outflows, as were funds the sponsors of which had larger credit default swap spreads (an indicator of sponsor risk).⁷⁶ Likewise, economists Lawrence Schmidt, Allan Timmerman, and Russ Wermers find that sophisticated institutional investors “chased yields in larger, low-expense funds prior to the crisis, and considered the potential of a complex to ‘backstop’ its institutional funds when deciding on whether to move their money during the crisis.”⁷⁷ They find also that funds with less liquid portfolios experienced more run behavior.⁷⁸ They further find that “[w]hile the median prime institutional fund experienced only mild outflows during the crisis, funds in the left tail (of the outflow distribution) experienced extremely large outflows.”⁷⁹ In other words, some funds experienced much higher outflows than others.

This uneven pattern of investor redemptions in times of crisis—characterized by heightened investor pullback from less liquid and riskier funds—also has manifested in other contexts. During the ABCP crisis, German MMFs with illiquid assets experienced massive redemptions while more liquid MMFs actually experienced inflows.⁸⁰ In fact, from July 2007 to June 2008, the most illiquid quartile of German MMFs accounted for approximately sixty percent of all German MMF outflows.⁸¹ A similar pattern emerged when concerns over European sovereign debt financing peaked during the summer of 2011; U.S. prime MMFs with high-risk exposure to at-risk European banks experienced a significantly higher degree of redemptions than comparable funds that were not as exposed to this risk.⁸²

D. Sponsor Support

The Reserve Primary Fund was the only MMF to break the buck during the 2007–2009 period, but additional MMFs might have broken the buck if not for the support provided by MMF sponsors. Fund sponsors are not obligated to provide support, but sometimes do so in an effort to halt runs, maintain their reputation, and avert having an MMF break the buck or liquidate.⁸³ The support they provide can come in different forms, including the purchase of distressed assets from funds at par or amortized value, capital contributions, capital support agreements, guarantees, or the procurement of letters of credit for the fund.⁸⁴ As a consequence, it is difficult to identify and quantify instances of sponsor support.

Some sponsor support came early in the crisis when the ABCP markets began to experience trouble. The SEC said, without identifying the relevant time period, that it was aware of “at least 44 money market funds that were supported by affiliates because of [Structured Investment Vehicle] investments.”⁸⁵ SEC Chairman Mary Schapiro later testified that the SEC

staff had identified a total of 300 instances of sponsor support since the inception of MMFs in the 1970s.⁸⁶ According to Schapiro's testimony, 100 of those instances took place during September 2008.⁸⁷ From August 2007 to the end of 2008, the SEC estimates that almost twenty percent of MMFs received sponsor support.⁸⁸ Credit rating agency Moody's identified 208 instances of sponsor support in the United States and Europe.⁸⁹ Of these, 146 occurred before the crisis and 62 occurred during the crisis.⁹⁰ Of the sponsor support instances during the crisis, at least 36 were in the United States.⁹¹ Kacperczyk and Schnabl identified 28 instances of sponsor support in the week after Lehman's default.⁹²

Economists at the Federal Reserve Bank of Boston, analyzing sponsor support from 2007 to 2011, found that seventy-eight funds received an aggregate of \$4.4 billion in sponsor support on a total of 123 occasions.⁹³ They found that the support came in response to Lehman holdings, distressed ABCP, and other troubled securities from several exposed funds.⁹⁴ They identified twenty-one instances in which the fund might have broken the buck without the support.⁹⁵ The largest single instance of sponsor support took place on September 14, 2008, when the Russell Money Market Fund's sponsor purchased the fund's \$336.8 million Lehman holdings, equaling 6.3% of the fund's total assets under management.⁹⁶

Sponsor support was not the only method fund managers used to address redemptions. Funds sold assets,⁹⁷ liquidated,⁹⁸ and shifted their portfolios from commercial paper to cash, Treasury securities, and other short-term securities.⁹⁹ MMFs' new conservatism made it harder for financial institutions to fund themselves, as they are highly dependent on MMFs as purchasers of their commercial paper.¹⁰⁰ As banks' ability to fund themselves in the commercial paper market declined, so too did their ability to make loans.¹⁰¹

E. The Government's Response

In response to the redemption pressures on MMFs, the size of the MMF sector,¹⁰² and the resulting pressures in the funding markets, the government stepped in with a number of emergency programs. The Federal Reserve stepped up efforts already underway before September 2008.¹⁰³ These programs appear to have had the desired effect of inducing investments in MMFs and stabilizing short-term debt markets.¹⁰⁴

Treasury's temporary guarantee program. The emergency program most directly relevant to MMFs was an unprecedented government insurance program for existing MMF investors, which the Department of the Treasury (Treasury) announced on September 19, 2008. The announcement noted that MMFs are important to investors and the financial institutions they fund and contended that “[m]aintaining confidence in the money market fund industry is critical to protecting the integrity and stability of the global financial system.”¹⁰⁵ Treasury went on to argue that, absent intervention, additional MMFs might break the buck, which would “undermine[] investor confidence.”¹⁰⁶ Under the program, which was open to all MMFs established under rule 2a-7, funds could elect to pay a premium to Treasury in exchange for a guarantee that redeeming investors would receive no less than one dollar for every dollar in MMF investments made on or before September 19, 2008. The guarantee expired on September 19, 2009.¹⁰⁷ The government's guarantee of the multi-trillion dollar MMF industry was backed by the \$50 billion Exchange Stabilization Fund,¹⁰⁸ which was created by the Gold Reserve Act of 1934 to help maintain stability in exchange rates and foreign exchange markets.¹⁰⁹

Taking advantage of the inexpensive insurance,¹¹⁰ most MMFs participated in the guarantee program.¹¹¹ As table 3 demonstrates, almost 1,500 MMFs representing \$3.2 trillion in

assets, or ninety-three percent of total MMF assets, participated during the initial phase from September 19 to December 18, 2008.¹¹² By its expiration on September 18, 2009, participation had fallen to sixty-eight percent of total MMF assets.¹¹³

Table 3. Temporary Guarantee Program Participation

Program phase	Participating investment companies (company could enroll multiple funds)	Assets of participating funds (\$ billions)	Participating funds' assets as percentage of MMF market	Premiums collected (\$ billions)
Phase 1 (Sept. 19, 2008–Dec. 18, 2008)	366	3,217.4	93	.3316
Phase 2 (Dec. 19, 2008–April 30, 2009)	352	3,118.0	83	.4817
Phase 3 (May 1, 2009–Sept. 18, 2009)	296	2,470.0	68	.3865

Source: CONG. OVERSIGHT PANEL, NOVEMBER OVERSIGHT REPORT: GUARANTEES AND CONTINGENT PAYMENTS IN TARP AND RELATED PROGRAMS 34, 35 fig.3 (2009) (based on information provided by the Department of the Treasury), available at http://fcic-static.law.stanford.edu/cdn_media/fcic-docs/2009-11-06%20COP%20Guarantees%20in%20TARP.pdf.

The program brought in approximately \$1.12 billion in premiums and did not pay any money out to MMF shareholders.¹¹⁴ The focus on the fees received under the program can be misleading if not measured against the fact that taxpayers bore the program's risks and administrative costs.¹¹⁵ Private insurers would only have assumed such risks, if at all, on a fund-by-fund basis using risk-based pricing. Because the government provided insurance as adverse events were unfolding, any assessment of the program must also take moral hazard costs into consideration. One of the features of MMFs that had always distinguished them from bank accounts was the absence of federal deposit insurance. Treasury's actions in September 2008 changed that and created new expectations among MMF investors that the government would back MMFs' stable net asset value in the future. Although a post-crisis amendment to the Gold

Reserve Act outlawed the future use of the Fund to rescue domestic MMFs,¹¹⁶ investors could infer that Treasury’s creative efforts to insure the stable net asset value of MMFs during 2008 would be repeated in a future crisis.¹¹⁷

Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility.

Complementing Treasury’s guarantee program was the Federal Reserve’s Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), which was also established on September 19, 2008 under section 13(3) of the Federal Reserve Act.¹¹⁸ The program enabled banks and other financial institutions to borrow from the Federal Reserve discount window in order to purchase high-quality ABCP from MMFs.¹¹⁹ The loans were collateralized by the ABCP. Federal Reserve Chairman Ben Bernanke explained that the AMLF “effectively channeled liquidity to the funds, helping them to meet redemption demands without having to sell assets indiscriminately.”¹²⁰ AMLF lending reached its high point of \$152 billion on October 1, 2008.¹²¹

Commercial Paper Funding Facility. On October 7, 2008, the Federal Reserve announced another program under section 13(3)¹²²—the Commercial Paper Funding Facility (CPFF).¹²³ Under the CPFF, the Federal Reserve Bank of New York established a special-purpose vehicle to purchase three-month commercial paper directly from issuers.¹²⁴ Only high-quality (as measured by credit ratings), U.S. dollar–denominated commercial paper was eligible, and caps limited the amount that could be purchased from any single issuer.¹²⁵ The goal of the program was to lower borrowing costs for commercial paper issuers and give the market confidence that issuers would be able to roll over their commercial paper when it matured.¹²⁶ The CPFF was a major buyer in

the commercial paper market and grew to hold over twenty percent of outstanding commercial paper.¹²⁷ The CPFF's role in the commercial paper markets gradually lessened, and the program expired on February 1, 2010.¹²⁸

In total, the Federal Reserve guaranteed over \$3 trillion of MMF assets and directly purchased approximately \$370 billion of commercial paper.¹²⁹ By February 2009, prime MMF assets under management had recovered to almost \$1.2 trillion—above October lows of roughly \$950 billion, but still down from September 2008 levels of near \$1.4 trillion.¹³⁰

IV. SEC's September 2010 Money Market Fund Reforms

The problems some MMFs experienced during the financial crisis inspired a rethinking of the regulatory structure for MMFs. The SEC finalized an initial set of reforms in 2010,¹³¹ but the commission¹³² and others anticipated that additional reforms would follow.¹³³ The nature of those further reforms is a current matter of debate. In order to put proposals for further reform—including our gating proposal—in context, a brief discussion of the SEC's 2010 reforms is necessary. These reforms tightened restrictions on MMFs' portfolio holdings, improved disclosure, and—importantly as a precursor for our proposal—strengthened MMF boards' ability to suspend redemptions.

A. Liquidity Requirements

The 2010 amendments to rule 2a-7 tightened MMFs' liquidity requirements. First, the cap on illiquid securities—securities that cannot be sold at carrying value within seven days—was dropped from ten percent of total fund assets to five percent of a fund's portfolio.¹³⁴ Second, the SEC required MMFs to invest at least ten percent of fund holdings in “daily liquid assets,” and at

least thirty percent of holdings in “weekly liquid assets.”¹³⁵ Third, amended rule 2a-7 requires periodic stress testing to ensure that funds are able to maintain a stable NAV based on “hypothetical events that include, but are not limited to, a change in short-term interest rates, an increase in shareholder redemptions, a downgrade of or default on portfolio securities, and the widening or narrowing of spreads between yields on an appropriate benchmark the fund has selected for overnight interest rates and commercial paper and other types of securities held by the fund.”¹³⁶ Finally, the amendments imposed a general liquidity requirement, pursuant to which MMFs must “hold securities that are sufficiently liquid to meet reasonably foreseeable shareholder redemptions.”¹³⁷

B. Portfolio Quality Requirements

The SEC’s 2010 amendments also tightened portfolio quality requirements.¹³⁸ First, the 2010 amendments lowered the cap on second tier securities from five percent to three percent.¹³⁹ Second, the amount an MMF can invest in second tier securities of a particular issuer was reduced from one percent to half a percent.¹⁴⁰ Third, the maximum allowed remaining maturity for second tier securities was reduced from 397 to 45 calendar days.¹⁴¹ Finally, the new rule 2a-7 includes stricter limits on MMFs’ investments in repurchase agreements.¹⁴²

C. Maturity Requirements

The SEC’s 2010 reforms also shortened maturity requirements. First, the dollar-weighted average portfolio maturity (WAM) for MMFs was reduced from 90 to 60 calendar days.¹⁴³ Second, a new dollar-weighted average life (WAL) limitation of 120 days was added.¹⁴⁴ Unlike the WAM, the WAL does not allow for exceptions to standard maturity calculations for

adjustable rate securities, variable rate securities, and other specially valued securities that MMFs are permitted to hold.¹⁴⁵

D. Disclosure Requirements

The 2010 amendments to rule 2a-7 also included new disclosure requirements. First, funds must post detailed portfolio holdings within five business days of each month's end and leave them posted for at least six months.¹⁴⁶ Second, MMFs must electronically file monthly with the SEC interactive data portfolio holdings on the new Form N-MFP.¹⁴⁷ Importantly, the information required on this form includes a market-based NAV (shadow NAV).¹⁴⁸ The SEC publicly discloses the Form N-MFP information sixty days “after the end of the month to which the information pertains.”¹⁴⁹ Before the 2010 amendments, there was no requirement for website disclosure, and funds only had to disclose shadow NAVs to the SEC twice a year, with a sixty-day delay.¹⁵⁰

E. Credit Ratings

Credit ratings issued by Nationally Recognized Statistical Rating Organizations (NRSROs)—credit rating agencies that are recognized and regulated by the SEC—have long been a component of MMF regulation under rule 2a-7.¹⁵¹ The 2010 amendments to rule 2a-7 added a requirement that MMF boards annually designate and assess the reliability of at least four NRSROs.¹⁵² The ratings of chosen NRSROs are used by the fund to determine whether a security meets the portfolio quality standards established by rule 2a-7.¹⁵³ A fund board may not exclusively rely on credit ratings, however, in determining whether the fund should acquire a security.¹⁵⁴ The SEC eliminated a prohibition on purchasing asset-backed securities (ABSs) that have not been rated by an NRSRO.¹⁵⁵

F. Suspension of Redemptions

The 2010 amendments made a number of changes to address situations in which an MMF has broken or is about to break the buck. First, the amendments require MMFs to develop the capability of redeeming shares at a price based on a market NAV rather than a stable NAV.¹⁵⁶ Second, the amendments make it easier for affiliates to purchase distressed assets without case-by-case SEC approval.¹⁵⁷ The final change, and the one that lays the groundwork for our proposal, allows funds to suspend redemptions, subject to certain conditions.

The SEC adopted this change under section 22(e) of the Investment Company Act, which provides that, except in certain limited circumstances, “[n]o registered investment company shall suspend the right of redemption, or postpone the date of payment or satisfaction upon redemption of any redeemable security in accordance with its terms for more than seven days . . .” unless one of three exceptions is satisfied.¹⁵⁸ The exceptions are as follows: (1) when trading on the New York Stock Exchange is closed or restricted; (2) when “an emergency exists as a result of which (A) disposal by the company of securities owned by it is not reasonably practicable or (B) it is not reasonably practicable for such company fairly to determine the value of its net assets”; or (3) any other time the SEC has allowed by order “for the protection of security holders of the company.”¹⁵⁹ Section 22(e) further directs the SEC to determine by rule “the conditions under which (i) trading shall be deemed to be restricted and (ii) an emergency shall be deemed to exist.”¹⁶⁰ The SEC had issued some exemptive orders under section 22(e),¹⁶¹ but did not adopt a permanent rule under section 22(e) until the 2010 amendments.

The new rule 22e-3, which replaced a temporary rule adopted during the crisis,¹⁶² provides an exemption from Investment Company Act section 22(e).¹⁶³ Under rule 22e-3, an

MMF is exempt from section 22(e) if the board, including a majority of the disinterested directors, (1) determines “that the extent of the deviation between the fund’s amortized cost price per share and its [market-based] current net asset value per share . . . may result in material dilution or other unfair results to investors or existing shareholders” and (2) has irrevocably approved the fund’s liquidation.¹⁶⁴ The SEC explicitly reserved the right to reverse or modify the exemption “[f]or the protection of shareholders.”¹⁶⁵

As the SEC explained when adopting it, the rule “is intended to reduce the vulnerability of investors to the harmful effects of a run on the fund, and minimize the potential for disruption to the securities markets.”¹⁶⁶ Nevertheless, the requirement that the fund be in the process of liquidation is a significant limitation on the rule’s ability to protect MMF investors from runs. Our proposal would remove that limitation.

V. Proposals for More Fundamental MMF Reform

With the 2010 amendments in place,¹⁶⁷ attention turned to more fundamental MMF reform. Arguably, the 2010 reforms, which homogenized MMF portfolios and thus increased the industry’s vulnerability to a common shock, made further reform even more necessary.¹⁶⁸ SEC Chairman Schapiro favored floating the NAV, instituting capital buffers, and requiring a minimum balance at risk,¹⁶⁹ reform ideas about which three of her colleagues had reservations.¹⁷⁰ Regulators,¹⁷¹ academics,¹⁷² and industry¹⁷³ have called for these and other reforms. Some of these ideas were incorporated in a formal proposal by the Financial Stability Oversight Council (FSOC) recommending that the SEC undertake certain reforms.¹⁷⁴ Separately, in June 2013, the SEC put forward three potential reform options: floating the NAV of prime institutional MMFs, allowing MMFs to impose emergency liquidity fees and redemption gates, or some combination

of those options.¹⁷⁵ The proposal also included some ancillary reforms related to transparency and diversification.¹⁷⁶

Before turning to our proposal, we discuss several of the key reform ideas proposed by academics, industry, and regulators. We primarily focus on those that have found their way into the FSOC and SEC proposals. An important point to keep in mind is that any of these proposals, including our own, would affect the risks and returns associated with investing in MMFs.¹⁷⁷ One proposal might be more tolerable for certain investors than it is for others. The variety in preferences for risk and return among investors makes designing the perfect solution for MMFs difficult and helps explain the struggles regulators have had in settling on a reform approach. The SEC could consider testing multiple options through multiple pilot programs.

A. Floating the Net Asset Value

One commonly recommended reform is that MMFs be required to float their net asset values, which means that MMF investors would buy and sell shares of the fund at a price that reflects the market values of the securities in their portfolios, rather than at a stable \$1.00 price. A stable or constant net asset value distinguishes MMFs from other types of mutual funds. MMFs typically value their shares using amortized cost accounting—as opposed to the mark-to-market or fair value accounting typically employed by mutual funds—and price them by rounding to the nearest penny.¹⁷⁸ Under the amortized cost method of valuation and the penny rounding method of pricing, “securities held by MMFs are valued at acquisition cost, with adjustments for amortization of premium or accretion of discount, instead of at fair market value, and the MMFs’ price per share is rounded to the nearest penny.”¹⁷⁹ The market value is reflected in the MMF’s so-called “shadow price,” which is published periodically by the fund.¹⁸⁰ If an MMF’s market

NAV remains within a narrow band between \$.995 and \$1.005 and the board does not “believe[] the extent of any deviation from the money market fund’s amortized cost price per share may result in material dilution or other unfair results to investors or existing shareholders,”¹⁸¹ the fund can transact shares at one dollar. MMFs strive to stay within this band to meet investor demand for a stable value product, and the investment limitations in rule 2a-7 make deviations relatively unlikely. If an MMF’s shadow price deviates by more than half a percent from amortized cost price per share, the fund has broken the buck and the board must “promptly consider what action, if any,” it should initiate.¹⁸²

The constant NAV is, from the investor’s perspective, a key feature of MMFs.¹⁸³ Because investors generally can withdraw one dollar for every dollar they put in, constant NAV MMFs are a popular cash management tool for retail and institutional investors.¹⁸⁴ Sales of MMF shares do not have the same tax implications under wash sale and capital gain rules as other mutual fund sales.¹⁸⁵ MMF investments are treated as cash equivalents for accounting purposes.¹⁸⁶ For retail investors, MMFs offer features such as check writing and ATM access.¹⁸⁷ These beneficial characteristics offset the lower yields that MMFs typically offer relative to other mutual funds.

