

Testimony of
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PERSPECTIVES ON MONEY MARKET MUTUAL FUND REFORMS

Before the Senate Committee on Banking, Housing, and Urban Affairs
June 21, 2012 at 10:00 am
Room 538, Dirksen Senate Office Building

Chairman Johnson, Ranking Member Shelby and members of the Committee, thank you for the opportunity to appear here today to offer my perspectives on money market mutual fund reform. My name is David Scharfstein, and I am the Edmund Cogswell Converse Professor of Finance and Banking at Harvard Business School. I am also a member of the Squam Lake Group, which is comprised of 13 financial economists who offer guidance on the reform of financial regulation. Our group has issued a policy brief that advocates the introduction of capital buffers for money market funds. I would like to provide a rationale for our recommendations, but my statement, though aided by feedback from members of the Squam Lake Group, is not being made on its behalf or any other organizations with which I am affiliated.

1. Introduction

Observers of the first 35 years of money market fund (MMF) history might have concluded that MMFs are a relatively safe investment and cash management tool with no significant implications for financial system stability. But the events surrounding the financial crisis of 2007-2009 suggest otherwise. When the Primary Reserve Fund “broke the buck” after the failure of Lehman Brothers, it precipitated large redemptions from prime MMFs, mainly by institutional investors who were concerned that large MMF exposures to stressed financial firms would lead to losses. This “run” on prime MMFs added to stresses on the financial system at the peak of the financial crisis because large banks depend on MMFs for short-term funding. Faced with large withdrawals, MMFs were unable to invest in the commercial paper (CP), repurchase agreements (repo) and certificates of deposit (CDs) issued by large banks, broker-dealers, and finance companies. To stop the run, stabilize the money markets, and ease the funding difficulties of large financial institutions, the U.S. Treasury had little choice but to temporarily guarantee MMF balances.

While extreme, the events of 2008 point to fundamental risks that prime money market funds pose for the financial system. The main points that I want to make are as follows:

1. Prime MMFs have evolved into a critical source of short-term, wholesale funding for large, global banks. They are now a much less important funding source for nonfinancial firms.

2. Prime MMF portfolios embed financial system risk because they are short-term claims on large, global banks. Moreover, during periods of stress to the financial system, some MMFs have actively taken on systemic risk by investing in higher-yielding, risky securities in an effort to grow their assets under management.
3. The structure of MMF funding embeds financial system risk because MMF shareholders can pull their funds on demand, and have done so en masse when risk is amplified. This in turn creates systemic funding difficulties for large banks that rely on MMFs for their funding.
4. The SEC's 2010 reforms are a potentially useful first step in enhancing money market fund stability, but more reforms are needed to reduce risk in the financial system. Requiring capital buffers large enough to meaningfully reduce portfolio and run risk is a desirable next step in MMF reform.

2. Money Market Funds and Systemic Risk

A. MMFs as an Important Funding Source for Large, Global Banks

Total MMF assets are almost \$2.6 trillion. Of this amount, \$1.4 trillion are in prime funds, down from a peak of over \$2 trillion in August 2008. Approximately \$900 billion of prime MMF assets are in institutional funds, and the remainder are in retail funds. Importantly, prime MMF portfolios are mainly invested in money-market instruments issued by large, global banks – for the most part in CP, repo, and CDs. Exhibit 1 lists the largest non-government issuers of money market instruments held by prime MMFs.¹ These top 50 issuers account for 93% of prime MMF assets that are not backed by the government. And 93% of these are claims on large global banks, most of which (78%) are foreign banks. The rest are mostly claims on financial firms, including the finance arms of large corporations. There are only two nonfinancial firms in the top 50 issuers. Altogether, only about 3% of prime MMF assets are invested in paper issued by nonfinancial firms. A combination of dramatic growth of financial CP, and declining nonfinancial CP issuance since its peak in 2000, has meant that MMFs have small exposures to nonfinancial issuers.²

Given that prime MMFs mostly invest in money market instruments issued by financial firms, it is not surprising that they provide a sizable share of the short-term, wholesale funding of large financial institutions. A rough estimate is that prime MMFs provide about 25% of this funding.³

¹ I am grateful to Peter Crane of Crane Data for providing these data.

² As of the first quarter 2012, there was only \$127 billion of domestic nonfinancial CP outstanding, down from its peak of over \$300 billion in 2000. Commercial paper is also a much smaller share of the liabilities of non-financial firms – now just 1.6% as compared to its peak of 6.5% in 2000.