Both the FSOC and the SEC proposed to require that MMFs employ a floating NAV instead of a constant NAV. The FSOC’s proposed approach would apply to all MMFs.¹⁸⁸ The SEC’s proposal distinguishes between retail and government funds, which could continue using the stable NAV, and prime institutional funds, which would have to use a floating NAV.¹⁸⁹ The rationale for the distinction is that, as discussed above, prime MMFs experience significantly higher levels of redemptions in times of market stress.¹⁹⁰ Distinguishing between institutional and retail funds is a difficult exercise that is likely to produce unintended consequences and

costs.¹⁹¹ The SEC’s proposal would require MMFs to shift to a \$1.0000 (four decimal places) per share pricing regime.¹⁹² Funds using a floating NAV

would sell and redeem shares at prices that reflect the value using market-based factors of their portfolio securities and would not penny round their prices. In other words, the daily share prices of these money market funds would “float,” which means that each fund’s NAV would fluctuate along with changes, if any, in the value using market-based factors of the fund’s underlying portfolio of securities.¹⁹³

Proponents of a floating NAV generally cite two problems with the stable NAV: MMF runs and false expectations about the safety of MMFs. First, they argue that the stable NAV creates a first-mover advantage for investors that run during a financial crisis.¹⁹⁴ When an MMF’s market-based NAV falls below \$1.00, investors have a significant incentive to redeem at the \$1.00 constant NAV, a price that is higher than the value of the proportionate share of underlying assets. Remaining investors are left with a less liquid and less valuable portfolio. The SEC explains the problem this way:

If investors redeem shares when the shadow price is less than \$1.00, the fund’s shadow price will decline even further because portfolio losses are spread across a smaller asset base. If enough shares are redeemed, a fund can “break the buck” due, in part, to heavy investor redemptions and the concentration of losses across a shrinking asset base. In times of stress, this reason alone provides an incentive for investors to redeem shares ahead of other investors: early redeemers get \$1.00 per share, whereas later redeemers may get less than \$1.00 per share even if the fund experiences no further losses.¹⁹⁵

When MMFs’ investors run, “systemically important borrowers such as large securities dealers could suddenly lose access to a significant source of funding,” which could “set off fire sales of securities by dealers and, potentially, the failures of systemically important financial institutions” could result.¹⁹⁶ By diminishing the incentive to run, floating the NAV would lessen the number and magnitude of MMF runs and the undesirable follow-on effects from such runs.¹⁹⁷

Floating the NAV could help to mitigate—albeit not eliminate—the first-mover advantage, but it would not address the core cause of MMF runs. Evidence suggests that

investors run from funds that have taken on riskier assets in order to bolster returns, that lack liquidity to meet redemptions, and that are unlikely to be bailed out by their sponsors.¹⁹⁸ Floating the NAV would not minimize concerns over the risk and liquidity of fund investments and therefore does not address the factors that incentivize runs.¹⁹⁹ If investors were anticipating bad events, they would still be incentivized to rapidly redeem from the fund.²⁰⁰ Floating the NAV would not mitigate the powerful incentives faced by investors to redeem before a fund's most liquid assets are exhausted to meet the redemption requests of other investors.²⁰¹

Mutual funds other than MMFs and foreign MMFs with floating NAVs have not been free of problematic redemptions. An analysis of floating NAV mutual fund data shows that negative shifts in a mutual fund's NAV resulting from investor redemptions signal a deterioration of a fund's anticipated future performance to other investors, thus stimulating even more investor redemptions.²⁰² Moreover, a study comparing the performance of European floating NAV MMFs and stable NAV MMFs during the week of Lehman's collapse found no economically or statistically significant evidence that the floating NAV structure made MMFs less susceptible to large-scale redemptions than stable NAV funds.²⁰³

A second problem cited by proponents is that the stable NAV misleads investors. Because the constant NAV enables MMFs to offer shareholders one dollar out for every one dollar in, some academics and regulators worry that investors—particularly retail investors—inappropriately consider MMFs to be as safe as bank accounts, which are backed by federal deposit insurance.²⁰⁴ Proponents of transitioning to a floating net asset value regime—in which the NAVs of MMFs would fluctuate to reflect the mark-to-market NAV—argue that doing so would counteract the perception that MMFs are equivalent to bank accounts.²⁰⁵ By sending a clear message to investors that MMFs are not equivalent to bank accounts but are

investments, the floating NAV would condition investors not to run at the prospect of an MMF's drop in value.²⁰⁶

Concerns over investors' misperception of MMFs as bank accounts are likely overstated. MMFs clearly disclose the fact that they are not insured bank accounts in fund prospectuses.²⁰⁷ Almost two-thirds of MMF assets are held by institutional investors such as wealth management firms or pension funds.²⁰⁸ Only one-fifth of MMF investments are in prime MMFs that are open to retail investors.²⁰⁹ Institutional investors are sophisticated enough to understand that their investments are not guaranteed at one dollar and that sponsor support, even if it has been forthcoming in the past to maintain the stable NAV, might not be available in the future. According to a recent survey, three-quarters of retail investors understand that MMFs are not guaranteed by the government.²¹⁰ In any case, retail customer confusion is not a legitimate basis for floating the NAV for institutional funds.²¹¹

Regardless of the potential benefits, shifting to a floating NAV is not costless. The tax, accounting, recordkeeping, and operational benefits of stable NAV funds would be compromised by moving to a floating NAV. Neither the FSOC nor the SEC offered concrete solutions for the tax problems associated with a floating NAV, but they did suggest that Treasury and the IRS are working on those issues.²¹² Indeed, the IRS issued a proposal regarding the treatment of MMF share sales under the wash sales rule.²¹³ MMFs and their shareholders could incur operational costs of adjusting to the floating NAV or—in the case of shareholders—switching to other investments.²¹⁴ The SEC attempted to lower the likelihood that investors would be forced out of MMFs into other cash equivalents by explaining that it

believes that an investment in a money market fund with a floating NAV would meet the definition of a "cash equivalent." We believe the adoption of floating NAV alone would not preclude shareholders from classifying their investments in money market funds as cash equivalents because fluctuations in the amount of cash received upon redemption

would likely be insignificant and would be consistent with the concept of a ‘known’ amount of cash.²¹⁵

As the FSOC concedes, however, even the transition to a floating NAV regulatory regime “could create financial instability” and the “ultimate long-term reaction” to requiring MMFs to float the NAV is “difficult to predict with any precision.”²¹⁶

B. Capital Buffers

A widely discussed alternative to the floating NAV is requiring MMFs to establish capital buffers to supplement shareholder equity. A capital buffer is a separate pool of cash or cash-like assets that is intended to shore up MMFs’ stable NAV.²¹⁷ Proponents argue that an appropriately sized capital buffer could curb runs:

Because capital providers absorb the first loss, the more capital a MMF holds, the lower the chance that ordinary MMF investors suffer a loss, holding asset portfolio risk constant. In other words, capital reduces both the strategic motive for runs and the probability of panic-based runs. Moreover, if an MMF has sustained a modest loss that has eroded some, but not all of its capital, an ordinary MMF shareholder is still protected by the remaining capital, and thus has less cause for concern—both that his shares will be impaired and that others will be concerned that their shares will be impaired. Thus, capital means that the threat of a run is less likely to become a self-fulfilling prophecy, in which investors strategically choose to run because they worry that others will run.²¹⁸

The FSOC included a capital buffer in two reform options that would preserve the stable NAV.

One option would combine a small risk-based capital buffer of up to one percent with a minimum balance at risk requirement.²¹⁹ Another option would combine a risk-based capital buffer of up to three percent with new diversification, disclosure, and liquidity requirements.²²⁰

In the first alternative, the capital buffer would be “primarily designed to absorb day-to-day variations in the mark-to-market value of MMFs’ portfolio holdings, and the [minimum balance at risk would] serve[] as the primary tool to reduce investors’ incentive to redeem their shares when a fund encounters stress.”²²¹ The capital buffer in the second alternative would “be

significantly larger to provide greater capacity to absorb losses, lower the probability that a fund would fully deplete its buffer, and, accordingly, reduce the incentive of investors to run during times of stress.”²²² Under both alternatives, each MMF would be responsible for the establishment of its own buffer.

As the FSOC recognizes in distinguishing its two proposals, an effective capital buffer would have to be quite large to prevent runs.²²³ Even the larger of the two capital buffers proposed by the FSOC would have been insufficient to stop the Reserve Primary Fund from breaking the buck.²²⁴ A similar event could overwhelm a capital buffer in the future.²²⁵

Even a small buffer could carry with it harmful unintended consequences and would be difficult to construct. As SEC Commissioner Daniel Gallagher has noted, a buffer that is too small could do more harm than good as it “would have given investors—especially retail investors, whom we are supposed to protect—a false sense of safety regarding their investments.”²²⁶ A small buffer, however, would serve another purpose, also noted by Commissioner Gallagher:

It became clear to me early on in this process that the only real purpose for the proposed buffer was to serve as the price of entry into an emergency lending facility that the Federal Reserve could construct during any future crisis—in short, the “buffer” would provide additional collateral to facilitate a Fed bailout for troubled MMFs.²²⁷

But a solution that is grounded in an expectation of a future government bailout is an unnecessary concession to the mistaken notion that MMFs cannot survive without a government backstop.

A pooled, industry-wide buffer would necessitate this same concession. An industry-wide buffer could be constructed as a public or quasi-private entity.²²⁸ Either way, proponents acknowledge that a Federal Reserve–funded backstop or access to the Fed’s discount window would be critical to a common pool’s success in stopping runs during crises.²²⁹

Regardless of whether it is pooled across the industry or not, building a sufficiently sizable buffer to prevent runs would likely be prohibitively costly and would take too long. According to the Investment Company Institute, the FSOC’s proposed risk-based three percent capital buffer would cost prime MMFs roughly \$37.3 billion over six years.²³⁰ Another Investment Company Institute estimate finds that a three percent industry-wide capital buffer—including all MMF assets except U.S. Treasury securities—would require approximately \$67.1 billion of capital to finance.²³¹

The difficulty of building a capital buffer would be aggravated by currently low MMF yields.²³² The need to finance a buffer in a low-yield market environment could motivate prime MMFs to invest in higher-yielding, and thus riskier, securities.²³³ Boards, shareholders, and advisers might feel comfortable with a higher-risk approach precisely because a buffer is in place.²³⁴ As experience during the last crisis suggests, the resulting higher-risk portfolios could fuel runs during times of market stress. As the FSOC acknowledged, the costs of establishing a buffer “could be passed on to MMF investors, in whole or in part, in the form of reduced yield.”²³⁵ The difficulties of building a buffer during a low-yield environment could be mitigated by requiring that buffers be built up during high-yield periods, but this would further extend the time needed to build a meaningful buffer.

Each of the several different ways to fund a capital buffer has problems. A buffer could be financed through the retained earnings of MMFs, but this would take a lot of time. According to the Investment Company Institute, an in-fund shareholder-financed capital buffer of just 0.5% would take over five years to accumulate under best-case market conditions.²³⁶ An adjustment would have to be made to allow for the accumulation of a buffer without causing an MMF to break the buck on the upside.²³⁷ A fund’s ability to build up a shareholder-financed buffer would

be slowed by a tax requirement that MMFs pay out at least ninety percent of annual earnings.²³⁸ Moreover, a shareholder-financed capital buffer could force MMF shareholders at the time a buffer is built up to subsidize future shareholders.²³⁹ SEC Chief Economist Craig M. Lewis finds that a buffer large enough to absorb more than day-to-day price fluctuations could “be a costly mechanism from the perspective of the opportunity cost of capital.”²⁴⁰

A buffer instead could be funded more quickly through subordinated debt or equity.²⁴¹ The subordinated debt or equity holders, who could be either third parties or the MMF’s sponsor, would serve as the fund’s first loss absorbers. One advantage of this approach is its ability to constrain MMFs’ risk-taking by putting a price on it.²⁴² However, the approach has several drawbacks. First, it could simply create a trigger for runs by non-subordinated shareholders seeking to get out before the subordinated shares are exhausted.²⁴³ Second, it could be prohibitively expensive; third-party investors would likely demand generous returns in exchange for absorbing MMFs’ tail risk.²⁴⁴ Subordinated equity, which would not have a credit rating, could be more difficult to sell than subordinated debt.²⁴⁵ During times of market stress, however, it might be very difficult to roll over subordinated debt.²⁴⁶ Third, MMF boards and advisers would face the difficult task of balancing subordinated and non-subordinated investors’ interests.²⁴⁷

A sponsor could fund the capital buffer by purchasing subordinated shares or simply setting aside cash and cash-like assets. According to the Investment Company Institute, even with high interest rates and fee revenues, MMFs would have to give up all fund advisers’ net earnings for at least sixteen years to finance a limited three percent capital buffer for assets other than Treasury securities and agency-issued securities.²⁴⁸ A sponsor-funding approach could give larger sponsors a competitive advantage over their smaller rivals.²⁴⁹

Regardless of how it is funded, a capital buffer would give investors little incentive to shy away from risky funds. Indeed, it could provide them the comfort they need to seek out risky MMFs.²⁵⁰

C. Minimum Balance at Risk

The minimum balance at risk (MBR) reform proposal offers a way to ensure that shareholders monitor funds' risk-taking. This approach is part of one of the FSOC's proposed alternatives for reform and is based on a proposal by economists at the Federal Reserve Bank of New York.²⁵¹

The proposal aims to dissuade MMF shareholders from redeeming in times of crisis by requiring that a portion of an investor's total investments in a fund be "held back" for a specified period during which the holdback amount would be available to absorb fund losses.²⁵²

The FSOC proposed a minimum balance at risk for nongovernment MMFs of three percent of the shareholder's highest account value over \$100,000 during the last thirty days and a holdback period of thirty days.²⁵³ As proposed by the FSOC, shareholders' minimum balance at risk would bear losses according to a subordination formula after the small capital buffer was exhausted, but only if the investor had made net redemptions of over \$100,000 from the fund during that time.²⁵⁴

The minimum balance at risk could force large shareholders—the ones most prone to run—to think carefully about their redemption decisions and thus could avert MMF runs.²⁵⁵ Early redeemers would pay a price for leaving early.²⁵⁶ As the description of the FSOC's proposal illustrates, however, the minimum balance at risk would be very difficult for MMFs to implement and would leave investors uncertain about how much they could withdraw and when.²⁵⁷ The FSOC acknowledges that the "operational and technology costs . . . could be

substantial” for MMFs and for institutional shareholders.²⁵⁸ Moreover, designing an effective minimum balance at risk would be difficult for regulators.

The analysis by the Federal Reserve Bank of New York economists offers a window into the difficulty faced by regulators trying to design an effective minimum balance at risk regulation. The authors look at different formulations and find that, combined with a 0.5% capital buffer, a minimum balance at risk of 2% might be adequate under optimistic assumptions, but at least 4% would be needed to stop redemptions under more pessimistic assumptions.²⁵⁹ This analysis suggests that the FSOC’s proposal might not be adequate to stem runs.

In addition to determining how high the minimum balance at risk should be, regulators would have to determine how long the holdback period should be. A delay period that is too short would make MMFs more vulnerable to runs, but a long delay period would greatly inconvenience MMF investors.²⁶⁰ The FSOC proposed a thirty-day delay period, in part because “about half of MMF portfolio assets mature in 30 days or less.”²⁶¹

A one-size-fits-all holdback period would likely bring with it disproportionate costs. An improperly calibrated minimum balance at risk could accelerate or precipitate a run. Hanson, Scharfstein, and Sunderam, while generally favorably inclined toward the minimum balance at risk approach, note that it could “make funds more run-prone in bad times than a regime using a capital buffer.”²⁶² Shareholders could redeem sooner than they would in the absence of the minimum balance at risk.²⁶³ Even during normal times, a minimum balance at risk would affect MMF shareholders adversely because it would interfere with normal redemption patterns.²⁶⁴ Industry surveys suggest that a minimum balance at risk requirement would significantly undermine MMFs’ usefulness.²⁶⁵ The day-to-day costs on MMFs and their shareholders do not appear to be offset by a clear improvement in MMF stability.

D. Triggered Liquidity Fees and Gates

The minimum balance at risk proposal, like the capital buffer approach, places a high cost on MMFs and their shareholders during normal times even though they would only provide a benefit during very rare, tail events. By contrast, the SEC proposed an alternative that would take effect only when warranted by circumstances. Under this proposal, the SEC would require MMFs to impose a two percent liquidity fee if weekly liquid assets fell below a liquidity threshold of fifteen percent of total assets.²⁶⁶ The SEC would also allow an MMF board to temporarily suspend investor redemptions—to “gate” the fund—if weekly liquid assets fell to the same trigger level and the board “determines that doing so is in the best interest of the fund.”²⁶⁷ Under this approach, MMFs would not have to float their NAVs, but the SEC would no longer permit the use of amortized cost accounting.²⁶⁸

The SEC’s proposal gives the board a limited measure of discretion. The liquidity fee could be overridden or reduced if a majority of the board determines that the liquidity fee “would not be in the best interest of the fund or determines that a lower fee would be in the best interest of the fund.”²⁶⁹ Boards would be permitted to suspend redemptions, but for no more than thirty days in any ninety-day period.²⁷⁰ Fees and gates would be lifted once the level of weekly liquid assets reached thirty percent, unless the board lifted them before then.²⁷¹

The fees and gates proposal offers a number of potential benefits. The fees would provide much-needed liquidity and support the NAV of the fund and thus help to mitigate the severity of redemptions.²⁷² Liquidity fees share with the minimum balance at risk approach the potential to discourage investors from redeeming during times of crisis and low fund liquidity.²⁷³ They both help to undercut the first-mover advantage. Unlike the minimum balance at risk approach, however, having liquidity fees would mean that MMFs and their shareholders would not need to

alter their day-to-day practices during times of market calm because those fees would only go into effect during times of crisis.²⁷⁴ The cost of implementing a liquidity fee is likely to be lower than the cost of many other proposed reform options for MMFs.²⁷⁵ MMFs and intermediaries, however, would have to incur the operational costs necessary to be prepared for the possibility that fees and gates would be imposed.²⁷⁶

Triggered, pre-sized liquidity fees and triggered gates raise similar regulatory design concerns as those raised by the minimum balance at risk approach. It is difficult to determine the appropriate trigger for fees and gates. Moreover, MMF shareholders could withdraw early in anticipation of a trigger being reached.²⁷⁷ Research shows that triggers in other contexts can inspire anticipatory trading volume.²⁷⁸ The SEC attempts to mitigate the concerns associated with predetermined triggers by allowing boards to decide not to implement a gate or liquidity fee even if the trigger is reached.²⁷⁹ As table 4 illustrates, each proposed solution offers benefits, but also has significant drawbacks. A better approach—the one to which we turn next—affords boards open-ended discretion to gate.

Table 4. Summary of Benefits and Drawbacks of MMF Reform Proposals

Proposal	Benefits	Drawbacks
Floating the NAV	<ul style="list-style-type: none"> • Diminishes the incentive to run from MMFs by reducing first-mover advantage. • Serves as a reminder that MMFs are not equivalent to bank accounts. 	<ul style="list-style-type: none"> • Does not prevent MMF runs and does not address the core issues driving them (liquidity, solvency, and risk of underlying investments). • Necessitates costly tax, accounting, recordkeeping, and operational changes. • Undermines the utility of MMFs by ending the \$1-in-\$1-out characteristic that is of great practical value to investors. • Doesn't allow fund boards discretion.
Capital buffers	<ul style="list-style-type: none"> • Reduces the likelihood that an MMF will "break the buck" by absorbing losses and voluminous redemption requests. 	<ul style="list-style-type: none"> • Neither halts MMF runs nor addresses the core issues driving them (liquidity, solvency, and risk of underlying investments). • Requires at least a 3% buffer to be effective in times of crisis, which would be a prohibitively costly endeavor, particularly in a low-yield environment. • A small buffer could give investors a false sense of security and the Fed a hook upon which to hang a future bailout. • Doesn't allow fund boards discretion.
Minimum balance at risk	<ul style="list-style-type: none"> • Diminishes the incentive to run from MMFs by making large redeemers pay for liquidity. • Protects nonredeeming shareholders by creating a buffer. • Encourages shareholders to monitor fund risk-taking. 	<ul style="list-style-type: none"> • Requires intricate regulator formulation of holdback periods and amounts, which if constructed improperly, could accelerate runs. • Creates substantial operational and technology costs to track required holdbacks. • Undermines MMFs' day-to-day utility by interfering with the normal redemption process. • Doesn't allow fund boards discretion.
Triggered liquidity fees & gating	<ul style="list-style-type: none"> • Diminishes the incentive to run during crisis by making redeeming investors pay for liquidity. • Protects nonredeeming shareholders by providing liquidity and supporting NAV. • Preserves the day-to-day usefulness of MMFs during normal times. 	<ul style="list-style-type: none"> • Requires regulator formulation of trigger, which, if improperly structured, could accelerate runs. • Causes anticipatory redemptions from an MMF as it approaches the trigger level. • Doesn't allow fund boards sufficient discretion.

VI. Voluntary Gating Proposal: A Risk-Pricing Approach to MMF Reform

The proposals for further reform made by the SEC and the FSOC threaten to fundamentally change MMFs without making them fundamentally safer. Enacting a reform that appears to address issues related to MMF redemptions, but fails to do so effectively, could lead to more serious harm than if nothing were done at all. Our proposed approach does not make fundamental changes in the way that money market funds work on a day-to-day basis, yet it offers MMF boards a flexible tool that fits neatly into their tried-and-true toolbox for addressing crisis situations when they occur. Moreover, our proposal does temper the completely unfettered redeemability that has been a core feature of MMFs. In doing so, it sends a message to MMF investors that in times of severe trouble, they may not be able to redeem. It conveys this appropriately sobering message without imposing unnecessary costs on MMFs, their shareholders, or their sponsors.

A. Description of the Proposal

We propose to allow all MMF boards of directors to halt redemptions (to gate) at any time and for any length of time without any conditions other than an affirmative board vote (including a vote of the majority of the fund's disinterested directors) that suspending redemptions is in the best interests of the fund and is necessary to protect the fund's stable net asset value and to ensure the equitable treatment of fund shareholders. A board's gating decision would take effect at the beginning of the next business day and would end as soon as the board determined that the conditions necessitating gating were no longer present. Boards could not delegate this responsibility to the fund's adviser or anyone else. MMFs would be required to disclose the existence of the board's authority to impose gates and, if gates were imposed, to inform fund shareholders promptly.

In order to implement this proposal, the SEC could adopt a rule under section 22(e) of the Investment Company Act, which generally prohibits registered investment companies, including MMFs, from halting redemptions for more than seven days.²⁸⁰ As noted above, section 22(e) allows limited restrictions on redeemability.²⁸¹ The SEC's existing rule 22e-3, which was adopted as part of the 2010 amendments, only permits MMFs to gate if they have voted to liquidate. The SEC's recent proposal would permit gating even if an MMF board had not decided to liquidate, but would impose triggering conditions on this authority. A fund's board could only gate if the fund had less than fifteen percent of its total assets in weekly liquid assets and only for thirty days unless the fund's total weekly assets in liquid assets reaches thirty percent before that.²⁸² Further, the board could gate for no more than thirty days in any ninety-day period.²⁸³

Under our proposal, a board would be free to impose gating once it has determined that gating is in the fund's best interest and is necessary for the protection of the fund's stable net asset value and the equitable treatment of fund shareholders. The board could impose gating whenever it deems necessary and for as long as it deems necessary. The ability to gate would afford a fund time to act to avert runs before they imperil the fund and its remaining shareholders and to dispose of illiquid securities in an orderly manner in the event of market distress. Funds would not need to resort to the sale of securities at fire-sale prices or to the disposal of liquid assets to meet redemption requests. Boards would be able to prevent first movers from benefiting at the expense of a fund's remaining shareholders.

With the new freedom would come new responsibility. Because our proposal grants boards the constant, broad ability to gate without any government-mandated trigger, boards would have a responsibility to consistently and carefully monitor market conditions in order to determine when gating is in the best interest of their fund.

As described earlier, state law, the Investment Company Act, and the rules under it—including rule 2a-7—already entrust boards with numerous responsibilities. They are charged with exercising these responsibilities diligently and in the best interests of the fund. Boards currently perform a variety of oversight functions for their funds.²⁸⁴ Our proposal would be a natural extension of these duties and would help directors fulfill their role as fiduciaries to the fund. Independent directors are given special leverage in making many of these decisions, and our proposal would do the same.

B. Benefits of the Proposal

Our proposed approach to gating would align the incentives of the MMF’s shareholders, sponsors, and boards more effectively than the other proposals for further reform. It would do so without the heavy costs associated with the other approaches.

Inspiring informed decision-making. First, our proposal relies on boards to make fund-specific decisions based on current facts, rather than on regulators to make technically difficult, anticipatory, industry-wide decisions. The board is uniquely positioned to assess relevant facts and circumstances in light of the high stakes for the future of the fund and its shareholders.²⁸⁵ In making the decision to gate, fund boards would be performing a function that is entirely consistent with their existing portfolio of responsibilities and their general oversight responsibility.²⁸⁶ The board’s existing legal duties of care and loyalty would ensure that they employ gating carefully.²⁸⁷

By introducing liquidity risk, our proposal forces investors to choose their funds wisely. The possibility that a fund will gate introduces a risk-reward trade-off presently not associated

with high-yielding, riskier MMFs like the Reserve Primary Fund. Higher yields would signal to investors increased liquidity risk. Shareholders would understand that riskier prime MMFs may be more at risk of gating—which would result in liquidity costs for investors—in times of crisis. An analysis of hedge funds—which employ discretionary gating²⁸⁸—reveals that more stringent restrictions on redemption requests are correlated with higher fund yields.²⁸⁹ Introducing this trade-off to MMFs would mitigate the incentives of investors and funds to chase yields by forcing them to take into account the cost they might incur in terms of reduced liquidity. The temptation to chase yields—as many investors appear to have done prior to the last crisis²⁹⁰—would be tempered by the knowledge that the highest-yielding funds are also the most likely to gate. To protect themselves, MMF investors would likely diversify across multiple funds and increase their risk monitoring. Investors might demand additional disclosures in order to facilitate their assessment of a fund’s level of risk.

MMFs, in turn, would compete based on safety as well as on yield because MMF investors care so much about access and liquidity. An analysis of the effects of gating and other redemption restrictions on hedge funds reveals that gating negatively affected investors’ perceptions of funds that gated and their fund families.²⁹¹ This is likely to be even more prevalent in the case of MMFs, which—in contrast to hedge funds—are expected to be liquid. Advisers would take steps to protect their reputation. Those steps could include sponsor support, which our proposal would not prohibit.²⁹² Efforts to manage reputational risk would also likely include managing MMFs’ portfolio risk. Particularly if decisions about sponsor support must be made public, advisers may prefer to emphasize ex ante portfolio risk management.²⁹³ In short, advisers would likely do everything in their power—including managing the MMF portfolio more cautiously and, when necessary, arranging sponsor support—to avoid a situation in which fund boards feel compelled to gate.

Preventing runs. Discretionary gating is a more effective way to stop runs than other proposals because boards can react very quickly and deal with the problem directly. Floating the NAV, establishing capital buffers, imposing a minimum balance at risk, or charging liquidity fees have the potential to disincentivize runs, but discretionary gating could actually stop a run. The halt in redemptions could, in turn, protect shareholders and prevent fire sales that spill into other markets.²⁹⁴ As Professor Mark Hannam, who supports either gates or liquidity fees, explains:

[S]uspension of convertibility provides the best mitigation against a loss spiral in the event of a widespread run on banks and MMFs. If, as in September 2008, MMFs experience unusually large redemption demands, which in turn would require significant sales of assets in falling markets, and there is a risk of a significant amplification of market distress, the best option for MMF sponsors, MMF investors and regulators is an orderly, industry-wide suspension of convertibility.²⁹⁵

Gates would insulate MMFs from distressed markets, afford MMFs the time to reestablish liquidity, and prevent them from contributing to the fire-sale dynamic.²⁹⁶

Gates have worked to address runs in other sectors. Economists Milton Friedman and Anna Schwartz find that gates mitigated the severity of runs on U.S. commercial banks in the early 1900s.²⁹⁷ Gates also have been effective at preventing runs in hedge funds. By December 2008, roughly 100 hedge funds had imposed restrictions on withdrawals.²⁹⁸ Professors John Dai and Suresh Sundaresan argue that gates and similar mechanisms specified in hedge fund contracts help to “mitigate systemic risk when large-scale redemptions ensue due to unanticipated banking crisis [sic] or other macroeconomic developments.”²⁹⁹

Ensuring equitable treatment of shareholders. Fund boards are obligated to make decisions that are in the best interest of the fund. A real concern with the current MMF regulatory structure is that first movers are able to exploit MMFs’ constant net asset value to their advantage—redeeming from a fund at a time. Under our proposal, an MMF’s board of

directors would be able to suspend redemptions in order to ensure that MMF shareholders are treated equitably. Boards could undercut the first-mover advantage, pursuant to which early redeemers get out while the fund still has liquid assets and at a share price that is higher than the mark-to-market value of the fund's underlying securities.³⁰⁰ The board could gate if certain investors were engaged in strategic redemption activity designed to profit from a mismatch between the fund's NAV and its shadow NAV. Likewise, the fund could gate if redemptions were depleting liquid assets too fast. A halt would allow the board time to sell assets in an orderly manner that would prevent one group of investors from profiting at the expense of others. Gating would ensure that institutional investors who tend to redeem early do not, by their actions, harm retail investors.³⁰¹ This approach to protecting late movers is a more blunt tool than a liquidity fee, but it is easier to design than a liquidity fee, which—in order to be effective—would have to vary with market conditions. Boards could be given the additional power to set calibrated liquidity fees.

Precluding gaming. Because there would be no predefined trigger under our proposal, it would be more difficult for fund shareholders to preemptively withdraw their funds than under an approach such as the SEC's triggered gates and fees proposal or the FSOC's minimum balance at risk proposal. Under our proposal, the board could close the gate effective at the beginning of the next business day. If the board announced the gate at the end of the day, there would not be an opportunity for shareholders to get their redemption requests in under the wire. By contrast, a predetermined trigger invites advance redemptions.³⁰² Gating by one fund could serve as a de facto trigger to prompt redemptions by shareholders of other funds. However, as the experience with runs in 2008 suggests, shareholders are able to discern among MMFs based on the content

of their portfolios. Assessing fund portfolios should be even easier with enhanced public disclosure about fund portfolios.

Ensuring ease of implementation. Unlike the other proposals, our proposal would not be costly to implement. Although MMFs, their service providers, and intermediaries would have to be prepared in the event the board halts redemptions, those preparations would be much less extensive than shifting to a floating NAV or implementing procedures for either liquidity fees or a minimum balance at risk. They would likely not impose unnecessary costs on fund shareholders or fund sponsors.³⁰³ Our approach, therefore, does not give large funds an advantage over small ones, as some of the other proposals would.

C. Potential Drawbacks of the Proposal

Although gating is the most effective way to prevent runs on money market funds without unduly affecting the way MMFs operate on a regular basis, there are several drawbacks that are worth considering.

Conflicts when directors sit on boards of multiple money market funds. Directors often sit on the boards of multiple funds and thus may face conflicts of interest with respect to gating decisions. For example, if the funds have overlapping portfolios, sales of securities by one fund can have a deleterious effect on the second fund. The director who serves on the board of both funds may prefer to suspend redemptions of the first fund to protect the NAV of the second fund. The questions of whether and when it is appropriate to sit on multiple boards is a broader question. Ultimately, however, board members have a fiduciary duty to each fund on the board of which

they serve and may not weigh external interests when making decisions that impact a fund for which they sit on the board.

Microprudential focus. Another objection to the gating approach is that it is, at its core, microprudential.³⁰⁴ Our proposal could negatively affect MMFs' purchasing share of the commercial paper market, a market in which MMFs are the largest purchasers.³⁰⁵ In the event of large-scale gating across MMFs due to a crisis, the commercial paper market—especially for financial institutions—may be disrupted. However, the responsibility of MMF boards is to their funds—not to financial companies that issue commercial paper, other fund counterparties, or the broader economy. Our financial markets would be well served if each financial institution paid close attention to its own risks, including its own tail risks. Attempting to regulate MMFs in order to protect the commercial paper issuers that depend on them for funding is a very indirect way to address concerns about financial firms' penchant for short-term financing. If individual firms, including MMFs, focus on managing their own risks, the markets as a whole will be more stable.

Industry-wide pressure to gate. Once one fund gates, there will be increased pressure on other MMFs to gate. The ability of MMF boards to control their own gating, which is central to this proposal, arguably could be nullified by industry-wide pressure to gate when other funds gate in order to avoid preemptive runs. Run contagion might force otherwise sound MMFs to gate. During a crisis, industry-wide pressure to gate could be intensified because so many MMFs hold the same assets.³⁰⁶ Widespread gating across the MMF industry could increase the risk of contagion, not reduce it.³⁰⁷ Fearing this, shareholders might pull their money out of MMFs during turbulent times, regardless of the strength of their own fund's portfolio.

If a lot of money market funds gate simultaneously, markets could react quite negatively. Mass gating is most likely to happen when many other bad things are also happening. Just as we saw in the fall of 2008, the confluence of bad events made it very hard to pinpoint the source of the crisis. Claims that the Reserve Primary Fund's breaking of the buck was the sole catalyst for runs on other funds are likely overstated, given the many other events happening that week, including Lehman's bankruptcy and the government's rescue of American International Group on the eve of bankruptcy. As discussed earlier, however, evidence from the crisis seems to indicate that investors were picking and choosing which funds to flee based on the quality and risk of those funds' portfolios.³⁰⁸

Decreasing attractiveness of money market funds to investors. The possibility that a fund could gate—even though remote—could cause investors to leave MMFs. As with a change to a floating NAV, these outflows could be disruptive. This concern is somewhat offset by the fact that careless gating would damage a fund complex's brand, so investors would have some assurance that gating would be only rarely employed. A subset of investors will not want to take on even this remote risk. In addition, some investors may find that any risk of redemption interruptions runs afoul of their investment guidelines. MMFs with open-ended gating also might not be appropriate investments for sweep accounts, 401(k) and other retirement plans, and other investors with strict liquidity guidelines.³⁰⁹ As with concerns about entities that rely on MMFs for funding, MMFs may not be the right investment vehicle for investors that demand absolute assurance of uninterrupted redemption. To the extent our proposed approach causes these investors to look for alternate investments, it could be a positive step toward helping investors find appropriate investments for their needs. Nevertheless, the potential transition costs for these

investors could be high as they search for alternate investment vehicles with less liquidity risk. Consequent MMF outflows could be disruptive to financial markets.

Inadequately responsive boards. Boards might be overly hesitant to use their gating power.

Because gating is extremely disruptive for investors, boards are likely to wait as long as they can to gate. Board delay would reduce the effectiveness of our proposal, one of the underlying strengths of which is its ability to be implemented quickly. The SEC worried that:

a purely discretionary trigger creates the risk that a fund board may be reluctant to impose restrictions, even when they would benefit the fund and the short-term financing markets. They may not impose such restrictions out of fear that doing so signals trouble for the individual fund or fund complex (and thus may incur significant business and reputational effects) or could incite redemptions in other money market funds in anticipation that fees may be imposed in those funds as well. Fully discretionary triggers also provide shareholders with little advance knowledge of when such a restriction might be triggered and fund boards could end up applying them in a very disparate manner.³¹⁰

Fund directors, however, are accountable to shareholders for their actions. MMFs with incompetent boards might end up liquidating as a result of redemption pressures. Granted, the liquidation of a poorly managed MMF can impose market-wide costs. The ability of other funds to gate could help to stem those costs. Moreover, a poorly run fund's liquidation would result in positive, long-term market discipline. MMFs that gate could lose assets to other funds with boards more willing to take action as needed.

Boards of directors are, in the words of former SEC Chairman Arthur Levitt, “in an ideal position to monitor new developments and trouble-shoot problems as they arise.”³¹¹ The possibility that some boards will not act quickly enough should not be a reason to deny discretionary gating as a tool to diligent boards, which the Investment Company Act and the SEC—by virtue of their heavy reliance on them—presume most fund boards to be.

VII. Conclusion

The events of 2008 demonstrated weaknesses in the MMF model and the unwillingness of the government to let the market exert its discipline. Accordingly, it is time to take another look at how MMFs can be made stronger. Unfortunately, many of the suggested regulatory reforms for MMFs are operationally unfeasible and could unnecessarily deprive corporations, individuals, and institutional investors of a useful cash management tool. Worse, some proposals could exacerbate the chance or severity of another run on MMFs.

On the other hand, our proposal to allow MMF boards to discretionarily gate their funds would reduce the likelihood and the severity of runs while maintaining most of the desirable features of MMFs. By placing this key strategic decision in the hands of the board of directors, it builds naturally on the already extensive protective responsibilities Congress and the SEC have entrusted to fund boards. Discretionary gating could encourage prudent risk management by MMFs and careful investment decisions by shareholders. The liquidity risk associated with gating will cause investors and managers alike to think twice about yield chasing. Gating will enable funds to avoid asset fire sales in times of crisis, which can harm funds. Our proposal equips fund boards with a powerful tool to ensure the equitable treatment of shareholders. It relies on the existing fiduciary responsibility of boards and on the unique insights of board members about how best to maintain the stability of individual funds. In doing so, our proposal offers a viable solution to make MMFs more resilient without undermining the useful role they play in the financial system.

Notes

¹ At the end of 2012, total net MMF assets equaled approximately \$2,693,523,000,000. See INV. CO. INST., 2013 INVESTMENT COMPANY FACT BOOK 178 (53d ed. 2013), available at http://www.ici.org/pdf/2013_factbook.pdf.

² Investment Company Act of 1940, 15 U.S.C. §§ 80a-1–80a-64 (2012).

³ See Timothy Q. Cook, *Regulation Q and the Behavior of Savings and Small Time Deposits at Commercial Banks and Thrift Institutions*, 64 FED. RESERVE BANK OF RICHMOND ECONOMIC REV. 14, 24–25 (1978), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2118208.

⁴ See *id.* at 14.

⁵ See *id.* at 14–15. The rate cap was raised several times during these years. See *id.* at 14–16.

⁶ See SEC Historical Society, *Developments in the Mutual Fund Industry—Money Market Funds*, Edited Transcript 1 (Mar. 29, 2005) (statement of David Silver) (“[M]oney market funds had actually first started in 1974, but by 1980, they had reached only about \$60 or \$70 billion. However, the spur of high interest rates was a tremendous push, and in the year 1981 over \$100 billion was added to money market funds.”), available at http://3197d6d14b5f19f2f440-5e13d29c4c016cf96cbbfd197c579b45.r81.cf1.rackcdn.com/collection/programs/Transcript_2005_0329_DMFIIMMF.pdf. See also Viktoria Baklanova, *Money Market Funds: An Introduction to the Literature* 10 (Working Paper, Jan. 26, 2010) (providing a chart of MMF growth), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1542983.

⁷ For a description of the growth in MMFs during this era, see Timothy Q. Cook & Jeremy G. Duffield, *Money Market Mutual Funds and Other Short-Term Investment Pools*, in INSTRUMENTS OF THE MONEY MARKET 156–72, The Fed. Reserve Bank of Richmond (Timothy Q. Cook & Robert K. Laroche eds., 1993), available at http://www.richmondfed.org/publications/research/special_reports/instruments_of_the_money_market/pdf/full_publication.pdf. See also Kenneth T. Rosen & Larry Katz, *Money Market Mutual Funds: An Experiment in Ad Hoc Financial Deregulation: A Note*, 38 J. FIN. 1011, 1016 (“[A]d hoc deregulation of the financial markets has led to a major and probably unnecessary distortion of credit flows. Money market funds have, for the most part, attracted funds from the regulated financial sector and merely recycled them back to the commercial lending system.”).

⁸ See Valuation of Debt Instruments and Computation of Current Price Per Share by Certain Open-End Investment Companies (Money Market Funds), Investment Company Act Release No. 13,380, 48 Fed. Reg. 32,555, 32,558 (July 18, 1983). For a discussion of the regulatory history of MMFs, see INV. CO. INST., REPORT OF THE MONEY MARKET WORKING GROUP 141–66 (2009), available at http://www.ici.org/pdf/ppr_09_mmwg.pdf.

⁹ 17 C.F.R. § 270.2a-7(c)(2)(i) & (c)(3) (2008).

¹⁰ *Id.* § 270.2a-7(c)(3).

¹¹ *Id.* § 270.2a-7(a)(21) (requiring that MMFs use two government-approved credit rating agencies, unless only one credit rating agency had rated a security at the time it was acquired by the fund). Government-approved rating agencies—so-called Nationally Recognized Statistical Rating Organizations (NRSROs)—have been the subject of considerable controversy in recent years. The industry has come under attack for its oligopolistic structure, its compensation scheme, and its poor performance with respect to rating asset-backed securities during the last crisis. The SEC has also been faulted for its opaque approval process for, and poor oversight of, NRSROs. For a discussion of NRSROs, see, e.g., Lawrence J. White, *An Assessment of the Credit Rating Agencies: Background, Analysis, and Policy* (Mercatus Center at George Mason University Working Paper Sept. 10, 2013); Lawrence J. White, *The Credit Rating Agencies*, 24 J. ECON. PERSP. 211 (2010); Mark Calabria & Emily McClintock Elkins, *Regulation, Market Structure, and Role of Credit Rating Agencies* (Cato Inst. Pol’y Analysis No. 74, 2012); Frank Partnoy, *The Siskel and Ebert of Financial Markets? Two Thumbs Down for the Credit Rating Agencies*, 77 WASH. U. L.Q. 619 (1999).

¹² For the regulatory definition of an eligible security at the time, see 17 C.F.R. § 270.2a-7(a)(10) (2008).

¹³ *Id.* § 270.2a-7(c)(4)(i)(A). This condition did not apply to government securities, and the cap was twenty-five percent for the first three business days after acquisition. *Id.*

¹⁴ *Id.* § 270.2a-7(c)(4)(i)(C).

¹⁵ *Id.* § 270.2a-7(c)(3)(ii)(A).

¹⁶ The SEC’s original adopting release for rule 2a-7 states that limitations on the permissible portfolio investments of money market funds will “provide a greater assurance that the money market fund will continue to be able to maintain a stable price per share that fairly reflects the current net asset value per share of the fund.” See Valuation of Debt Instruments and Computation of Current Price Per Share by Certain Open-End Investment Companies (Money Market Funds), Investment Company Act Release No. 13,380, 48 Fed. Reg. 32,555, 32,558 (July 18, 1983).

¹⁷ The SEC, for example, tightened the rule 2a-7 requirements in 1991 after several MMF advisers stepped in to buy commercial paper from MMFs after issuer defaults. *See* Revisions to Rules Regulating Money Market Funds, Investment Company Act Release No. 18,005, 56 Fed. Reg. 8113, 8115 (Feb. 27, 1991) (explaining that “the Commission decided to reexamine the conditions contained in rule 2a-7 in light of developments in the commercial paper market since the rule was adopted”) (footnote omitted).

¹⁸ 17 C.F.R. § 270.2a-7(c)(7)(ii)(B) (2008).

¹⁹ The terms “mutual fund” and “investment company” will be used interchangeably herein to refer to open-end SEC-registered investment companies, which are mutual funds that “stand[] ready to redeem (buy back) [their] shares from investors.” INV. CO. INST., *supra* note 1, at 236. The shares of closed-end funds, by contrast, are traded on an exchange at market prices. *Id.* at 230. MMFs are open-end funds.

²⁰ *See id.* at 207. Approximately ninety percent of mutual funds are organized in Massachusetts, Maryland, or Delaware. *See id.* at 207 fig.A.1.

²¹ Investment Company Act of 1940 § 16(a), 15 U.S.C. § 80a-16(a) (2012) (generally requiring that directors be elected by shareholders). In this paper, the term “directors” is used to encompass both directors of funds organized as corporations and trustees of funds organized as business trusts.

²² *See, e.g.*, Janus Capital Group v. First Derivative Traders, 131 S. Ct. 2296, 2304 (2011) (upholding the legal distinction between a fund and its investment adviser in the context of a question of whether the adviser is liable for a purportedly false statement in the fund prospectus).

²³ *See, e.g.*, S. Rep. No. 91-184, at 5 (1969) (“Since a typical fund is organized by its investment adviser which provides it with almost all management services and because its shares are bought by investors who rely on that service, a mutual fund cannot, as a practical matter sever its relationship with the adviser. Therefore, the forces of arm’s-length bargaining do not work in the mutual fund industry in the same manner as they do in other sectors of the American economy.”).

²⁴ For a description of fund organization and these functions, *see* INV. CO. INST., *supra* note 1, at 207–10.

²⁵ INV. CO. INST., *supra* note 8, at 34.

²⁶ *See* INV. CO. INST. & IND. DIRS. COUNCIL, OVERVIEW OF FUND GOVERNANCE PRACTICES, 1994–2010 5 (2011) (reporting that more than eighty percent of participating funds had a “unitary board structure,” in which all funds in the complex shared the same board and that some larger fund complexes instead employed a cluster board structure), *available at* http://www.idc.org/pdf/pub_11_fund_governance.pdf. As of 2010 the average independent director served on the board for forty-nine mutual funds. *Id.* at 4.

²⁷ JOHN J. BRENNAN ET AL., REPORT OF THE ADVISORY GROUP ON BEST PRACTICES FOR FUND DIRECTORS: ENHANCING A CULTURE OF INDEPENDENCE AND EFFECTIVENESS 14 (1999), *available at* http://www.ici.org/pdf/rpt_best_practices.pdf. *See also* Jones v. Harris Assocs., 559 U.S. 335, 351 (2010) (explaining that reviewing courts should defer to the board’s assessment in approving advisory fees as long as the board’s process was thorough and well-informed). *See infra* Table 1 for a list of specific board responsibilities under the Investment Company Act and SEC regulations.

²⁸ *See, e.g.*, INV. CO. INST., UNDERSTANDING THE ROLE OF MUTUAL FUND DIRECTORS 13 (Inv. Co. Inst., Investor Awareness Series, 1999), *available at* http://www.ici.org/pdf/bro_mf_directors.pdf.

²⁹ *See, e.g.*, Resale of Restricted Securities; Changes to Method of Determining Holding Period of Restricted Securities Under Rules 144 and 145, Investment Company Act Release No. 17,452, 55 Fed. Reg. 17,933, 17,940 n.61 (Apr. 30, 1990) (“The Commission believes that the ultimate responsibility for liquidity determinations is that of the board of directors. However, the board may delegate the day-to-day function of determining the liquidity of securities to the fund’s investment adviser, provided that the board retains sufficient oversight.”), *available at* <http://www.sec.gov/rules/final/1990/33-6862.pdf>.

³⁰ *See* INV. CO. INST. & IND. DIRS. COUNCIL, OVERSIGHT OF FUND PROXY VOTING 1 (2008) (“A fund’s board of directors typically delegates decisions about the voting of portfolio company proxies to the fund’s investment adviser, in recognition that proxy voting is part of the investment advisory process. This delegation is subject to the board’s continuing oversight.”), *available at* http://www.ici.org/pdf/ppr_08_proxy_voting.pdf; MUTUAL FUND DIRS. FORUM, PRACTICAL GUIDANCE FOR FUND DIRECTORS ON OVERSIGHT OF PROXY VOTING 3 (2012) (explaining that “the majority of Boards delegate some or all voting power to an adviser”), *available at* http://www.mfdf.org/images/uploads/newsroom/Oversight_of_Proxy_Voting.pdf.