³ Here I am defining short-term wholesale funding as uninsured domestic deposits + primary dealer repo + financial CP.

Thus, prime MMFs essentially collect funds from individuals and firms to provide financing to large banks, which in turn use the proceeds to buy securities and make loans. This process essentially adds a step in the chain of credit intermediation. The benefit of adding this step is that it provides MMF investors with a diversified pool of deposit-like instruments with the convenience of a single deposit-like account. But the cost is that it adds risk to the financial system. Risk is increased because MMFs allow investors to redeem their shares on demand, thereby increasing the likelihood of a run on MMFs and the banks they fund during periods of stress to the financial system. Risk may also be increased because MMFs have incentives to chase yield (and risk) in an effort to attract more assets. And investors may be willing to move assets to a riskier fund because they can exit the fund on demand. MMFs and their investors do not take into account the full societal costs of the risks they take because they do not bear all the costs and because the government has proven willing to support money markets and MMFs during times of financial system stress. Indeed, most of the government interventions during the financial crisis were directed at supporting the money markets and money market funds. (See Exhibit 2 for a list of these interventions.) Regulation of MMFs is needed to reduce excessive run risk and portfolio risk.

B. Systemic Portfolio Risk

In a recent speech, Eric Rosengren, President and CEO of the Federal Reserve Bank of Boston, noted that there is considerable credit risk in the portfolios of prime MMFs as measured by credit default swap (CDS) spreads.⁴ He reported that as of September 30, 2011, 23% of holdings were backed by a firm with a CDS spread between 200 and 300 basis points, about 10% by a firm with a CDS spread between 300 and 400 basis points, and almost 5% were backed by a firm with a CDS spread in excess of 400 basis points. For reference, as of September 30, 2011, the average investment grade corporate bond had a CDS spread of roughly 145 basis points.⁵ Thus, as of September 2011, a meaningful fraction of the securities in prime MMFs were issued by firms with CDS spreads well in excess those of the safest investment grade companies.

Importantly, because MMFs own a pool of claims on large financial institutions, this credit risk also includes considerable financial system risk. If the financial system is under stress, as it was in the two years surrounding the failure of Lehman Brothers in September 2008, it manifests itself in short-term funding difficulties, and an increase in the risk of money market instruments.

Moreover, during the financial crisis of 2007-2009, and the more recent Eurozone sovereign debt crisis, some MMFs actually sought to increase risk and yield in an attempt to attract investors

⁴ See “Money Market Mutual Funds and Financial Stability,” speech by Eric Rosengren at Federal Reserve Bank of Atlanta 2012 Financial Markets Conference, Stone Mountain, Georgia April 11, 2012. <http://www.bos.frb.org/news/speeches/rosengren/2012/041112/041112.pdf>

⁵ In particular, the CDX.IG CDS index, which includes 125 investment grade corporate bonds, had a 5-year CDS spread of 144 basis points on September 30, 2011. By contrast, the CDX.HY CDS index, which includes 100 high yield bonds, had a 5-year CDS spread of 829 bps. Note that these CDS spreads are for bonds with a longer maturity and, in some cases, lower seniority than the money market instruments held in MMF portfolios, and thus will tend to be riskier. Nevertheless, the point is that MMFs can have significant exposures to risky banks.

and grow assets under management in a low interest-rate environment. In particular, during the summer of 2007, interest rates on asset-backed commercial paper (ABCP) rose dramatically in response to concerns about the quality of subprime loans that served as collateral for these conduits. Some MMFs responded to this spike in market risk by actually *increasing* portfolio risk, taking on higher-yielding instruments like ABCP in an effort to boost returns and attract new investors. Indeed, institutional investors proved to be very responsive to higher yields, moving assets to MMFs that had increased yields and risk. Exhibit 3, based on data used in a 2012 study by Marcin Kacperczyk and Philipp Schnabl, shows that MMFs offering the highest yields were able to grow their assets by close to 60% from August 2007 – August 2008, while those that did not increase yields by very much saw little or no asset growth.⁶