³¹ BRENNAN ET AL., *supra* note 27, at ii.

³² See, e.g., *Burks v. Lasker*, 441 U.S. 471, 484 (1979) (explaining that Congress chose to rely on independent directors as an independent check on mutual funds “in preference to more direct controls on behavior”); *Tannenbaum v. Zeller*, 552 F.2d 402, 406 (1977) (Independent directors should “act in the role of ‘independent watchdogs’ who would assure that, in accordance with the preamble of the Investment Company Act, mutual funds would operate in the interest of all classes of their securities holders, rather than for the benefit of investment advisers, directors, or other special groups.”). See also *Investment Company Governance*, Investment Company Act Release No. 26520, 69 Fed. Reg. 46,378 (Aug. 2, 2004) (“Fund independent directors play a central role in policing the conflicts of interest that advisers inevitably have with the funds they advise.”), available at <http://www.sec.gov/rules/final/ic-26520.pdf>.

³³ Investment Company Act of 1940 § 10(a), 15 U.S.C. § 80a-10(a) (2012).

³⁴ For the statutory definition of an “interested person,” see Investment Company Act of 1940 § 2(a)(19), 15 U.S.C. § 80a-2(a)(19) (2012).

³⁵ INV. CO. INST., *supra* note 1, at 220.

³⁶ See *Interpretive Matters Concerning Independent Directors of Investment Companies*, Investment Company Act Release No. 24,083, 64 Fed. Reg. 59,877, 59,878 (Nov. 3, 1999) (citing *Hanson Trust PLC v. ML SCM Acquisition Inc.*, 781 F.2d 264, 273) (2d Cir. 1986); *Norlin Corp. v. Rooney, Pace Inc.*, 744 F.2d 255, 264 (2d Cir. 1984; *James Solheim, J.D.*, and *Kenneth Elkins, J.D.*, 3A *Flechter Cyc Corp* § 1029 (perm. ed.)), available at <http://www.gpo.gov/fdsys/pkg/FR-1999-11-03/pdf/99-27443.pdf>. See also FED. REGULATION OF SEC. COMM., A.B.A., *FUND DIRECTOR’S GUIDEBOOK* 98 (3d ed. 2006) (“The duties of directors under state law are characterized as a duty of loyalty and a duty of care. The duty of loyalty requires a director to exercise his or her powers in the interests of the fund and not in the director’s own interest or in the interest of another person or organization.”); 1 THOMAS P. LEMKE, GERALD T. LINS & A. THOMAS SMITH III, *REGULATION OF INVESTMENT COMPANIES* § 9.09 (2013) (“[D]uty of loyalty requires that directors act in the fund’s interest—not their own interests or those of persons or entities.”); ICI MUT. INSUR. COMP., *INDEPENDENT DIRECTOR LITIGATION RISK: A PRACTICAL GUIDE TO UNDERSTANDING AND REDUCING RISK TO FUND INDEPENDENT DIRECTORS IN CIVIL LITIGATION* app. at A-1 (2006) (“[D]irectors owe a duty to protect the interests of their fund and neither pursue interests of their own that are contrary to the interests of the fund nor place their own interests ahead of the interests of the fund.”), available at http://www.idc.org/pdf/icim_litigation_risk.pdf; DIV. INV. MGMT., SEC. & EXCHANGE COMM’N, *PROTECTING INVESTORS: A HALF CENTURY OF INVESTMENT COMPANY REGULATION*, at 255, n.10 (1992) (explaining state law duties of care and loyalty), available at <http://www.sec.gov/divisions/investment/guidance/icreg50-92.pdf>; MODEL BUSINESS CORP. ACT § 8.30 (2008) (setting forth the standards of conduct for directors).

³⁷ DIV. INV. MGMT., SEC. & EXCHANGE COMM’N, *supra* note 36, at 255, n.10.

³⁸ 64 Fed. Reg. at 59,878 n.13 (citing *Solomon v. Armstrong*, 1999 Del. Ch. LEXIS 62, 23 (Del. Ch. Mar. 25, 1999 and *James Solheim, J.D.*, and *Kenneth Elkins, J.D.*, 3A *Flechter Cyc Corp* § 1036 (perm. ed.))). See also FED. REGULATION OF SEC. COMM., *supra* note 36, at 100 (explaining that the business judgment rule is “a standard of judicial review used in analyzing director conduct to determine whether a board decision can be successfully challenged or a director should be held personally liable”).

³⁹ 15 U.S.C. § 80a-35(a) (2012).

⁴⁰ As long as they employ written guidelines and oversight, MMF boards are permitted to delegate many of their tasks to the investment adviser, but they remain ultimately responsible. 17 C.F.R. § 270.2a-7(e) (2013) (providing that “[t]he money market fund’s board of directors may delegate to the fund’s investment adviser or officers the responsibility to make any determination required to be made by the board of directors,” excluding certain enumerated responsibilities).

⁴¹ See, e.g., Marcin Kacperczyk & Philipp Schnabl, *How Safe Are Money Market Funds?*, 128 Q. J. ECONOMICS 1073, 1074 (2013) [hereinafter Kacperczyk & Schnabl, *How Safe Are MMFs?*] (Before the financial crisis, “investors regarded money funds as a low-risk investment that was almost as safe as cash. Indeed, for most of their history, money funds had invested in safe assets and had generated yields similar to those of U.S. Treasuries.”).

⁴² PRESIDENT’S WORKING GRP. ON FIN. MKTS., *MONEY MARKET FUND REFORM OPTIONS* 11 (2010), available at <http://www.sec.gov/rules/other/2010/ic-29497.pdf>.

⁴³ See MOODY’S INVESTORS SERV., *MONEY MARKET FUNDS: ABCP INVESTMENTS DECREASE 2* (2011), available at http://www.mfdf.org/images/uploads/blog_files/Moodys_MM_Fund_ABCP_Dec_2011.pdf.

⁴⁴ For a helpful description of how ABCP is issued and how ABCP programs function, see Richard G. Anderson & Charles S. Gascon, *The Commercial Paper Market, The Fed, and the 2007–2009 Financial Crisis*, 91 FED. RESERVE

BANK OF ST. LOUIS REV. 589, 591–93 (2009), available at <http://research.stlouisfed.org/publications/review/09/11/Anderson.pdf>.

⁴⁵ Daniel M. Covitz et al., *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market* 39 tbl.2 (Divs. of Research & Statistics and Monetary Affairs, Fed. Reserve Bd., Working Paper 2009-36, 2009), available at <http://www.federalreserve.gov/pubs/feds/2009/200936/200936pap.pdf>.

⁴⁶ See Sebastian Boyd, *BNP Paribas Freezes Funds as Loan Losses Roil Markets*, BLOOMBERG (Aug. 9, 2007), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aW1wj5i.vyOg>. See also Marcin Kacperczyk & Philipp Schnabl, *When Safe Proved Risky: Commercial Paper During the Financial Crisis of 2007–2009*, 24 J. ECON. PERSP. 29, 37–38 (2010) [hereinafter Kacperczyk & Schnabl, *When Safe Proved Risky*].

⁴⁷ Boyd, *supra* note 46 (quoting Alain Papiasse).

⁴⁸ For a contemporaneous manifestation of this concern, see, e.g., Fed. Reserve Bd., *Transcript of the Meeting of the Federal Open Market Committee* app. 1 at 170 (Sept. 18, 2007) (table 2 was titled “ABCP Spreads Widen as Concerns Increase Regarding Underlying Collateral”), available at <http://www.federalreserve.gov/monetarypolicy/files/FOMC20070918material.pdf>.

⁴⁹ Kacperczyk & Schnabl, *When Safe Proved Risky*, *supra* note 46, at 38. Average spreads for ABCP had increased from a high of six basis points above the federal funds rate in 2007 to forty-seven basis points in August 2007. Covitz et al., *supra* note 45, at 12.

⁵⁰ Enrique Schroth, Gustavo Suarez & Lucian A. Taylor, *Dynamic Debt Runs and Financial Fragility: Evidence from the 2007 ABCP Crisis* 17 (Working Paper, 2013), available at http://finance.wharton.upenn.edu/~luket/schroth-suarez_taylor_2013WP.pdf.

⁵¹ See Viral V. Acharya, Philipp Schnabl & Gustavo Suarez, *Securitization Without Risk Transfer*, 107 J. FIN. ECON. 515, 516 (2013) (“[S]omewhat surprisingly, this crisis in the ABCP market did not result (for the most part) in losses incurred by those actually invested in ABCP. Instead, the crisis had a profoundly negative effect on commercial banks because banks had (in large part) insured outside investors in ABCP by providing explicit guarantees to conduits, which required banks to pay off maturing ABCP at par.”).

⁵² Kacperczyk & Schnabl, *How Safe are MMFs?*, *supra* note 41, at 1077.

⁵³ Naohiko Baba et al., *US Dollar Money Market Funds and Non-US Banks*, BANK FOR INT’L SETTLEMENTS Q. REV. 65, 70 graph 2 (Mar. 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1516354.

⁵⁴ This decision apparently ran counter to the instincts of Reserve Fund founder Bruce Bent, who was quoted in November 2007 as saying, “When you get involved in this contest for when you can make 3 basis points more here or 2 basis points more there, that’s insane It’s not what I designed the money fund to do.” Shannon D. Harrington & Christopher Condon, *Bank of America, Legg Mason Prop Up Their Money Market Funds*, BLOOMBERG (Nov. 13, 2007) (quoting “Bruce Bent, chairman of Reserve Funds, who in 1970 created the first money-market fund”), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aWWjLp8m3JI&refer=home>.

⁵⁵ INV. CO. INST., *supra* note 8, at 57.

⁵⁶ *Id.* at 54–56.

⁵⁷ *Id.* at 55.

⁵⁸ *Id.* at 56.

⁵⁹ See, e.g., Sec. & Exchange Comm’n, Complaint ¶ 35, SEC v. Reserve Management Co. and The Reserve Primary Fund, No. 09 Civ. 4346 (S.D.N.Y. May 5, 2009) [hereinafter SEC Reserve Complaint] (“In 2007 and 2008, however, the Fund began to purchase riskier commercial paper issued by financial institutions, including Lehman, Merrill Lynch, and Washington Mutual.”).

⁶⁰ INV. CO. INST., *supra* note 8, at 57.

⁶¹ Minutes of the Joint Meeting of the Boards of Trustees of the Reserve Fund 1 (Sept. 15, 2008), available at http://www.sec.gov/spotlight/reserve_primary_fund_investors/osnato_declaration_exhibit_03.pdf.

⁶² *Id.* at 3.

⁶³ See, e.g., *id.* (noting that there were \$16.5 billion in redemption requests by 1 p.m. on September 15).

⁶⁴ Press Release, the Reserve (Sept. 16, 2008), available at http://www.primary-yieldplus-inliquidation.com/pdf/PressRelease2008_0916.pdf. See also SEC Reserve Complaint, *supra* note 59, ¶ 121.

⁶⁵ The Community Bankers U.S. Government Money Market Fund broke the buck in 1994. Its investors were primarily community banks and, at its high point, it had \$150 million in assets under management. Approximately twenty-seven percent of its assets were in structured notes that were either issued by, or guaranteed by, the U.S. government or a government agency. When these notes dropped in value because of an increase in interest rates, the

fund broke the buck. The fund liquidated and investors received \$0.961 per share. *See* In the Matter of Craig S. Vanucci and Brian K. Andrew, Order Instituting Public Administrative Cease-and-Desist Proceedings, Making Findings, and Imposing Remedial Sanctions and Cease-and-Desist Orders, SEC Administrative Proceeding File No. 3-9804 (Jan. 11, 1999), *available at* <http://www.sec.gov/litigation/admin/33-7625.txt>. The SEC, in an enforcement action against two employees of the fund's subadviser, explained that "[a]t 27-1/2 percent of the Fund's assets, the Notes were unsuitable investments for the Fund because they were too risky and volatile for a money market fund, such as the Fund, seeking to maintain a stable NAV. At no time did the Fund disclose that the level of the Notes held by the Fund would make it likely that the Fund would be unable to maintain a NAV of \$1.00 per share." *Id.* ¶ G.

⁶⁶ *See* Press Release, the Reserve, SEC Order Granted to Protect the Interest of Reserve Shareholders (Sept. 23, 2008) ("Any attempt to sell these securities to meet large redemption requests would result in sales at a loss, thereby affecting the Funds' net asset values."), *available at* http://www.primary-yieldplus-inliquidation.com/pdf/PressReleaseStatementofOrderPurpose2008_0923.pdf.

⁶⁷ Order Temporarily Suspending the Redemption of Investment Company Shares and Postponing Payment for Investment Company Shares Which Have Been Submitted for Redemption (Sept. 22, 2008), Investment Company Act Release No. 28,386, 73 Fed. Reg. 55,572 (Sept. 25, 2008), *available at* <http://www.sec.gov/rules/ic/2008/ic-28386.pdf>. This order covered both the Reserve Primary Fund and the Reserve U.S. Government Fund.

⁶⁸ *See* Press Release, the Reserve (Sept. 23, 2008), *supra* note 66.

⁶⁹ *See* Press Release, the Reserve, Reserve Primary Fund to Distribute \$215 Million (Jul. 15, 2010), *available at* http://www.primary-yieldplus-inliquidation.com/pdf/PrimaryDistribution_71510.pdf.

⁷⁰ For a discussion of this dynamic, *see* DIV. OF RISK, STRATEGY & FIN. INNOVATION, SEC. & EXCHANGE COMM'N RESPONSES TO QUESTIONS POSED BY COMMISSIONERS AGUILAR, PAREDES, AND GALLAGHER 1-4 (Nov. 30, 2012), *available at* <http://www.sec.gov/news/studies/2012/money-market-funds-memo-2012.pdf>.

⁷¹ *See, e.g.*, Lawrence Schmidt, Allan Timmerman & Russ Wermers, *Runs on Money Market Mutual Funds 3* (Working Paper, Jan. 2, 2013) (finding that "prime institutional funds exhibited much larger persistence in outflows than retail funds, although retail investors also exhibited some run-like behavior"), *available at* http://www.rhsmith.umd.edu/cfp/pdfs_docs/papers/WermersMoneyFundRuns.pdf.

⁷² Patrick E. McCabe, *The Cross Section of Money Market Fund Risks and Financial Crises 9* (Fed. Reserve Bd. Fin. & Econ. Discussion Series Working Paper, Sept. 12, 2010).

⁷³ According to the SEC staff, government MMF assets increased forty-four percent (\$409 billion) between September 2 and October 7, 2008. *See* DIV. OF RISK, STRATEGY & FIN. INNOVATION, *supra* note 70, at 7. Prime MMF assets fell twenty-four percent (\$428 billion) in the same time period. *Id.* *See also id.* at 8-9 (citing "flight to quality," "flight to liquidity," and "flight to transparency" as possible explanations for investors' shift into government MMFs); Schmidt, Timmerman & Wermers, *supra* note 71, at 8-9 (explaining that government MMF investors were attracted to "the liquidity of the Treasury market as safety").

⁷⁴ PRESIDENT'S WORKING GRP. ON FIN. MKTS., *supra* note 42, at 12.

⁷⁵ Kacperczyk & Schnabl, *How Safe are MMFs?*, *supra* note 41, at 1078.

⁷⁶ *See* McCabe, *supra* note 72, at 34. *See also* Jeffrey N. Gordon & Christopher M. Gandia, *Money Market Funds Run Risk: Will Floating Net Asset Value Fix the Problem?* 20 (Columbia Law & Econ. Working Paper No. 426, 2013), forthcoming 2014 COLUM. BUS. L. REV. (finding that, among European MMFs, those that "had 'reached for yield'" or had investment bank sponsors experienced highest run rates), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2134995; Philip E. Strahan & Basak Tanyeri, *Once Burned, Twice Shy: Money Market Fund Responses to a Systemic Liquidity Shock* 16 (July 2012) [J. FIN. & QUANTITATIVE ANALYSIS (forthcoming)] (Findings "strongly suggest that during the post-Lehman days investors fled risk. This finding is strong for both investor types, although magnitudes are larger for institutional investors."), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2156257; Baba et al., *supra* note 53, at 73 ("The largest redemptions occurred at institutional prime funds managed by the remaining securities firms and small independent managers, which investors doubted could support their funds.").

⁷⁷ Schmidt, Timmerman & Wermers, *supra* note 71, at 3.

⁷⁸ *Id.* at 38 ("[R]uns were more pronounced among funds that had less liquidity, in terms of their lower holdings of securities that matured with[in] seven days."). *See also* DIV. OF RISK, STRATEGY & FIN. INNOVATION, *supra* note 70, at 8 (citing "flight to liquidity" as a possible explanation for large shift away from prime MMFs into government MMFs).

⁷⁹ Schmidt, Timmerman & Wermers, *supra* note 71, at 14.

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- ⁸⁰ See Stephan Jank & Michael Wedow, *Sturm und Drang in Money Market Funds: When Money Market Funds Cease to Be Narrow* 30 (Deutsche Bundesbank, Discussion Paper Series 2, Banking and Financial Studies No. 20/2008, 2009) (“During the liquidity crisis of 2007/2008 we observe runs (ger.: “Sturm”) on money market funds with enhanced and illiquid portfolios. Money market funds with more liquid portfolios, in contrast, had no significant outflows and functioned as a safe haven.”), available at http://www.frbatlanta.org/documents/news/conferences/12fmc/12fmc_wedow.pdf.
- ⁸¹ *Id.* at 25 fig.6(b).
- ⁸² See Sergey Chernenko & Adi Sunderam, *Frictions in Shadow Banking: Evidence from the Lending Behavior of Money Market Funds* 3 (Fisher Coll. of Bus. Working Paper No. 2012-4) (Between June and August 2011, “for institutional funds, a 10% higher exposure to Eurozone banks is associated with an annualized outflow of 22% of assets.”), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1991171.
- ⁸³ MOODY’S INVESTOR SERV., SPONSOR SUPPORT KEY TO MONEY MARKET FUNDS 2 (Aug. 9, 2010) (discussing reasons for sponsor support), available at http://www.alston.com/files/docs/Moody%27s_Report.pdf.
- ⁸⁴ See *Hearing Before the Senate Committee on Banking, Housing, and Urban Affairs, Hearing on Perspectives on Money Market Mutual Fund Reforms*, at n.2 (June 21, 2012) (testimony of Mary Schapiro, Chairman, SEC) [hereinafter Schapiro Testimony], available at http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=66f4ddb5-4823-4341-bad9-8f99cdf5fe9a. Schapiro’s testimony did not include a list of instances of support and provided few supporting details.
- ⁸⁵ Money Market Fund Reform, Investment Company Act Release No. 28,807, 74 Fed. Reg. 32,688, 32,691 at n.38 (July 8, 2009) [hereinafter 2009 SEC Proposing Release]. See also Shannon D. Harrington & Christopher Condon, *Bank of America, Legg Mason Prop Up Their Money Market Funds*, BLOOMBERG (Nov. 13, 2007) (discussing some instances of sponsor support), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aWWjLp8m3J1I&refer=home>.
- ⁸⁶ See Schapiro Testimony, *supra* note 84, at 3.
- ⁸⁷ *Id.* at 6.
- ⁸⁸ 2009 SEC Proposing Release, *supra* note 85, at 32,693.
- ⁸⁹ MOODY’S INVESTORS SERV., *supra* note 83, 4 fig.2. Before the crisis, the biggest drivers of sponsor support were interest rates and Orange County’s default in 1994 and problems at General American Life Insurance in 1999. *Id.*
- ⁹⁰ *Id.*
- ⁹¹ *Id.* at 4.
- ⁹² See Kacperczyk & Schnabl, *How Safe Are MMFs?*, *supra* note 41, at 1111 & 1116–18 tbl.A.1.
- ⁹³ See Steffanie A. Brady et al., *The Stability of Prime Money Market Mutual Funds: Sponsor Support from 2007 to 2011* 4 (Fed. Reserve Bank of Boston, Working Paper RPA 12-3, 2012), available at <http://www.bos.frb.org/bankinfo/qau/wp/2012/qau1203.pdf>. The authors employ a narrow definition of sponsor support that excludes capital support agreements and letters of credit. *Id.* at 2.
- ⁹⁴ See *id.* at 12 tbl.3 & 13 tbl.4 (Fed. Reserve Bank of Boston, Working Paper RPA 12-3, 2012) (listing the issuers of defaulted securities held by prime MMFs and purchased by sponsors between 2007 and 2008 and the instances in which particular issuers’ defaulted securities prompted sponsor support in excess of 0.5 percent of an MMF’s assets under management).
- ⁹⁵ *Id.* at 5–6.
- ⁹⁶ *Id.* at 6 (“While such a large exposure seems inconsistent with the 5% concentration limit of Rule 2a-7, it is important to note that such limits are only in effect at the time of purchase. In addition, this Fund experienced significant net redemptions prior to the direct support action.”) (footnote omitted).
- ⁹⁷ See, e.g., Strahan & Tanyeri, *supra* note 76, at 19 (“[M]oney funds hit by large outflows responded by using maturing assets to meet cash demands and, when necessary, by selling their most liquid claims. As a result, the liquidity shock led such funds to be stuck holding high-risk assets such as commercial paper . . .”).
- ⁹⁸ See, e.g., Press Release, Federated, Inc., Federated Investors, Inc. and Putnam Investments Announce Transaction to Benefit Money Market Fund Shareholders (Sept. 24, 2008) (announcing liquidation of Putnam Prime Money Market Fund and transfer of assets and shareholders to Federated Prime Obligations Fund), available at <http://www.federatedinvestors.com/FII/about/pressrelease/detail.do?cid=65207>.
- ⁹⁹ See, e.g., PRESIDENT’S WORKING GRP. ON FIN. MKTS., *supra* note 42, at 12 (discussing the increase in short-term instruments and approximately twenty-five percent decline in commercial paper holdings by MMFs); Kacperczyk &

Schnabl, *When Safe Proved Risky*, *supra* note 46, at 41 (noting the decline in MMF holdings of commercial paper from 24.2% to 16.9% of assets within a month of Lehman’s bankruptcy).

¹⁰⁰ See HAL S. SCOTT, THE COMM. ON CAPITAL MKTS., REGULATION, INTERCONNECTEDNESS AND CONTAGION 128–30 (2012) (discussing commercial paper contraction), *available at* <http://capmktreg.org/2012/11/discussion-paper-examining-interconnectedness-and-contagion-in-the-financial-system/>; Kacperczyk & Schnabl, *When Safe Proved Risky*, *supra* note 46, at 40 (depicting the change in the spread between overnight commercial paper, financial commercial paper, and corporate commercial paper, respectively, and the federal funds rate after the Lehman bankruptcy). For a discussion of the role of MMFs in funding financial institutions, see Samuel G. Hanson, David S. Scharfstein & Adi Sunderam, *An Evaluation of Money Market Fund Reform Proposals* 5–6 (Working Paper, Dec. 20, 2012), *available at* http://www.people.hbs.edu/shanson/MMF_Reform_20121220_FINAL.pdf. See also Kacperczyk & Schnabl, *When Safe Proved Risky*, *supra* note 46, at 35–36 & 41 (discussing importance of MMFs as purchasers of commercial paper and effects of MMFs’ decreased purchases during the fall of 2008).

¹⁰¹ See, e.g., *id.* at 42 (“[M]any financial intermediaries used commercial paper to finance their lending activities and so the increased difficulty in issuing commercial paper sharply reduced their abilities to provide loans to firms and individuals.”). See also Tobias Adrian et al., *The Federal Reserve’s Commercial Paper Funding Facility*, FRBNY ECON. POL’Y REV. 29 (May 2011) (describing the shrinkage of, and declining maturities in, the commercial paper market and noting that “[t]he sudden disruption in commercial paper issuance led to higher issuing costs, forced asset sales by entities unable to raise cash, resulted in greater insolvency risk among issuers, and increased pressure on credit lines from commercial banks”), *available at* <http://www.newyorkfed.org/research/epr/11v17n1/1105adri.pdf>.

¹⁰² MMFs had \$3.5 trillion and prime MMFs had \$2.1 trillion in assets under management as of September 10, 2008. Burcu Duygan-Bump et al., *How Effective Were the Federal Reserve Emergency Liquidity Facilities? Evidence from the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility*, 68 J. FINANCE 715, 718 (2013) (citing iMoneyNet).

¹⁰³ See Stephen G. Cecchetti, *Crisis and Responses: The Federal Reserve in the Early Stages of the Financial Crisis*, 23 J. ECON. PERSP. 51, 64 (2009) (discussing government actions through May 2008), *available at* http://dss.ucsd.edu/~grondina/pdfs/week5_cecchetti_earlyfedresponse.pdf. See also Kacperczyk & Schnabl, *When Safe Proved Risky*, *supra* note 46, at 42–43 (discussing Federal Reserve’s actions in wake of ABCP troubles in 2007).

¹⁰⁴ See, e.g., PRESIDENT’S WORKING GRP. ON FIN. MKTS., *supra* note 42, at 13 (“The announcements of these government programs substantially slowed the run on prime MMFs. Outflows from prime MMFs diminished to about \$65 billion in the week after the announcements and, by mid-October, these MMFs began attracting net inflows. Moreover, in the weeks following the government interventions, markets for commercial paper and other short-term debt instruments stabilized considerably.”) (footnote omitted); TREASURY STRATEGIES, INC., *DISSECTING THE FINANCIAL COLLAPSE OF 2007–2008* 11 (2012) (indicating an inflow of \$132 billion into prime MMFs from September 22 through the end of 2008), *available at* <http://www.sec.gov/comments/4-619/4619-188.pdf>.

¹⁰⁵ Press Release, U.S. Dep’t of Treasury, Treasury Announces Guaranty Program for Money Market Funds (Sept. 19, 2008), *available at* <http://www.treasury.gov/press-center/press-releases/Pages/hp1147.aspx>.

¹⁰⁶ *Id.* See also U.S. DEP’T OF TREASURY, *Frequently Asked Questions About Treasury’s Temporary Guarantee Program for Money Market Funds* (Sept. 29, 2008), <http://www.treasury.gov/press-center/press-releases/Pages/hp1163.aspx>.

¹⁰⁷ Press Release, U.S. Dep’t of Treasury, Treasury Announces Extension of Temporary Guarantee Program for Money Market Funds (Nov. 24, 2008) (extending program until April 30, 2009), *available at* <http://www.treasury.gov/press-center/press-releases/Pages/hp1290.aspx>; Press Release, U.S. Dep’t of Treasury, Treasury Announces Extension of Temporary Guarantee (Mar. 31, 2009) (extending program through September 18, 2009), *available at* <http://www.treasury.gov/press-center/press-releases/Pages/tg76.aspx>.

¹⁰⁸ Press Release, U.S. Dep’t of Treasury, Treasury Announces Guaranty Program for Money Market Funds, *supra* note 105.

¹⁰⁹ Gold Reserve Act of 1934 § 10, Pub. L. No. 73-87, 48 Stat. 337, 341–42 (codified as amended at 31 U.S.C. § 5302 (2012)). For a pre-crisis explanation of the purpose of the Exchange Stabilization Fund, see FED. RESERVE BANK OF NEW YORK, *Fedpoint: Exchange Stabilization Fund* (May 2007) (explaining that the Fund “buys and sells foreign currency to promote exchange rate stability and counter disorderly conditions in the foreign exchange market” and “provide[s] short-term credit to foreign governments and monetary authorities and to hold and administer Special Drawing Rights”), <http://www.newyorkfed.org/aboutthefed/fedpoint/fed14.html>. By mentioning

“global instability” in its announcement of the program, Treasury may have been seeking to justify a nontraditional use of the Exchange Stabilization Fund.

¹¹⁰ The fees MMFs paid depended on their net asset value. *See* CONG. OVERSIGHT PANEL, NOVEMBER OVERSIGHT REPORT: GUARANTEES AND CONTINGENT PAYMENTS IN TARP AND RELATED PROGRAMS 34 (2009) (detailing fees during different program phases), *available at* http://fcic-static.law.stanford.edu/cdn_media/fcic-docs/2009-11-06%20COP%20Guarantees%20in%20TARP.pdf.

¹¹¹ To date, the identities of the MMFs that enrolled in Treasury’s Temporary Guarantee Program have not been made publicly available. By contrast, the names of other participants in federal emergency programs have been released, albeit reluctantly. *See, e.g.*, Bob Ivry et al., *Secret Fed Loans Gave Banks \$13 Billion Undisclosed to Congress*, BLOOMBERG (Nov. 27, 2011) (reporting on court case that forced the Federal Reserve to release the list of over 21,000 transactions that took place between the Federal Reserve and 190 foreign and domestic firms), <http://www.bloomberg.com/news/2011-11-28/secret-fed-loans-undisclosed-to-congress-gave-banks-13-billion-in-income.html>.

¹¹² CONG. OVERSIGHT PANEL, *supra* note 110, at 35.

¹¹³ *Id.*

¹¹⁴ *See, e.g.*, Press Release, U.S. Dep’t of Treasury, Treasury Announces Expiration of Guarantee Program for Money Market Funds (Sept. 19, 2009) (highlighting the fact that that the program “generate[d] \$1.2 billion in participation fees for U.S. taxpayers”), *available at* <http://www.treasury.gov/press-center/press-releases/Pages/tg293.aspx>.

¹¹⁵ For a discussion of the need to consider risk as well as return, *see* Harry Markowitz, *Portfolio Selection*, 7 J. FINANCE 77 (1952).

¹¹⁶ Emergency Economic Stabilization Act of 2008 § 131(b), 12 U.S.C. § 5236(b) (“The Secretary is prohibited from using the Exchange Stabilization Fund for the establishment of any future guaranty programs for the United States money market mutual fund industry.”).

¹¹⁷ *See, e.g.*, Chernenko & Sunderam, *supra* note 82, at 14 (“[O]nce conditions normalized after the crisis, incentives to take risk remained: the funds that took larger risks before Lehman also took on exposure to Eurozone banks during the spring of 2011.”). *But see* Strahan & Tanyeri, *supra* note 76, at 26 (downplaying moral hazard concerns of the Treasury guarantee program on the grounds that participating MMFs did not increase their risk profiles). The fact that funds that directly participated in the program reduced their risk profiles immediately after the crisis is not dispositive proof that moral hazard is not a problem.

¹¹⁸ *See* Federal Reserve Act, 12 U.S.C. § 343 (2008). *See also* Fed. Reserve Bd., *Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF)* (Dec. 13, 2012), *available at* http://www.federalreserve.gov/newsevents/reform_amlf.htm.

¹¹⁹ Press Release, Fed. Reserve Bd. (Sept. 19, 2008), *available at* <http://www.federalreserve.gov/monetarypolicy/20080919a.htm>.

¹²⁰ Ben S. Bernanke, Chairman, Federal Reserve Bd. of Governors, Stamp Lecture, London, England (Jan. 13, 2009), *available at* <http://www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm>.

¹²¹ CONG. OVERSIGHT PANEL, *supra* note 110, at 54 n.260.

¹²² Federal Reserve Act, 12 U.S.C. § 343 (2008).

¹²³ For a discussion of the CPFF, the conditions out of which it arose, and the Federal Reserve’s objectives, *see* Adrian et al., *supra* note 101; Anderson & Gascon, *supra* note 44, at 607–9. *See also* Press Release, Fed. Reserve Bd., Board Announces Creation of the Commercial Paper Funding Facility (CPFF) to Help Provide Liquidity to Term Funding Markets (Oct. 7, 2008), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20081007c.htm>.

¹²⁴ *See* Fed. Reserve Bank of New York, Commercial Paper Funding Facility: Programs Terms and Conditions (Oct. 14, 2008), http://www.newyorkfed.org/markets/CPFF_Terms_Conditions.html.

¹²⁵ *Id.*

¹²⁶ Bernanke, *supra* note 120 (“By serving as a backup source of liquidity for borrowers, the Fed’s commercial paper facility was aimed at reducing investor and borrower concerns about “rollover risk,” the risk that a borrower could not raise new funds to repay maturing commercial paper. The reduction of rollover risk, in turn, should increase the willingness of private investors to lend, particularly for terms longer than overnight.”).

¹²⁷ *See* Anderson & Gascon, *supra* note 44, at 608 & fig.11.

¹²⁸ Adrian et al., *supra* note 101, at 35–36.

¹²⁹ Kacperczyk & Schnabl, *When Safe Proved Risky*, *supra* note 46, at 48. The Federal Reserve also created the Money Market Investor Funding Facility “to provide liquidity to U.S. money market mutual funds in order to increase their ability to meet redemption requests and to enhance money market investors’ willingness to invest in money market instruments, particularly for terms longer than overnight.” Bd. of Govs. of the Fed. Res. System, Regulatory Reform: Money Market Investor Funding Facility (last visited Feb. 27, 2014), *available at* http://www.federalreserve.gov/newsevents/reform_mmiff.htm. The program was never used and expired on October 30, 2009. *Id.*

¹³⁰ INV. CO. INST., *supra* note 8, at 67 & fig.6.9.

¹³¹ Money Market Fund Reform, Investment Company Act Release No. 29,132, 75 Fed. Reg. 10,059 (Mar. 4, 2010) (amending or adding 17 C.F.R. §§ 270.2a-7, 270.17a-9, 270.22e-3, 270.30b1-6T, 270.30b1-7 & 274.201) [hereinafter SEC 2010 Adopting Release], *available at* <http://www.sec.gov/rules/final/2010/ic-29132fr.pdf>.

¹³² Press Release, Sec. & Exchange Comm’n, SEC Approves Money Market Reforms to Better Protect Investors (Jan. 27, 2010) (quoting SEC Chairman Mary Schapiro) (these reforms were billed as the “first step” of MMF regulatory reform), *available at* <http://www.sec.gov/news/press/2010/2010-14.htm>.

¹³³ *See, e.g.*, U.S. DEP’T OF TREASURY, FINANCIAL REGULATORY REFORM: A NEW FOUNDATION (2009), *available at* http://www.treasury.gov/initiatives/documents/finalreport_web.pdf.

¹³⁴ 17 C.F.R. § 270.2a-7(c)(5)(i) (2013). Until 2010, MMFs were subject to the generally applicable ten percent limit under the Investment Company Act. *See* Investment Company Act of 1940, 15 U.S.C. § 80a-5(b)(1). *See also* Investment Company Act Release No. 13,380, 48 Fed. Reg. 32,555, 32,561 (July 18, 1983) (the SEC’s accompanying release for the first rule 2a-7, in which it states that “money market funds relying on [rule 2a-7], like any other open-end management company, must limit their portfolio investments in illiquid instruments to not more than ten percent of their net assets”), *available at* <http://www.sec.gov/rules/final/1983/ic-13380.pdf>; 17 C.F.R. § 270.2a-7(a)(19) (2013) (defining “illiquid security”).

¹³⁵ *Id.* § 270.2a-7(c)(5)(ii) & (iii). The SEC defines “daily liquid assets” as cash, U.S. government debt, or “securities that will mature or are subject to a demand feature that is exercisable and payable within one business day.” *Id.* § 270.2a-7(a)(8). “Weekly liquid assets” are defined as cash, U.S. government debt, other government securities with a maturity of less than sixty days, or “securities that will mature or are subject to a demand feature exercisable and payable within five business days.” *Id.* § 270.2a-7(a)(32).

¹³⁶ *Id.* § 270.2a-7(c)(10)(v).

¹³⁷ *Id.* § 270.2a-7(c)(5).

¹³⁸ Rule 2a-7 places securities in several different categories. An “eligible security” is generally a security with a remaining maturity of 397 calendar days or less that either has received a credit rating agency rating in one of the two highest short-term rating categories or is an unrated security that the board has determined to be of comparable rating. *Id.* § 270.2a-7(a)(12). A first tier security is generally an eligible security that has received a short-term rating in the highest category or is of comparable quality as determined by the board. *Id.* § 270.2a-7(a)(14). A second tier security is any other eligible security. *Id.* § 270.2a-7(a)(24).

¹³⁹ *Id.* § 270.2a-7(c)(3)(ii).

¹⁴⁰ *Id.* § 270.2a-7(c)(4)(i)(C).

¹⁴¹ *Id.* § 270.2a-7(c)(3)(ii).

¹⁴² The SEC amended rule 2a-7 to require that repurchase agreements be collateralized by cash or government securities. *See id.* § 270.2a-7(a)(5) (defining “collateralized fully”) & *id.* § 270.2a-7(c)(4)(ii)(A) (requiring that repurchase agreements be collateralized fully); SEC 2010 Adopting Release, *supra* note 131, at 10,080 (describing change in permissible collateral for repurchase agreements). The SEC also reinstated a requirement that the board or its delegate assess the creditworthiness of repurchase agreement counterparties. 17 C.F.R. § 270.2a-7(c)(4)(ii)(A) (2013).

¹⁴³ *Id.* § 270.2a-7(c)(2)(ii).

¹⁴⁴ *Id.* § 270.2a-7(c)(2)(iii).

¹⁴⁵ *See* SEC 2010 Adopting Release, *supra* note 131, at 10,072 (“Unlike weighted average maturity, the weighted average life (or “WAL”) of a portfolio is measured without reference to any rule 2a-7 provision that otherwise permits a fund to shorten the maturity of an adjustable-rate security by reference to its interest rate reset dates.”).

¹⁴⁶ 17 C.F.R. § 2a-7(c)(12) (2013).

¹⁴⁷ 17 C.F.R. § 270.30b1-7(a) (2013). *See also* Sec. & Exchange Comm’n, Form N-MFP (last accessed Sept. 9, 2013), *available at* <http://www.sec.gov/about/forms/formn-mfp.pdf>.

¹⁴⁸ See *id.* at 3–4 (Items 18 and 25 of Form N-MFP).

¹⁴⁹ 17 C.F.R. § 270.30b1-7(b) (2013).

¹⁵⁰ 17 C.F.R. § 274.101, Sub-item 74W (2008). See also SEC 2010 Adopting Release, *supra* note 131, at 10,085 n.337.

¹⁵¹ See Securities Exchange Act of 1934 § 3(a)(62), 15 U.S.C. § 78c(a)(62) (2012) (defining NRSRO). A discussion of the evolution of NRSROs and their regulatory framework is beyond the scope of this article. For a consideration of these issues, see, e.g., White, *An Assessment of the Credit Rating Agencies*, *supra* note 11, at 210. The Dodd-Frank Act required the SEC and other agencies to remove references to credit ratings from their regulations. Dodd-Frank § 939A [amending 15 U.S.C. § 78o-7 (2010)]. The SEC proposed, but did not adopt, a rule to implement § 939A with respect to the Investment Company Act. See References to Credit Ratings in Certain Investment Company Act Rules and Forms, Investment Company Act Release No. 29,592, 76 Fed. Reg. 12,896, 12,898 (proposed Mar. 9, 2011) (amending 17 C.F.R. 239, 270 & 274).

¹⁵² 17 C.F.R. § 270.2a-7(a)(11) (2013).

¹⁵³ See, e.g., *id.* § 270.2a-7(a)(12) (defining “eligible security”); *id.* § 270.2a-7(a)(14) (defining “first tier security”); and *id.* § 270.2a-7(a)(24) (defining “second tier security”).

¹⁵⁴ *Id.* § 270.2a-7(c)(3)(i) (stating that “[t]he money market fund shall limit its portfolio investments to those United States Dollar-Denominated securities that the fund’s board of directors determines present minimal credit risks (which determination must be based on factors pertaining to credit quality in addition to any rating assigned to such securities by a Designated NRSRO)”).

¹⁵⁵ See SEC 2010 Adopting Release, *supra* note 131, at 10,070 (“NRSROs rapidly downgraded ABSs from their status as first tier securities over a short time period during 2007–2008. The NRSROs thus did not seem to play a role in buttressing the minimal credit risk analysis of fund management sufficient to warrant a requirement that all ABSs be rated to be eligible for money market fund investment. We would otherwise have expected a slower, more orderly downgrading process for these ABSs, which would have permitted money market funds to gradually roll off the paper.”).

¹⁵⁶ 17 C.F.R. § 270.2a-7(c)(13) (2013) (requiring that an MMF “(or its transfer agent) shall have the capacity to redeem and sell securities issued by the fund at a price based on the current net asset value per share [including] the ability to redeem and sell securities at prices that do not correspond to a stable net asset value or price per share”).

¹⁵⁷ See rule 17a-9 [17 C.F.R. § 270.17a-9 (2013)] and SEC 2010 Adopting Release, *supra* note 131, at 10,088–89 (explaining amendments to rule 17a-9). See also 17 C.F.R. § 270.2a-7(c)(7)(iii)(B) (2013) (requiring MMFs to promptly notify the SEC of purchases under rule 17a-9).

¹⁵⁸ Investment Company Act of 1940 § 22(e), 15 U.S.C. § 80a-22(e) (2012).

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ See, e.g., The Reserve Fund, on Behalf of Two of Its Series, the Primary Fund and the U.S. Government Fund: Order Temporarily Suspending Redemption of Investment Company Shares and Postponing Payment for Investment Company Shares Which Have Been Submitted for Redemption for Which Payment Has Not Been Made Pursuant to Section 22(e)(3) of the Investment Company Act of 1940, Investment Company Act Release No. 28,386, 73 Fed. Reg. 55,572 (Sept. 25, 2008); Reserve Municipal Money-Market Trust et al., Notice of Application and Temporary Order, Investment Company Act Release No. 28,466, 73 Fed. Reg. 64,993 (Oct. 31, 2008); Order Temporarily Suspending Redemption of Investment Company Shares Pursuant to Section 22(e)(3) of the Investment Company Act of 1940, Investment Company Act Release No. 17,245, 54 Fed. Reg. 50,567 (Dec. 7, 1989).

¹⁶² The SEC adopted interim temporary final rule 22e-3T in conjunction with the Treasury guarantee program for MMFs. Temporary Exemption for Liquidation of Certain Money Market Funds, Investment Company Act Release No. 28,487, 73 Fed. Reg. 71,919 (Nov. 26, 2008) (adding 17 C.F.R. § 270.22e-3T). The rule provided an exemption from section 22(e) for funds that had experienced an event that would trigger coverage under the program and had commenced liquidation proceedings. See 17 C.F.R. § 270.22e-3T (2009).

¹⁶³ Investment Company Act of 1940 § 22(e), 15 U.S.C. § 80a-22(e) (2012).

¹⁶⁴ 17 C.F.R. § 270.22e-3(a)(1) (2013).

¹⁶⁵ *Id.* § 270.22e-3(c).

¹⁶⁶ SEC 2010 Adopting Release, *supra* note 131, at 10,088.

¹⁶⁷ Most of the SEC’s 2010 MMF reforms became effective on May 5, 2010. *Id.* at 10,060.

¹⁶⁸ For a discussion of the concentration in MMF portfolio holdings, see Fin. Stability Oversight Council, Proposed Recommendations Regarding Money Market Mutual Fund Reform, 77 Fed. Reg. 69,455, 69,463 (Nov. 19, 2012)

(“The similarity of portfolio holdings increases the contagion risk to the entire MMF industry and to the broader financial system in the event that one MMF encounters stress.”) [hereinafter FSOC Proposed Recommendations], available at <http://www.gpo.gov/fdsys/pkg/FR-2012-11-19/pdf/2012-28041.pdf>.

¹⁶⁹ Chairman Schapiro’s roughly outlined proposal appeared to include two reform alternatives. The first was “that money market funds float the NAV and use mark-to-market valuation like every other mutual fund.” The second was “a tailored capital buffer of less than 1% of fund assets, adjusted to reflect the risk characteristics of the money market fund” that would be “combined with a minimum balance at risk requirement. That requirement would enable investors to redeem up to 97% of their assets in the normal course as they do today. However, it would require a 30-day holdback of the final 3% of a shareholder’s investment in a money market fund.” See Mary L. Schapiro, Chairman, Sec. & Exchange Comm’n, Statement on Money Market Fund Reform (Aug. 22, 2012), available at <http://www.sec.gov/news/press/2012/2012-166.htm>.

¹⁷⁰ See Daniel M. Gallagher & Troy A. Paredes, Comm’rs, Sec. & Exchange Comm’n, Statement on the Regulation of Money Market Funds (Aug. 28, 2012) (explaining that they were “concerned that the Chairman’s proposal would, at a minimum, severely compromise the utility and functioning of money market funds, which would inflict harm on retail and institutional investors”), available at <http://www.sec.gov/news/speech/2012/spch082812dmgtap.htm>; Luis A. Aguilar, Comm’r, Sec. & Exchange Comm’n, Statement Regarding Money Market Funds (Aug. 23, 2012) (“I remain concerned that the Chairman’s proposal will be a catalyst for investors moving significant dollars from the regulated, transparent money market fund market into the dark, opaque, unregulated market Such transfers could cause significant damage to the country’s short-term capital markets.”), available at <http://www.sec.gov/news/speech/2012/spch082312laa.htm>.

¹⁷¹ See, e.g., PRESIDENT’S WORKING GRP. ON FIN. MKTS., *supra* note 42, at 4–6 (discussing the benefits and costs of several potential options for further reform, including floating the NAV, setting up private emergency liquidity facilities, requiring certain redemptions to be in-kind, insuring MMFs, imposing additional requirements on stable NAV funds, restricting stable NAV funds to retail investors, regulating stable NAV MMFs like special-purpose banks, and increasing restrictions on MMF alternatives); William C. Dudley, President, Fed. Reserve Bank of New York, *For Stability’s Sake, Reform Money Funds*, BLOOMBERG (Aug. 14, 2012) (recommending floating the NAV and requiring capital buffers and minimum balance at risk for MMF shareholders), <http://www.bloomberg.com/news/2012-08-14/for-stability-s-sake-reform-money-funds.html>; Patrick E. McCabe et al., *The Minimum Balance at Risk: A Proposal to Mitigate the Systemic Risks Posed by Money Funds* 1 (Fed. Reserve Bank of New York, Staff Report No. 564, 2012) (recommending that funds withhold redemption of and subordinate a portion of investors’ balances—a minimum balance at risk—in order to slow redemptions and absorb fund losses), available at http://www.newyorkfed.org/research/staff_reports/sr564.pdf; Eric S. Rosengren, President & Chief Executive Officer, Fed. Reserve Bank of Boston, Remarks at the Federal Reserve Bank of Atlanta’s 2012 Financial Markets Conference: Money Market Mutual Funds and Financial Stability (Apr. 11, 2012) (recommending floating the NAV, or “requir[ing] money market funds to hold capital, and to impose a cost on redemptions”), available at <http://www.bos.frb.org/news/speeches/rosengren/2012/041112/041112.pdf>.

¹⁷² See, e.g., Hillary J. Allen, *Money Market Fund Reform Viewed Through a Systemic Risk Lens*, 11 J. BUS. & SEC. L. 87 (2010) (recommending an insurance scheme for MMFs); Michael S. Barr, *The Financial Crisis and the Path of Reform*, 29 YALE J. ON REG. 91, 110–11 (2012) (recommending floating NAV, redemption-in-kind triggers, an insurance scheme, or “a private-sector liquidity backstop”); William A. Birdthistle, *Breaking Bucks in Money Market Funds*, 2010 WIS. L. REV. 1155 (2010) (recommending a floating NAV or an insurance scheme); Jill Fisch & Eric Roiter, *A Floating NAV for Money Market Funds: Fix or Fantasy?*, 2012 U. ILL. L. REV. 1003, 1043–49 (2012) (recommending requiring MMFs to obtain capital, liquidate, or switch to a floating NAV if their mark-to-market price is more than 0.5% away from one dollar; placing limitations on fund boards’ ability to suspend redemptions; and increasing disclosure with respect to the possibility and consequences of breaking the buck); Gordon & Gandia, *supra* note 76, at 23–24 (recommending that MMFs be required to have a capital buffer funded by a sponsor, a third party, or shareholders or to impose a redemption holdback); GRP. OF THIRTY WORKING GRP. ON FIN. REFORM, *FINANCIAL REFORM: A FRAMEWORK FOR FINANCIAL STABILITY* 29 (2009) (recommending that MMFs “wishing to continue to offer bank-like services, such as transaction account services, withdrawals on demand at par, and assurances of maintaining a stable net asset value (NAV) at par, should be required to reorganize as special-purpose banks, with appropriate prudential regulation and supervision, government insurance, and access to central bank lender-of-last-resort facilities”), available at http://www.group30.org/images/PDF/Financial_Reform-A_Framework_for_Financial_Stability.pdf; Hanson et al., *supra* note 100, at 14–20; Mark Perlow, *Money Market*

Funds—Preserving Systemic Benefit, Minimizing Systemic Risks, 8 BERKELEY BUS. L.J. 74, 100 (2011) (recommending private liquidity facility as preferred option and fund buffers as possible second-best solution); SQUAM LAKE GRP., REFORMING MONEY MARKET FUNDS 4–5 (Jan. 14, 2011) (recommending that managers of stable NAV MMFs be required to maintain a buffer of “dedicated, liquid financial resources”), available at <http://www.squamlakegroup.org/Squam%20Lake%20MMF%20January%202014%20Final.pdf>; Bruce Tuckman, *Federal Liquidity Options: Containing Runs on Deposit-Like Assets Without Bailouts and Moral Hazard* 13 (Ctr. for Fin. Stability, Policy Paper, 2012) (recommending that the Federal Reserve auction off a finite amount of federal liquidity options that enable nonbanks such as MMFs to borrow from the Federal Reserve during a crisis), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2018873. *But see* Jonathan Macey, *Reducing Systemic Risk: The Role of Money Market Mutual Funds as Substitutes for Federally Insured Bank Deposits*, 17 STAN. J.L. BUS. & FIN. 131 (2011) (arguing against additional reforms on the grounds that they could undermine the important role MMFs play in the financial system).

¹⁷³ See, e.g., Letter from Jonathan Curry et al., HSBC Global Asset Mgmt. to the Eur. Comm’n (May 28, 2012) (recommending that sponsors be “prohibited from supporting their MMFs,” that MMFs “be prohibited from being rated,” that MMFs be required to actively manage shareholder concentration within a range of five to ten percent, that MMFs be able to meet redemption requests in-kind, and that MMFs should be “empowered to impose a liquidity fee on redeeming shareholders”), available at http://ec.europa.eu/internal_market/consultations/2012/shadow/individual-others/hsbc_en.pdf; BLACKROCK, MONEY MARKET FUNDS: A PATH FORWARD (2012) (recommending that a standby liquidity fee, worth twice the difference between the mark-to-market NAV and \$1.00 per share, be charged to a fund’s investors when the fund’s mark-to-market NAV falls below 99.75 or its weekly liquidity falls below 7.5%), available at https://www2.blackrock.com/webcore/litService/search/getDocument.seam?venue=PUB_INS&source=CONTENT&ServiceName=PublicServiceView&ContentID=1111173537; Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 50 (Jan. 24, 2013) (commenting that, while the Institute does not yet “concede” the need for further reform, liquidity gates and fees would be the best reform alternative if FSOC “can demonstrate that changes are needed for prime money market funds”), available at http://www.ici.org/pdf/13_fsoc_mmf_recs.pdf; Letter from Scott C. Goebel, Senior Vice President, Gen. Counsel, FMR Co., Fid. Invs., to Elizabeth M. Murphy, Sec’y, Sec. & Exchange Comm’n 14–15 (Feb. 14, 2013) [hereinafter 2013 Fidelity Letter to the SEC] (recommending that government and municipal MMFs not be subject to heightened regulatory reform, that MMFs be required to suspend redemptions and perhaps charge temporary liquidity fees automatically when weekly liquid assets “fall significantly” below thirty percent of total assets, and that an MMF’s board should be given a predetermined period of time during which it would have to decide to either lift the gate or liquidate the fund), available at <https://www.sec.gov/comments/mms-response/mmsresponse-34.pdf>; Letter from Scott C. Goebel, Senior Vice President, Gen. Counsel, FMR Co., Fid. Invs. to Elizabeth M. Murphy, Sec’y, Sec. & Exchange Comm’n 10 (Jan. 10, 2011) [hereinafter 2011 Fidelity Letter to the SEC] (recommending “creation of a well designed reserve within MMFs”), available at <http://www.sec.gov/comments/4-619/4619-36.pdf>; Letter from F. William McNabb III, Chairman and CEO, Vanguard, on behalf of Vanguard to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council (Jan. 15, 2013) (recommending that, when a prime MMF’s weekly liquidity falls below fifteen percent, it be required to suspend redemptions temporarily and implement a standby liquidity fee of one to three percent), available at https://institutional.vanguard.com/iam/pdf/FSOCmoneyMKT_VG_comment.pdf; Letter from Karla Rabusch, President, Wells Fargo Funds Mgmt., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 13–14 (Jan. 17, 2013) (finding liquidity fees and temporary redemption gates to be the lowest-cost reform option and finding it sensible for a one percent fee to be “triggered” when one-week liquidity falls to fifteen percent, while also endorsing the consideration of “greater transparency and disclosure” for MMFs), available at http://www.wellsfargoadvantagefunds.com/pdf/mmf/20130117_FSOC_CommentLetter.pdf.

¹⁷⁴ FSOC Proposed Recommendations, *supra* note 168, at 69,466 (proposing to recommend floating the NAV, pairing a one percent NAV buffer to absorb day-to-day fluctuations with a three percent investor minimum balance at risk to absorb losses in excess of the NAV buffer, or pairing a three percent NAV buffer with other measures such as stricter disclosure and diversification requirements), available at <http://www.treasury.gov/press-center/press-releases/Pages/tg1764.aspx>. Apart from controversy over the substance of the reforms, the FSOC’s action also raised concerns about the propriety of the engagement of the FSOC, a multiregulator systemic oversight body, in the SEC’s rulemaking process. See, e.g., Hester Peirce & Robert Greene, *Money Market Maneuvering* (Mercatus Ctr. at

George Mason Univ. Expert Commentary, Sept. 19, 2012), *available at* http://mercatus.org/expert_commentary/money-market-maneuvering.

¹⁷⁵ Money Market Fund Reform; Amendments to Form PF, Investment Company Act Release No. 30,551, 78 Fed. Reg. 36,834, 36,849 (Jun. 19, 2013) [hereinafter SEC 2013 Money Market Fund Reform Proposal], *available at* <http://www.gpo.gov/fdsys/pkg/FR-2013-06-19/pdf/2013-13687.pdf>. *See also* Press Release, Sec. & Exchange Comm'n, SEC Proposes Money Market Fund Reforms (Jun. 5, 2013), *available at* <http://www.sec.gov/news/press/2013/2013-101.htm>.

¹⁷⁶ These proposed changes include a new Form N-CR, which an MMF must file with the SEC and post on its website whenever it experiences a “significant” event such as sponsor support, portfolio security default events, or a drop in market NAV below \$.9975. *See* SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,934–40 (discussing proposed Form N-CR). The SEC also proposed enhanced disclosures, including daily disclosure of the current market NAV (rounded to the fourth decimal place) and daily and weekly liquidity, more frequent public disclosure of portfolio holdings, historical NAV information, and historical instances of sponsor support. *See id.* at 36,924–34 (discussing proposed disclosure requirements). The SEC proposed enhanced disclosure on Form N-MFP, including more identifying information about portfolio securities, maturity dates for portfolio securities, the amount of cash held, weekly gross redemptions and subscriptions, and the concentration of shares held by the fund’s twenty largest shareholders. *See id.* at 36,941–44 (discussing proposed Form N-MFP disclosures). The SEC also proposed to tighten diversification requirements by requiring aggregation of securities issued by affiliates for purposes of compliance with rule 2a-7’s five percent issuer concentration cap; subjecting sponsors of asset-backed securities vehicles to rule 2a-7’s ten percent guarantor cap; and eliminating a provision that permitted up to twenty-five percent of an MMF’s portfolio to have a single guarantor. *See id.* at 36,953–64 (discussing proposed diversification restrictions). The SEC’s proposal would strengthen stress testing requirements. *See id.* at 36,967–72 (discussing proposed stress test requirements). The SEC also proposed related amendments to Form PF to impose new reporting requirements on providers of non-rule 2a-7 liquidity funds. *See id.* at 36,947–53 (discussing proposed amendments to Form PF).

¹⁷⁷ For this point, we thank an anonymous reviewer.

¹⁷⁸ Section 2(a)(41) of the Investment Company Act governs valuation. Investment Company Act of 1940 § 2(a)(41), 15 U.S.C. § 80a-2(a)(41) (2012). Generally, the market value is used for securities for which market quotations are readily available and other securities are valued “at fair value as determined in good faith by the board of directors.” *Id.* Securities in which MMFs typically invest lack a secondary market, which makes market pricing difficult. PRESIDENT’S WORKING GROUP ON FIN. MKTS., *supra* note 42, at 68,648 (explaining that “precise pricing of many money market securities is challenging given the absence of active secondary markets”). Accordingly, almost all MMFs use the amortized cost method of valuation and the penny rounding method of pricing in conjunction to maintain a stable NAV. *See* SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,835 (noting that most MMFs rely on amortized cost valuation and penny rounding, explaining that “[u]nder the amortized cost method, a money market fund’s portfolio securities generally are valued at cost plus any amortization of premium or accumulation of discount, rather than at their value based on current market factors,” and that “[t]he penny rounding method of pricing permits a money market fund when pricing its shares to round the fund’s net asset value to the nearest one percent (i.e., the nearest penny)”) (citing to rule 2a-7(a)(2) and (20)). Since shortly after the inception of MMFs, the SEC has found amortized cost accounting to be an acceptable method of valuing securities for which market prices are not readily available and thus must be valued at “fair value” by the board of directors. *See* Accounting Series Release No. 219, Valuation of Debt Instruments by Money Market Funds and Certain Other Open-End Investment Companies, Investment Company Act Release No. 8,757, 42 Fed. Reg. 28,999 (June 7, 1977) (interpreting the Investment Company Act to allow MMF boards to determine the fair value for securities with remaining maturities of sixty days or less using amortized cost accounting). *See also* DENNIS R. BERESFORD, AMORTIZED COST IS “FAIR” FOR MONEY MARKET FUNDS (Ctr. for Capital Mkt. Competitiveness, 2012) (explaining how Financial Accounting Standards Board guidance documents and SEC rules and interpretations support MMFs’ use of amortized cost accounting due to the very short-term, hold-to-maturity nature of securities in which MMFs invest), *available at* www.centerforcapitalmarkets.com/wp-content/uploads/2010/04/Money-Market-Funds_FINAL.layout.pdf.

¹⁷⁹ *See* FSOC Proposed Recommendations, *supra* note 168, at 69,457.

¹⁸⁰ Under rule 2a-7’s “shadow pricing” provision, MMFs have to calculate “the extent of deviation, if any, of the current net asset value per share calculated using available market quotations (or an appropriate substitute that

reflects current market conditions) from the money market fund's amortized cost price per share." 17 C.F.R. § 270.2a-7(c)(8)(ii)(A) (2013).

¹⁸¹ *Id.* (c)(8)(ii)(C). In that event, "it shall cause the fund to take such action as it deems appropriate to eliminate or reduce to the extent reasonably practicable such dilution or unfair results." *Id.*

¹⁸² *Id.* § 270.2a-7(c)(8)(ii)(B).

¹⁸³ *See, e.g.*, 2011 Fidelity Letter to the SEC, *supra* note 173, at 7 (reporting that, in response to a survey question highlighting the tax and accounting implications of a floating NAV, ninety-two percent of institutional investors expressed a preference for a stable NAV); Letter from Am. Pub. Power Ass'n et al. to Elizabeth M. Murphy, Sec'y, Sec. & Exchange Comm'n 1-2 (Mar. 8, 2012) (co-authored by Gov. Fin. Officers Ass'n; Nat'l Ass'n of Counties; Nat'l Ass'n of State Auditors, Comptrollers & Treasurers; Nat'l Ass'n of State Treasurers; Nat'l League of Cities; and U.S. Conference of Mayors, commenting that "changing the NAV from fixed to floating would make MMMFs far less attractive to investors" and that, if a floating NAV were to be adopted, most of the members of signatories to the comment letter would "divest a significant percentage of their MMMFs"), *available at* <http://www.sec.gov/comments/4-619/4619-39.pdf>; Letter from William Dressel, Jr., Exec. Dir., N.J. State League of Muns., to Elizabeth M. Murphy, Sec'y, Sec. & Exchange Comm'n 1 (Aug. 28, 2013) (commenting that the "most appealing" aspect of MMFs "is their stable \$1 net asset value"), *available at* <http://www.sec.gov/comments/s7-03-13/s70313-75.pdf>; Letter from Margaret Mahery, Exec. Dir., Tenn. Mun. League, to Elizabeth M. Murphy, Sec'y, Sec. & Exchange Comm'n 1 (May 10, 2012) (expressing the view that requiring MMFs to float their NAVs would "hobble municipal cash management" in part because "many governmental bodies, businesses, and institutions operate under legal constraints or investment policies that prevent them from investing cash balances in instruments that fluctuate in value"), *available at* <http://www.sec.gov/comments/4-619/4619-180.pdf>; Letter from Larry L. Long, Exec. Dir., County Comm'rs' Ass'n of Ohio to Timothy Geithner, Fin. Stability Oversight Council 1 (Dec. 21, 2012) (explaining that MMFs are "popular in Ohio because of their stable \$1.00 net asset value (NAV)", which offers "an attractive rate of return with minimal risk" and that "county governments in Ohio operate under legal constraints or other policies that prevent them from investing in instruments without a stable value"), *available at* <http://www.preservemoneymarketfunds.org/wp-content/uploads/2013/01/County-Commissioners-Assoc-of-Ohio.pdf>; Letter from Melinda Sartori, Exec. Vice President, Chemung Canal Trust Company, to Elizabeth M. Murphy, Sec'y, Sec. & Exchange Comm'n 1 (July 31, 2013) (commenting that the stable NAV is important to their firm because they "use Money Funds to perform many different trust, fiduciary and custody account services" and that MMFs are useful for these purposes in part "because they offer a stable \$1 NAV"), *available at* <http://www.sec.gov/comments/s7-03-13/s70313-46.pdf>; Letter from Adrienne C. Hodson, Gov't Relations Specialist, County Comm'rs' Ass'n of Pennsylvania to Mary Schapiro, Chair, Sec. & Exchange Comm'n 1 (July 10, 2012) (explaining that "many governments have specific policies that mandate that they invest in products with stable values, and money market funds are thus used for their short-term investments due to the fixed NAV"), *available at* http://www.preservemoneymarketfunds.org/wp-content/uploads/2012/06/County_Commissioners_Assoc_of_PA_July_2012_13419398011.pdf; TREASURY STRATEGIES, INC., MONEY MARKET FUND REGULATIONS: THE VOICE OF THE TREASURER 19 (2012) (including a survey of 203 "financial executives representing corporate, government, and institutional investors" that finds that seventy-nine percent would either decrease use or discontinue use of MMFs if NAVs were required to float), *available at* http://www.ici.org/pdf/rpt_12_tsi_voice_treasurer.pdf.

¹⁸⁴ For a list of some of the tax and accounting benefits of CNAV MMFs, *see* INV. CO. INST., MONEY MARKET FUNDS IN 2012, A BAD IDEA: FORCING MONEY MARKET FUNDS TO FLOAT THEIR NAVS 1-2 (2012), *available at* http://www.ici.org/pdf/12_mmf_floating_nav.pdf.

¹⁸⁵ *See id.*; Internal Revenue Serv., Notice 2013-48: Application of Wash Sale Rules to Money Market Fund Shares 5 ("Constant share prices have simplified the taxation of MMF share transactions because a shareholder does not realize gain or loss when a share is redeemed for an amount equal to its basis."), *available at* <http://www.irs.gov/pub/irs-drop/n-13-48.pdf>. *See also* Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec'y, Fin. Stability Oversight Council, *supra* note 173, at 62-67 (detailing the tax, accounting, recordkeeping, and operational advantages of a CNAV); Letter from David T. Bellaire, Esq., Executive Vice President & General Counsel, Fin. Services Inst., to Amias Gerety, Deputy Assistant Sec'y, Fin. Stability Oversight Council (Feb. 15, 2013) (explaining that "under the stable NAV environment, [MMF] transactions do not generate taxable gains or losses" and that, under a floating NAV regime, the IRS's "wash sale" rule would limit "the extent to which shareholders could deduct any loss realized on the redemption"), *available at* <http://www.financial>

services.org/uploadedFiles/FSI_Content/Latest_News/AdvocacyUpdate_CommentLetterFSOC_MMFReformRecommendations.pdf.

¹⁸⁶ See Fin. Accounting Standards Bd., ACCOUNTING STANDARDS CODIFICATION § 305-10-20 (2013) (defining cash equivalents and providing MMFs as an example of “items commonly considered to be cash equivalents”). See also Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 65 (explaining that MMFs are considered cash equivalents under Generally Accepted Accounting Principles, but that floating NAV funds would not necessarily be considered cash equivalents).

¹⁸⁷ See Jill E. Fisch, *Rethinking the Regulation of Securities Intermediaries*, 158 U. PA. L. REV. 1961, 1975 (2010) (explaining that investors “commonly use” MMFs because of features similar to bank accounts, such as “near-immediate liquidity” and “services like check-writing and ATM access”); Letter from Joe Benevento, Managing Dir., Deutsche Asset Mgmt., to Elizabeth M. Murphy, Sec’y, Sec. & Exchange Comm’n (Aug. 31, 2009) (explaining that “the Stable NAV fund’s \$1.00 price makes practical many of the services retail investors have come to rely on, such as brokerage sweeps, check writing, and debit card transactions”), available at <http://www.sec.gov/comments/s7-11-09/s71109-50.pdf>.

¹⁸⁸ See FSOC Proposed Recommendations, *supra* note 168, at 69,466–69 (discussing proposal to “[r]equire MMFs to have a floating net asset value per share (NAV) by removing the special exemption that currently allows MMFs to utilize amortized cost accounting and/or penny rounding to maintain a stable NAV”).

¹⁸⁹ Prime institutional MMFs are estimated to comprise over one-third of total MMF assets in the United States. See INV. CO. INST., Weekly Money Market Mutual Fund Assets (finding that institutional, taxable nongovernment MMFs made up \$750.60 billion of the \$2.68363 trillion invested in all MMFs during the week of February 26, 2013) (last visited Feb. 27, 2014), available at <http://www.ici.org/research/stats/mmf>. The SEC proposes to define a retail fund as an MMF that “restricts a shareholder from redeeming more than \$1,000,000 in any one business day.” See SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,858–59 (describing rationale for proposed retail fund definition).

¹⁹⁰ See *id.* at 36,850 & 36,856 (citing the SEC’s November 2012 staff report). See also DIV. OF RISK, STRATEGY & FIN. INNOVATION, *supra* note 70, at 10 (reporting that “[i]nvestor redemptions during the financial crisis, particularly after Lehman’s failure, were heaviest in institutional share classes of prime money market funds”).

¹⁹¹ See, e.g., INT’L ORG. OF SEC. COMM’NS, MONEY MARKET FUND SYSTEMIC RISK ANALYSIS AND REFORM OPTIONS 22 (2012) (pointing out that “in the U.S., retail and institutional funds are indistinguishable due to the widespread use of omnibus accounts to invest in MMFs”), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD379.pdf>; Letter from Daniel F. Anderson, Senior Vice President, MainSource Bank, to Elizabeth M. Murphy, Sec’y, Sec. & Exchange Comm’n 1 (Aug. 20, 2013) (finding that the SEC’s proposed method of differentiating between retail and institutional MMF investors is an “artificial distinction” that “does not comport” with the methodology used by MainSource Bank to “create liquidity on a regular or as-needed basis” for its clients), available at <http://www.sec.gov/comments/s7-03-13/s70313-65.pdf>; Letter from Lu Ann Katz, Head of Global Liquidity, Invesco Ltd., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 4–5 (Feb. 15, 2013) (finding that efforts to distinguish between retail and institutional MMFs are “misplaced and impractical” because many investors “could easily be characterized as either” and administrative costs associated with “tracking individual investors’ activity in order to characterize them on an ongoing basis would be extremely onerous,” and that designating MMFs as retail and institutional would “unduly favor” fund complexes with more “direct individual investors or affiliated omnibus account platforms over those with a more diverse investor base . . .”), available at <http://www.regulations.gov/#!documentDetail;D=FSOC-2012-0003-0123>; Letter from Barbara G. Novick, Vice Chairman & Richard K. Hoerner, CFA, Managing Dir., Head of Global Cash Mgmt., BlackRock, to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 22 (Dec. 13, 2012) (An approach based on distinguishing retail and institutional funds would “be difficult to implement and may lead to gaming behavior by investors” and “may encourage investors to open multiple accounts to appear smaller than they are.”), available at <http://www.regulations.gov/contentStreamer?objectId=090000648118abad&disposition=attachment&contentType=pdf>. The SEC proposed an exemption from the million-dollar redemption limit for omnibus accounts that impose a million-dollar limit on the beneficial owners in the account. See SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,861–62 (discussing proposed treatment of omnibus accounts). Nevertheless, compliance with that exemption could be costly and complicated for MMFs and omnibus account holders. See, e.g., Letter from Thomas B. Burkholder, Vice President & Trust Officer, Woodlands Bank, to Elizabeth M. Murphy, Sec’y, Sec. & Exchange

Comm'n 1 (Aug. 20, 2013) (explaining that compliance with the SEC's methodology of differentiating between retail and institutional customers would be costly, the bank has "no means of controlling the size . . . or frequency" of fund distributions, and that doing so would add an "extra layer" of cost), *available at* <http://www.sec.gov/comments/s7-03-13/s70313-64.pdf>; Letter from Lu Ann Katz, Head of Global Liquidity, Invesco Ltd., to Amias Gerety, Deputy Assistant Sec'y, Fin. Stability Oversight Council, *supra* note 191, at 5 & n.8 (explaining that MMFs with affiliated omnibus platforms would have an advantage over MMFs using unaffiliated omnibus intermediaries because affiliated platforms "would have access to the underlying investor information that would permit them to disaggregate the omnibus account's holdings").

¹⁹² See SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,853–54 (explaining rationale for four-decimal-place pricing). The FSOC's floating NAV proposal, by contrast, would reprice floating NAV shares to transact at \$100.00 (two decimal places). See FSOC Proposed Recommendations, *supra* note 168, at 69,466 (explaining that \$100.00 share pricing is preferable to \$1.00 share pricing because it is more sensitive to changes in the value of the fund's portfolio securities).

¹⁹³ SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,849.

¹⁹⁴ See *e.g.*, FSOC Proposed Recommendations, *supra* note 168, at 69,456 ("In effect, first movers have a free option to put their investment back to the fund by redeeming shares at the customary stable share price of \$1.00, rather than at a price that reflects the reduced market value of the securities held by the MMF."); Schapiro, *supra* note 169 ("Under the 'first-mover advantage,' those who redeem first, get out with their full \$1.00 invested, even if the fund's assets are worth slightly less. This leaves all the other investors holding the bag—usually the slower moving retail investors who can lose both value and access to their money. They lose the value when the fund reaches a mark-to-market NAV of 99-and-a-half cents and breaks the buck."); Letter from Eric S. Rosengren, President, Fed. Reserve Bank of Boston, et al. to Amias Gerety, Deputy Assistant Sec'y, Fin. Stability Oversight Council 2 (Feb. 12, 2013) (The current, stable NAV structure "gives rise to a risk of destabilizing MMF runs by creating a first mover advantage. By allowing redemptions at a stable price of \$1.00 per share rather than at a share price reflecting the current market value of underlying portfolio assets, MMFs give investors a financial incentive to redeem quickly before others during times of stress, as losses are borne by the investors remaining in the fund."), *available at* <http://www.bos.frb.org/news/press/2013/pr021213-letter.pdf>.

¹⁹⁵ SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,838.

¹⁹⁶ SQUAM LAKE GRP., *supra* note 172, at 2.

¹⁹⁷ See, *e.g.*, Schapiro, *supra* note 169 ("while the incentive to run may not be reduced entirely, the 'cliff' effect of redeeming at \$1.00, or getting stuck with a loss and no immediate access to one's assets would no longer exist").

¹⁹⁸ See *supra* notes 75–79 and accompanying text. The sponsor-support distinction among MMFs would be eliminated by the FSOC's proposal, which would forbid sponsors of floating NAV funds from providing financial support to their funds. See FSOC Proposed Recommendations, *supra* note 168, at 69,466 ("Because a floating-NAV MMF is designed to fluctuate in value, allowing the type of affiliate support currently permitted under rule 17a-9 would appear to be unnecessary.").

¹⁹⁹ SCOTT, *supra* note 100, at 224 ("A floating NAV does not reduce the underlying risk of MMMF investments, including interest rate risk, credit risk and liquidity risk. MMMF investors will continue to need ready access to their cash and have a low tolerance for risk. During stress events, these risk-averse investors are still able to pull back quickly and are incentivized to do so.").

²⁰⁰ *Id.* at 224–25 (arguing that, while investors have an incentive to redeem early from stable NAV funds, they also have an incentive to redeem early from a floating NAV fund to avoid further losses). See also Fisch & Roiter, *supra* note 172, at 1036 (explaining that a stable NAV "is unlikely to forestall redemptions from an underperforming fund or a fund caught in the swirl of a credit market meltdown").

²⁰¹ See McCabe et al., *supra* note 171, at 1 ("Although either a floating NAV or a capital buffer could provide additional stability to MMFs, it is worth noting that investors in an MMF with a floating NAV would still face strong incentives to redeem shares quickly at the first sign of trouble—before other redemptions deplete the fund's most liquid assets . . .").

²⁰² See Qi Chen et al., *Payoff Complementarities and Financial Fragility: Evidence from Mutual Fund Outflows*, 97 J. FIN. ECON. 239, 258 (2010) (finding that illiquid funds' outflows are more sensitive to bad performance than outflows of liquid funds and arguing "that investors' behavior is affected by the expected behavior of fellow investors" and that "[t]his is a destabilizing force that generates outflows based on self-fulfilling beliefs"), *available at* http://www.columbia.edu/~wj2006/fund_run.pdf.

²⁰³ See Gordon & Gandia, *supra* note 76, at 30 tbl.5a.

²⁰⁴ See, e.g., Birdthistle, *supra* note 172, at 1187 (“A false sense of security is perhaps the single largest peril of money market funds today. These funds convey an artificial impression that they are as safe as bank accounts [T]he chief culprit in propagating this impressions is the fixed NAV, because it so closely resembles the fixed obligations of a bank account.”).

²⁰⁵ See, e.g., Letter from Henry M. Paulson, Chairman, Paulson Inst., to Mary Schapiro, Chairman, Sec. & Exchange Comm’n 2 (Feb. 22, 2012) (pointing out that a floating NAV regulatory regime could provide investors with “a tangible indication that they were not investing in a bank account”) (quoting from his book, ON THE BRINK (2010)), available at <http://www.sec.gov/comments/4-619/4619-183.pdf>; Sheila Bair, Statement by the Systemic Risk Council on Money Market Fund Reform (July 19, 2012) (“While investors and savers view MMFs as equivalent to the safety of bank savings accounts, this stable value conceals the fact that significant investment and liquidity risk potentially exists in these instruments.”), available at http://www.pewtrusts.org/news_room_detail.aspx?id=85899406267.

²⁰⁶ See, e.g., FSOC Proposed Recommendations, *supra* note 168, at 69,466 (“A floating NAV would make gains and losses on MMF investments a regular occurrence. It would accustom investors to changes in the value of their MMF shares and reduce the perception that shareholders do not bear any risk of loss when they invest in an MMF. Such beliefs can make MMFs prone to runs if shareholders suddenly become concerned that they may bear losses. Breaking the buck should no longer be a significant event because MMFs would simply fluctuate in value in the same manner as other mutual funds.”).

²⁰⁷ 17 C.F.R. § 230.482(b)(4) (2013) (MMFs must disclose the following: “An investment in the Fund is not insured by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment at \$1.00 per share, it is possible to lose money by investing in the Fund.”).

²⁰⁸ See INV. CO. INST., *supra* note 189 (finding that as of February 26, 2014, \$1.76778 trillion of the \$2.68363 trillion invested in MMFs is invested in institutional MMFs).

²⁰⁹ *Id.* (finding that as of February 26, 2014, \$523.46 billion of the \$2.68363 trillion invested in MMFs is invested in retail prime MMFs).

²¹⁰ See FID. INVS., THE INVESTOR’S PERSPECTIVE: WHAT INDIVIDUAL INVESTORS KNOW ABOUT THE RISKS OF MONEY MARKET MUTUAL FUNDS 3 (2012), available at <http://www.sec.gov/comments/4-619/4619-170.pdf>.

²¹¹ The SEC explained that “[t]he move to a floating NAV [which is not applicable to retail funds] would be designed to change the investment expectations and behavior of money market fund investors” and then cited a survey of retail investors about their understanding of MMF risk and availability of government assistance to show that MMFs’ expectations need to be changed. SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,874. It is unclear how shifting institutional funds to a floating NAV and making related disclosure changes will assist retail investors in better understanding both the risks of MMFs and the likelihood of government assistance.

²¹² See FSOC Proposed Recommendations, *supra* note 168, at 69,467 (reporting that Treasury and the Internal Revenue Service “will consider administrative relief for both shareholders and fund sponsors,” including ways to “simplify the measurement and reporting of gains and losses from floating-NAV MMFs”); SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,868 (“[T]he Treasury Department and the IRS are considering alternatives for modifying forms and guidance (1) to include net information reporting by the funds of realized gains and losses for sales of all mutual fund shares; and (2) to allow summary income tax reporting by shareholders.”).

²¹³ Internal Revenue Serv., *supra* note 185.

²¹⁴ See, e.g., Macey, *supra* note 172, at 171 (A “stable \$1.00 NAV provides convenience and simplicity to investors and managers alike, boosting MMFs’ efficiency with regard to tax, accounting, and recordkeeping. Unlike other mutual funds, MMFs are used primarily as a cash management tool, which means that large transactions flow through them every day. Without a stable NAV, many investors will bolt for other cash management entities offering a stable NAV in order to minimize tax, accounting, and recordkeeping burdens.”).

²¹⁵ SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,869.

²¹⁶ FSOC Proposed Recommendations, *supra* note 168, at 69,468.

²¹⁷ See, e.g., SQUAM LAKE GRP., *supra* note 172, at 4 (suggesting buffer as way to “preserve[] the stable NAV structure but enhance[] its safety by requiring sponsors to establish contractually secure buffers that could absorb at least moderate investment losses to their money market fund investors” and going on to explain that “[t]his is akin to a capital requirement for stable-NAV funds”).

²¹⁸ Hanson et al., *supra* note 100, at 15.

²¹⁹ See FSOC Proposed Recommendations, *supra* note 168, at 69,469–74 (discussing NAV buffer plus minimum balance at risk alternative).

²²⁰ See *id.* at 69,474–78 (discussing NAV buffer plus additional diversification, disclosure, and liquidity requirements alternative). Because a 3% capital buffer requirement only applies to a portion of an MMF’s invested assets, a fund’s actual required buffer would be below 3%. See *id.* at 69,474. The FSOC estimated the actual size of a buffer for prime MMFs under its proposed rules to be 2.51%. *Id.* at 69,474 n.111.

²²¹ *Id.* at 69,474.

²²² *Id.*

²²³ It may not even be possible to design an effective buffer. See, e.g., Tuckman, *supra* note 172, at 13 (arguing that it would be difficult to know how big a capital buffer should be, given that MMF “portfolios suffer losses in value only in hard-to-quantify, extreme tail events”); McCabe et al., *supra* note 171, at 57 (noting that “investors would still have strong incentives to exit a fund if there is any danger that losses might exceed its buffer”).

²²⁴ See SQUAM LAKE GRP., *supra* note 172, at 7 (“In the two-day period following Lehman’s bankruptcy, the Reserve Primary Fund reported a minimum share price of 97 cents A buffer of at least \$.03 per share would therefore have been necessary to prevent the Reserve Fund from breaking the buck.”) (footnote omitted). The FSOC estimated that the larger of its proposed buffers—the risk-based buffer of up to three percent of NAV—would actually be “approximately 2.51 percent for prime funds; 2.39 percent for tax-exempt funds; and 2.10 percent for government funds.” See FSOC Proposed Recommendations, *supra* note 168, at 69,474 n.111.

²²⁵ See *id.* at 69,475 (“[W]hile the NAV buffer may reduce the probability that an MMF investor suffers losses, it is unlikely to be large enough to absorb all possible losses and may not be sufficient to prevent investors from redeeming when they expect possible losses in excess of the NAV buffer. For instance, [as of September 30, 2012], the largest average exposure in prime MMFs to a single firm, when aggregating all affiliates and weighting by fund assets, was 4.5 percent.”).

²²⁶ Daniel M. Gallagher, Statement at SEC Open Meeting—Proposed Rules Regarding Money Market Funds (June 5, 2013), available at <http://www.sec.gov/News/Speech/Detail/Speech/1365171575594>.

²²⁷ *Id.* (citing Letter from Jeffrey N. Gordon to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *infra* note 227). Gordon makes the point that changes to Federal Reserve Act § 13(3) would preclude lending facilities such as those used in the last crisis “in which the Federal Reserve lent against sketchy asset-backed commercial paper at par,” but MMF capital would give the Federal Reserve something against which it could lend. Letter from Jeffrey N. Gordon, Richard Paul Richman Prof. of Law, School of Law, Columbia Univ. in the City of N.Y., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 9 (Feb. 28, 2013), available at <http://www.regulations.gov/#!documentDetail;D=FSOC-2012-0003-0131>.

²²⁸ Several commenters have supported public or quasi-private industry-wide buffer pools. See, e.g., Jonathan W. Lin, *Untangling the Money Market Fund Problem: A Public-Private Liquidity Fund Proposal*, 19 STAN. J.L. BUS. & FIN. 1, 64–72 (forthcoming) (proposing a FDIC-like or publicly administered liquidity pool backstopped by the Federal Reserve); Letter from Paul Schott Stevens, Pres. & CEO, Inv. Co. Inst., to Elizabeth M. Murphy, Sec’y, Sec. & Exch. Comm’n (Jan. 10, 2011) (supporting a private liquidity facility with access to the Federal Reserve’s discount window and for which prime MMF participation is mandated); BlackRock, *Money Market Fund Reform: Discussion of Reform Proposals 3* (ViewPoint, Jan. 2011) (also supporting a privately managed, industry-wide, pooled liquidity facility with access to the Federal Reserve’s discount window).

²²⁹ See Lin, *supra* note 228, at 67 (explaining that a publicly managed, industry-wide liquidity facility “[necessitates] a public backstop for any liquidity protection to be credible”); Letter from Paul Schott Stevens, Pres. & CEO, Inv. Co. Inst., to Elizabeth M. Murphy, Sec’y, Sec. & Exch. Comm’n, *supra* note 228, at 27 (outlining reliance on the Federal Reserve as a critical component of a liquidity facility’s risk-limiting capabilities).

²³⁰ Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 77 (2.51% of \$1.5 trillion in total net assets of prime funds as of January 2, 2013).

²³¹ SEAN S. COLLINS, INV. CO. INST., THE IMPLICATIONS OF CAPITAL BUFFER PROPOSALS FOR MONEY MARKET FUNDS 11 fig.5 (2012), available at http://www.ici.org/pdf/ppr_12_mmfs_capital_buffer.pdf.

²³² As of late February 2014, the average thirty-day yield for both taxable and tax-free MMFs was 0.01%. iMoneyNet, *iMoneyNet Money Fund Averages* (last visited Feb. 27, 2013), <http://www.imoney.net/>. Some fund sponsors waive their fees during low-yield periods.

²³³ See Letter from F. William McNabb III, Chairman and CEO, Vanguard, on behalf of Vanguard to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 3 (arguing that MMFs might invest in riskier securities in order to compensate for the reduction in yields resulting from funding a capital buffer). The FSOC’s approach, which would mandate a risk-based capital buffer, could encourage MMFs to seek high-yielding assets that have a low-risk weight, similar to the gaming that has occurred with the Basel capital requirements. See, e.g., Arnold Kling, *Not What They Had in Mind: A History of Policies that Produced the Financial Crisis of 2008* 23 (Mercatus Ctr. at George Mason Univ., Sept. 2009) (explaining that because “the Basel agreement created an effective 4 percent capital requirement (2 percent tier one or equity capital) for all mortgages, regardless of risk” but for mortgage securities guaranteed by Freddie Mac and Fannie Mae, created a capital requirement of only 1.6%, that it “was capital-efficient to securitize mortgage loans with Freddie Mac and Fannie Mae”), available at <http://mercatus.org/publication/not-what-they-had-in-mind-history-policies-produced-financial-crisis-2008>.

²³⁴ McCabe et al., *supra* note 171, at 6 (arguing that the presence of a capital buffer could “blunt MMF portfolio managers’ incentives for prudent risk management and investors’ incentives to monitor risks in their funds”).

²³⁵ FSOC Proposed Recommendations, *supra* note 168, at 69,475.

²³⁶ COLLINS, *supra* note 231, at 27 fig.11 (“best-case conditions” constitute several operational and market assumptions, including assumptions that “expense ratios are .35 percent and .40 percent, respectively, for the Treasury and prime fund” used in the estimate, that “investors reinvest 90 percent of distributed income,” that “commercial paper earns a yield of 25 basis points above that on 3-month Treasury bills,” and that yields on 3-month Treasury bills rise to 3.75% in 2017 from 1% in 2013).

²³⁷ *Id.* at 24 (“[A] fund, under SEC rules and GAAP, can accumulate a capital buffer of no more than 0.5 percent of net assets. The fund’s price per share (NAV) would remain fixed at \$1.00 only until the fund’s mark-to-market value rises to \$1.0050. At that point, the fund would have to adjust its NAV upward to \$1.01, ‘breaking the dollar’ on the upside.”).

²³⁸ *Id.* See also 26 U.S.C. § 852(a)(1) (2012) (requiring deduction for dividends to be ninety percent or more of fund’s income).

²³⁹ EUR. FUND & ASSET MGMT. ASS’N, EFAMA’S REPLY TO IOSCO’S CONSULTATION ON MONEY MARKET FUND SYSTEMIC RISK ANALYSIS & REFORM OPTIONS 18 (2012) (“[T]he cost would be borne by first generation investors to benefit [sic] of late generation investors. This is not consistent with basic principles of securities regulation”), available at http://www.efama.org/Publications/Public/Money_Market_Funds/12-4033_EFAMA%20Response%20to%20IOSCO%20Consultation%20on%20MMF%20%28final%29.pdf; FSOC Proposed Recommendations, *supra* note 168, at 69,472 (“this may raise fairness concerns if MMF investors receive reduced yields in order to build a buffer that benefits subsequent investors”).

²⁴⁰ Craig M. Lewis, *The Economic Implications of Money Market Fund Capital Buffers* 35 (Working Paper, Nov. 2013), available at <http://www.sec.gov/divisions/riskfin/workingpapers/rsfi-wp2014-01.pdf>.

²⁴¹ See, e.g., Hanson et al., *supra* note 100, at 31–32 (outlining operation of subordinated share class); Sec. & Exchange Comm’n, *Unofficial Transcript: Roundtable on Money Market Funds and Systemic Risk* (May 10, 2011) (statement of René M. Stulz) (“We would have a senior tranche, which would be the money market fund, and then we would have a junior tranche, which would be—which we call the equity tranche. One way to implement that concept is that the fund could issue notes at regular intervals in the amount necessary to create the buffer. For instance, they could have a six-month maturity. The notes could promise a fixed interest payment or could receive the income in the fund in excess of some amount. With fixed interest payments, the principal would be reduced if losses have to be paid. The notes could be issued through a bidding process or could be privately placed.”), available at <http://www.sec.gov/spotlight/mmf-risk/mmf-risk-transcript-051011.htm>.

²⁴² See, e.g., INT’L ORG. OF SEC. COMM’NS, *supra* note 191, at 16–17 (“The subordinated shares model provides capital shareholders an incentive to monitor a MMF for risk. The option allows for the rational allocation of risk in that the subordinated shares would be allocated to investors seeking the possibility of higher returns in exchange for higher risk. Also tail risk would be explicitly and transparently priced in the form of the preferential return paid out to the capital shares.”).

²⁴³ See, e.g., Letter from Gregory P. Dulski, Corporate Counsel, Federated Investors, to Mohamed Ben Salem, Int’l Org. of Sec. Comm’ns 23 (May 25, 2012) (“What the subordinated equity would provide, however, is a short ‘head start’ after the first loss announcement to put in a redemption request to get out ahead of other investors before the subordinated capital is exhausted. This will make runs more likely, not less.”), available at <http://www.sec.gov/comments/4-619/4619-190.pdf>.

²⁴⁴ According to an Investment Company Institute estimate, if fully subordinated securities equaled 3% of a fund's net asset value, then those subordinated investors would suffer an 8.3% loss in the event of a 0.25% loss of total fund assets. See COLLINS, *supra* note 231, at 21. See also Letter from Lu Ann Katz, Head of Global Liquidity, Invesco Ltd., to Amias Gerety, Deputy Assistant Sec'y, Fin. Stability Oversight Council, *supra* note 191, at 7 (explaining that issuing "subordinated MMF interests" would likely entail investors' demanding a rate of return of five to seven percent and thus requiring MMFs to earn 28 basis points annually—significantly less than what MMFs currently yield—while also explaining that, based on the current size of the market for similar securities yielding five to seven percent, it would be "difficult, if not impossible, for the high yield market to absorb . . ." the volume of issuance necessary to accumulate a \$15 billion, or one percent, NAV buffer across the industry).

²⁴⁵ *Id.* at 21 ("Capital markets experts indicated that the subordinated securities could be marketed to the institutional investors who are most likely to be willing to assume this kind of volatility (e.g., insurance companies, global reinsurers) only if the securities could obtain a credit rating, which would require them to be structured as debt."). See also INT'L ORG. OF SEC. COMM'NS, *supra* note 191, at 17 (noting that issuing equity is more costly than issuing debt).

²⁴⁶ See COLLINS, *supra* note 231, at 23.

²⁴⁷ See, e.g., BLACKROCK, MONEY MARKET FUNDS: POTENTIAL CAPITAL SOLUTIONS 7 (2011) (noting possibility of conflicts, particularly if the adviser holds the subordinated securities), available at https://www2.blackrock.com/webcore/litService/search/getDocument.seam?contentId=1111147384&Source=SEARCH&Venue=PUB_INS.

²⁴⁸ See COLLINS, *supra* note 231, at 17–19 (assuming thirty-three percent of fees collected from MMFs go "directly to fund advisers' bottom line," all fee waivers now offered are removed, "short-term interest rates return to the rather elevated level of 2006," and money market fund expense ratios "double" to .40 from .21 in 2011).

²⁴⁹ See, e.g., McCabe et al., *supra* note 171, at 57 (arguing that a capital requirement would be easier for larger firms to fund and thus could facilitate further industry consolidation). As of September 30, 2012, the top five MMF sponsors managed forty-six percent of MMF assets. FSOC Proposed Recommendations, *supra* note 168, at 69,462. In late February 2014, of the over 850 institutional MMFs and 705 retail MMFs, the top ten largest institutional MMFs by asset size held over twenty percent of institutional MMF assets and the top ten largest retail MMFs by asset size held over forty percent of retail MMF assets (figures calculated by authors using data obtained from the Investment Company Institute and iMoneyNet). See INV. CO. INST., *supra* note 189; iMoneyNet, *supra* note 232.

²⁵⁰ See, e.g., McCabe et al., *supra* note 171, at 56 (arguing that a capital buffer, "by shielding MMF investors from losses . . . would shift the incentives for ensuring that MMF risks are well managed from MMF shareholders to the owners of the capital buffer") (footnote omitted).

²⁵¹ See FSOC Proposed Recommendations, *supra* note 168, at 69,469–74 (describing proposal to combine small NAV buffer with minimum balance at risk); McCabe et al., *supra* note 171.

²⁵² For a description of the proposal, see FSOC Proposed Recommendations, *supra* note 168, at 69,469; McCabe et al., *supra* note 171, at 2–3.

²⁵³ FSOC Proposed Recommendations, *supra* note 168, at 69,470 (describing the minimum balance at risk proposal).

²⁵⁴ *Id.*

²⁵⁵ For a summary of these benefits, see McCabe et al., *supra* note 171, at 3.

²⁵⁶ *Id.* at 10 (stating that "a sensible way to create a disincentive [to redeem] is by stipulating that redeeming investors absorb losses in such a fund before other investors" and that "the MBR rules that we propose would cause some or all of a redeemer's MBR to be subordinated relative to non-redeemers' MBRs"); Schapiro, *supra* note 169 (asserting that "remaining investors would not be harmed by a redeeming investor's full withdrawal and the incentive to redeem fully and quickly at the first sign of trouble would be diminished").

²⁵⁷ For an example of how this would work in practice, see FSOC Proposed Recommendations, *supra* note 168, at 69,471 ("(a) An investor with a \$200,000 MMF account and a \$100,000 High Water Mark redeems \$120,000. The transaction is unaffected by the MBR requirement because the remaining balance of \$80,000 exceeds the MBR of \$3,000 (equal to 3 percent of the High Water Mark). The transaction does, however, cause a portion of the investor's MBR to be placed in a subordinated, or first-loss, position. The portion of the MBR that would be subordinated is \$619. (b) The investor closes the account the next day. The investor receives \$77,000, all of the Available Balance, immediately. This represents the entire remaining account value of \$80,000 less the \$3,000 MBR. The MBR shares will be redeemed after a 30-day delay. By closing the account, the investor causes its entire MBR to be subordinated for that 30-day period. However, the investor will receive the full \$3,000 after the 30-day delay, unless the fund suffers losses in excess of its NAV buffer.") (footnotes omitted). One need only add a few more redemption or investment transactions to see how difficult this approach could be for MMFs and investors.

²⁵⁸ *Id.* at 69,472–73. *See also* Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 73 (“[T]o apply continuous redemption restrictions accurately and consistently across all investors in money market funds, [fund complexes, intermediaries, and service providers], including a host of intermediaries, would need to undertake intricate and expensive programming and other significant, costly system changes.”); Letter from Timothy W. Cameron & John Maurello, Managing Dirs., Sec. Indus. & Fin. Mkts. Ass’n, to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council (Jan. 14, 2013), at 10 (reporting that SIFMA members anticipate that “reprogramming systems for an MBR would require at least a year of operational effort” and noting that some clients might successfully prevail upon brokers to use their resources to cover the held-back portion), *available at* <https://www.sifma.org/comment-letters/2013/sifma-submits-comments-to-the-fsoc-on-recommendations-for-money-market-fund-reform>; Letter from Lynn Dudley, Senior Vice President, Policy, Am. Benefits Council, to Mary Schapiro, Chairman, Sec. & Exchange Comm’n 3 (Jun. 19, 2012) (arguing that ERISA plan recordkeepers holding MMFs in omnibus accounts are not equipped to handle holdback requirements and would have to incur substantial costs to modify systems in order to do so), *available at* <http://www.sec.gov/comments/4-619/4619-204.pdf>.

²⁵⁹ McCabe et al., *supra* note 171, at 60. For the details of their analysis, *see id.* at 60–77 (charts demonstrating loss scenarios under different assumptions).

²⁶⁰ *See id.* at 40.

²⁶¹ FSOC Proposed Recommendations, *supra* note 168, at 69,471.

²⁶² *See, e.g.,* Hanson et al., *supra* note 100, at 27. *See also* Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 71–72 (“based on discussions with investors, our members have indicated that an MBR would increase a shareholder’s likelihood of redeeming during a financial crisis”).

²⁶³ *See, e.g.,* BLACKROCK, MONEY MARKET FUNDS: THE DEBATE CONTINUES 4 (2012) (reporting that its clients told BlackRock that “with a portion of their balance held back for 30 days *and* subordinated, they would choose to redeem much sooner—at the slightest sign of nervousness in the markets”), *available at* https://www2.blackrock.com/webcore/litService/search/getDocument.seam?venue=PUB_IND&source=GLOBAL&contentId=1111160117.

²⁶⁴ *See id.* at 4 (reporting that forty-three percent of BlackRock’s institutional clients dropped below a three percent minimum account balance at least once in 2011 and ten percent did so more than five times a year).

²⁶⁵ *See* TREASURY STRATEGIES, INC., *supra* note 183, at 17–19 (of 135 treasurers responding, ninety percent reported that they would decrease or stop using MMFs if a three percent subordinated holdback requirement were imposed); ASS’N OF FIN. PROF’LS, 2012 AFP LIQUIDITY SURVEY: INTRODUCTION AND KEY FINDINGS 24 (2012) (in survey asking about a ten percent holdback, forty-three percent of respondents said that their firms would stop using MMFs), *available at* http://www.afponline.org/pub/pdf/2012_AFP_Liquidity_Survey.pdf. *See also* Letter from DST Systems to Elizabeth M. Murphy, Sec’y, Sec. & Exchange Comm’n 5 (Mar. 2, 2012) (arguing that a minimum balance at risk would make MMFs incompatible with sweep accounts), *available at* <http://www.sec.gov/comments/4-619/4619-128.pdf>; *Hearing Regarding Perspectives on Money Market Reforms Before the S. Comm. on Banking, Housing and Urban Affairs*, 112th Cong. 4 (2012) (written statement of Nancy Kopp, State Treasurer, Md., on behalf of the Nat’l Ass’n of State Treasurers) (arguing that a holdback requirement “could be especially problematic for smaller governments”), *available at* http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=1fefa198-c629-48db-9f27-3be29f738606.

²⁶⁶ SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,878 (discussing proposed alternative).

²⁶⁷ *See id.* (discussing proposed alternative).

²⁶⁸ *See id.* (explaining that “rule 2a-7 would continue to permit money market funds to use the penny rounding method of pricing so long as the funds complied with the conditions of the rule, but would not permit use of the amortized cost method of valuation”).

²⁶⁹ *See id.* at 36,883–84. A majority of the board’s independent directors must also support removing the fee. *Id.*

²⁷⁰ *See id.* at 36,888.

²⁷¹ *See id.* at 36,884 (discussing operation of fees and gates).

²⁷² *See id.* at 36,880 (“To the extent that liquidity fees paid exceed such costs, they also can help increase the fund’s net asset value for remaining shareholders which would have a restorative effect if the fund has suffered a loss.”) *See also* Letter from Karla Rabusch, President, Wells Fargo Funds Mgmt., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 13 (“[T]he actions of those who choose to redeem in spite of the liquidity fee will help to support the fund’s market-based NAV and thus reduce or eliminate the potential

harm associated with the timing of their redemptions to other remaining investors.”); 2013 Fidelity Letter to the SEC, *supra* note 173, at 16 (“Investors that choose to remain in the fund during times when the redemption fee is in effect would benefit from the boost in NAV that the fund would gain from the fees paid by redeeming investors.”).

²⁷³ See SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,881 (“The fees, once imposed, should both curtail the level of redemptions, and fees paid by those that do redeem should, at least partially, cover liquidity costs incurred by funds and may even potentially repair the NAV of any funds that have suffered losses”). See also Letter from Karla Rabusch, President, Wells Fargo Funds Mgmt., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 13 (“[L]iquidity fees would actually provide an affirmative reason for investors to avoid redeeming from a distressed fund. That is, investors redeeming from a distressed fund will pay to exercise their right of redemption. Those investors who do not need their money immediately, but who otherwise might redeem in reaction to market dislocation, will have an affirmative disincentive from doing so.”); 2013 Fidelity Letter to the SEC, *supra* note 173, at 15 (“The liquidity fee would serve as a premium on redemptions and, therefore, would discourage redemptions.”).

²⁷⁴ See SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,879 (“Under normal market conditions, fund shareholders would continue to enjoy unfettered liquidity for money market fund shares.”) & n.342 (citing relevant comment letters).

²⁷⁵ See, e.g., BlackRock, REGARDING THE IOSCO CONSULTATION REPORT OF APRIL 2012: MONEY MARKET FUND SYSTEMIC RISK ANALYSIS AND REFORM OPTIONS 10 (2012) (noting that “the cost of implementing standby fees is much lower than the cost of implementing other options”), available at https://www2.blackrock.com/webcore/litService/search/getDocument.seam?source=LITLIST&contentId=1111165822&venue=PUB_INS.

²⁷⁶ See, e.g., SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,892 (finding that each MMF could incur operational costs of \$1.1 million to \$2.2 million to modify its systems to handle liquidity fees and gating).

²⁷⁷ See, e.g., SCOTT, *supra* note 100, at 221 (arguing, based on experience with bank runs, that the prospect of redemption restrictions will accelerate a run); Letter from Gregory P. Dulski, Corporate Counsel, Federated Investors, to Mohamed Ben Salem, Int’l Org. of Sec. Comm’ns, *supra* note 243, at 33 (“Federated believes that liquidity fees, from the investors’ perspective, are simply a different way to break the dollar (and would be far more likely to occur than breaking a dollar based on NAV), and would generate large preemptive redemptions from MMFs.”); McCabe et al., *supra* note 171, at 58–59 (arguing that sophisticated investors will monitor MMFs and redeem preemptively before gates or fees are triggered).

²⁷⁸ See, e.g., SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,881 n.361 (citing literature finding that investors “trade ahead of predictable market closings and price limit hits”).

²⁷⁹ *Id.* at 36,881 (noting that “the opportunity for preemptive redemptions will decrease as a result of the amount of discretion fund boards would have in imposing liquidity fees and gates”).

²⁸⁰ Investment Company Act of 1940 § 22(e), 15 U.S.C. § 80a-22(e) (2012).

²⁸¹ *Id.*

²⁸² SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 37,008 (setting forth the text of proposed rule 2a-7(c)(2)(ii)).

²⁸³ *Id.*

²⁸⁴ See *supra* table 1. For responsibilities specific to MMF boards, see *supra* table 2.

²⁸⁵ See, e.g., Letter from Robert Sabatino, Managing Dir. & Head of US Taxable Money Markets & Keith A. Weller, Executive Dir. & Senior Assoc. Gen. Counsel, UBS Global Asset Mgmt. (Americas), to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 15 (Feb. 14, 2013) (“We believe strongly that any triggering of liquidity fees or gates should be left to the discretion of a money fund’s board. The circumstances under which a money fund may be called upon to impose liquidity fees or redemption gates may not be easily determinable beforehand. Rather than focusing on specific measures, the trigger should be a finding by the money fund’s board that the fund is experiencing circumstances that threaten the ability of the fund to continue to maintain its dollar share price and/or the ability of the fund to pay the proceeds of redemptions.”), available at <http://www.regulations.gov/#!documentDetail;D=FSOC-2012-0003-0109>.

²⁸⁶ See, e.g., Clifford E. Kirsch & Bibb L. Stench, *An Introduction to Mutual Funds*, in FINANCIAL PRODUCT FUNDAMENTALS § 6:2.3 (Clifford E. Kirsch ed., 2011) (explaining that “[w]hile the Board may delegate certain oversight responsibilities to the investment adviser, the directors themselves retain overall responsibility for proper operation of the fund”), available at https://www.pli.edu/product_files/EN00000000152652/103208.pdf.

²⁸⁷ See *supra* note 36 and accompanying text.

²⁸⁸ Unlike MMFs, hedge funds are not registered investment companies according to the Investment Company Act and therefore are not required to adhere to the prohibition on redemption restrictions established by section 22(e) of the Investment Company Act. For more on the laws governing hedge funds, see generally Houman B. Shadab, *The Law and Economics of Hedge Funds: Financial Innovation and Investor Protection*, 6 BERKELEY BUS. L.J. 240 (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1066808.

²⁸⁹ See GEORGE O. ARAGON, *Share Restrictions and Asset Pricing: Evidence from the Hedge Fund Industry*, 83 J. FIN. ECON. 33, 56 (2007) (finding that the relationship between hedge fund returns and share restrictions is positive and that investors can “expect higher returns on funds with share restrictions, commensurate with the illiquidity they bear”).

²⁹⁰ See Kacperczyk & Schnabl, *How Safe Are MMFs?*, *supra* note 41, at 1077 (finding that “fund flows are highly responsive to current yields”); Baba et al., *supra* note 53, at 71 (finding that in 2007 and 2008, “US money market funds continued to compete keenly under pressure from shareholders for yield” and did so in part by “extending the maturity of their portfolios”).

²⁹¹ ADAM L. AIKEN, CHRISTOPHER P. CLIFFORD & JESSE ELLIS, DISCRETIONARY LIQUIDITY: HEDGE FUNDS, SIDE POCKETS, AND GATES 27 (2012) (concluding that redemption restrictions “appear to have cast a shadow in the eyes of investors on hedge fund families that chose to restrict liquidity, hindering their ability to raise capital and leading them to reduce fees in the wake of the financial crisis”), available at <http://ssrn.com/abstract=2185999>.

²⁹² Cf. FSOC Proposed Recommendations, *supra* note 168, at 69,466 (proposing to ban sponsor support).

²⁹³ Baba et al., *supra* note 53, at 71 (“Support announcements in 2007 and early 2008 acted as a drag on the growth of some fund families, with concern over risk management outweighing the reassurance of support.”).

²⁹⁴ See, e.g., Gallagher & Paredes, *supra* note 170 (“Discretionary gating directly responds, we believe, to run risk, both as to an individual fund and across multiple funds, as well as to the potential disparate treatment between retail and institutional investors. This should have the effect of addressing the conditions that gave rise to certain forms of governmental support in 2008, when money market funds had to sell portfolio assets to meet redemptions and scaled back their participation in short-term credit markets.”).

²⁹⁵ MARK HANNAM, INSTITUTIONAL MONEY MARKET FUND ASS’N, MONEY MARKET FUNDS, BANK RUNS AND THE FIRST-MOVER ADVANTAGE 18 (2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187818.

²⁹⁶ See, e.g., 2013 Fidelity Letter to the SEC, *supra* note 173, at 15 (“A gated fund would not need to sell assets into a distressed market, and thus would protect non-redeeming shareholders from absorbing the associated liquidation losses. Because the gated fund would not be forced to sell assets to meet redemptions, it would not be contributing to potential disruption of the short-term markets. Moreover, as the fund builds liquidity by allowing its holdings to mature, it would act as a market stabilizing force by reinvesting the proceeds of its maturities over a horizon consistent with its targeted re-opening date.”); Letter from John D. Hawke on behalf of Federated Investors to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council (Feb. 15, 2013) (distinguishing liquidity fees from gates and explaining that “when a credit event occurs, the imposition of a voluntary gate will allow an MMF’s board to halt outflows, thus preventing a run while the board considers options for the protection of shareholders” and going on to point out that “[t]he voluntary gate would provide an MMF the necessary time to reestablish liquidity as short-term portfolio instruments reach maturity”), app. at 37–38, available at <https://www.sec.gov/comments/mms-response/mmsresponse-35.pdf>.

²⁹⁷ See MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES, 1867–1960 166–67 (1st paperback ed. 1971). They determine that redemption restrictions protected the banking system, ensured that the failure of banks did not set off a chain reaction, provided distressed banks with the time to raise adequate liquidity, and “gave time for the immediate panic to wear off.” See *id.* at 167.

²⁹⁸ Kevin Hassett, *Hedge Fund Roach Motels Might Just Be a Blessing*, BLOOMBERG (Dec. 8, 2008), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=anXt996yzU6o>. This was nevertheless a difficult period for hedge funds. See Shadab, *supra* note 288, at 290–95 (discussing the experience of hedge funds during the financial crisis).

²⁹⁹ JOHN DAI & SURESH SUNDARESAN, RISK MANAGEMENT FRAMEWORK FOR HEDGE FUNDS ROLE OF FUNDING AND REDEMPTION OPTIONS ON LEVERAGE 33 (2010), available at http://www0.gsb.columbia.edu/faculty/ssundaresan/papers/Hedge_fund_leverage2.pdf. But see MELVYN TEO, HOW LIQUID ARE LIQUID HEDGE FUNDS? 34–35 (Research Collection BNP Paribas Hedge Fund Centre Paper 12, 2010) (arguing that giving hedge funds the “option

to raise gates may ironically encourage hedge funds to take on greater liquidity risk, and in so doing, exacerbate the asset-liability mismatch”), available at http://ink.library.smu.edu.sg/bnp_research/12.

³⁰⁰ See HANNAM, *supra* note 295, at 19 (explaining that “if all investors know and understand that the MMF sponsor would suspend convertibility if and when the fund can no longer provide liquidity to redeeming investors without disadvantaging non-redeeming investors—i.e. no investor is disadvantaged by the actions of other investors—then the first mover advantage is removed”). See also Letter from Jonathan Curry et al., HSBC Global Asset Mgmt., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 18 (Feb. 15, 2013) (“In a period of heightened systemic risk, the ability of money market funds to suspend the standard terms under which shareholders are able to redeem fund units for cash, is the mechanism most likely to eradicate the possibility of a first mover advantage and thereby to reduce the risk of a run.”), available at <http://www.regulations.gov#!documentDetail;D=FSOC-2012-0003-0111>; Letter from Peter E. Madden, Chairman of the Indep. Trustees of the Federated Funds, to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 2–3 (Feb. 13, 2013) (arguing that “a temporary suspension of redemptions could prevent unfair results such as redeeming shareholders being advantaged over remaining shareholders” in the event an MMF is facing a “potential run” or “other unforeseen circumstances”), available at <http://www.sec.gov/comments/mms-response/mmsresponse-33.pdf>.

³⁰¹ See, e.g., Gallagher & Paredes, *supra* note 170 (arguing that gating could mitigate the “disparate treatment between retail and institutional investors”).

³⁰² See, e.g., Letter from Patricia A. Maleski, President, JPMorgan Mut. Funds, to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council 12 (Jan. 14, 2013) (“Any fund that is in jeopardy of breaching a trigger will likely see significant redemptions ahead of the actual trigger event.”), available at <http://www.regulations.gov#!documentDetail;D=FSOC-2012-0003-0043>.

³⁰³ See Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 55–56 (explaining that many of the processes necessary to enable gating at the end of a trading day already are in place, although some modifications would be necessary).

³⁰⁴ See, e.g., Hanson et al., *supra* note 100, at 25 (“[G]ating rules have an inherently micro-prudential focus. They are based on the condition of individual funds and aim to control the behavior of investors in individual funds. However, gating rules can have significant macro-prudential consequences. Specifically, news that one MMF has initiated redemption restrictions could set off a system-wide run by panic-stricken investors who are anxious to redeem their shares before other funds also initiate restrictions.”).

³⁰⁵ See Chernenko & Sunderam, *supra* note 82, at 10 (identifying MMFs as the “single largest holder of commercial paper in 2010” with thirty-seven percent of the market); Bd. of Governors of the Fed. Reserve Sys., *Financial Accounts of the United States: Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts, First Quarter 2013* 92 (Fed. Reserve Statistical Release, June 2013) (finding that MMFs hold \$351.1 billion of the \$1.0012 trillion commercial paper outstanding in the first quarter of 2013, more than any other purchaser), available at <http://www.federalreserve.gov/releases/z1/current/z1.pdf>.

³⁰⁶ See Letter from President Eric S. Rosengren et al. to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 194, at 7 (“Because many MMFs hold similar assets, one fund’s imposition of fees and gates could encourage runs on other non-gated funds.”).

³⁰⁷ See *id.*

³⁰⁸ See *supra* notes 71–79 and accompanying text.

³⁰⁹ See Letter from Paul Schott Stevens, President & CEO, Inv. Co. Inst., to Amias Gerety, Deputy Assistant Sec’y, Fin. Stability Oversight Council, *supra* note 173, at 57.

³¹⁰ SEC 2013 Money Market Fund Reform Proposal, *supra* note 175, at 36,884.

³¹¹ Arthur Levitt, Chairman, Sec. & Exchange Comm’n, Remarks Before the Second Annual Symposium for Mutual Fund Trustees and Directors (Apr. 11, 1995), available at <http://www.sec.gov/news/speech/speecharchive/1995/spch035.txt>.