Prime institutional funds responded in similar fashion to the Eurozone sovereign debt crisis. As concerns rose about the exposure of Eurozone banks to struggling Eurozone countries (such as Greece, Portugal, Spain, and Italy), yields on instruments issued by these banks increased. This created an opportunity for MMFs to increase yields and attract assets, albeit with an increase in risk. Indeed, a recent study by Sergey Chernenko and Adi Sunderam finds that some funds loaded up on the riskier, higher-yielding securities of Eurozone banks and in the process were able to grow assets.⁷

Two important points emerge from these studies. First, some MMFs view it as in their interest to chase risk in an attempt to increase yields and grow assets even though such risk-taking could threaten the viability of the fund, trigger runs at the fund and other ones (as later happened with the Reserve Primary Fund), and ultimately threaten the stability of the broader financial system. Second, institutional investors can be extremely yield sensitive and risk tolerant; they appear willing to move large sums to increase returns by 10 or 20 basis points. In part, this may be because they get some measure of protection from the option to redeem their shares on demand. But when they protect themselves in this way, they exacerbate the stress on MMFs and they threaten the ability of MMFs to fund the activities of the banking sector.

C. Systemic Funding Risk

As just noted, the funding structure of MMFs creates risks for the broader financial system. Because MMF shares are demandable claims – they allow investors to redeem their shares on a daily basis – investors can pull their funds from MMFs at the slightest hint of trouble. Funding risks are also amplified by the fact that MMFs are allowed to maintain a stable \$1 NAV per share using amortized cost accounting and rounding. This enables investors to redeem their shares at a \$1 share price even if the marked-to-market value is less than \$1 per share. The stable NAV feature creates incentives for investors to beat other investors out the door before the fund breaks the buck and is no longer allowed to redeem shares at the \$1 share price.

A run is not just damaging to the MMF, but it could be damaging to the broader financial system.

⁶ See Marcin Kacperczyk and Philipp Schnabl, “How Safe are Money Market Funds?” Working Paper, Stern School of Business, New York University, April 2012. I am grateful to Philipp Schnabl for preparing Exhibit 3.

⁷ Sergey Chernenko and Adi Sunderam, “The Quiet Run of 2011: Money Market Funds and the European Debt Crisis,” Working Paper, Harvard Business School, March 2012.

A run at one MMF could precipitate runs on other MMFs if, as one might expect, investors are concerned that the factors that led to losses in one fund could affect other funds. In this case, multiple funds will have difficulty rolling over the securities in their portfolio, amplifying the funding stresses on financial institutions, which can spill over into the real economy. It is altogether possible that an otherwise healthy bank will face funding difficulties because the failure of another bank leads to a run on the MMF sector.

A systemic MMF run has occurred twice in the last four years. As shown in Exhibit 4, the failure of Lehman Brothers in September 2008 precipitated a run on prime institutional MMFs, with assets falling by 29% within two weeks. There was no run on prime funds by retail investors. The run would likely have been much more severe had Treasury not stepped in and temporarily guaranteed MMF balances.

A similar, but slower-moving version of this story played out in the second half of 2011 as prime institutional MMF investors became concerned about the exposure of European banks to the sovereign debt of struggling Eurozone countries. Given the large presence of money market instruments issued by Eurozone banks in the portfolios of U.S. MMFs, this led to significant redemptions from prime institutional MMFs from June-December 2011, as shown in Exhibit 4. Again, the redemptions were more pronounced among institutional investors than retail investors. This is consistent with research showing that it is institutional investors that are more prone to chase yield and risk, and then pull their funds when their perspectives on risk change.⁸ MMF outflows have added to the stresses on Eurozone banks, particularly on their ability to fund their dollar loans both here and abroad.

3. Regulatory Reform Alternatives and the Need for Capital Buffers

The broad goal of money market fund regulation should be to ensure that portfolio risk and funding risk are within acceptable limits. Regulation can take a variety of forms to achieve this objective. Portfolio risk can be limited by placing restrictions on what MMFs can hold in their portfolios, or by reducing the incentives of MMFs to take excessive risk. Funding risk can be limited by reducing the ability of shareholders to redeem their shares on demand, or by reducing their incentives to do so.

A number of reform proposals are being considered, including elimination of stable NAVs and capital buffers (possibly combined with redemption restrictions). These reforms would be in addition to new regulations adopted by the SEC in early 2010, which require MMFs to hold more liquid, higher quality and shorter maturity assets, allow MMFs to suspend redemptions under certain conditions, and require more disclosure of MMF portfolio holdings and their value.

The MMF industry has argued that these reforms are sufficient to ensure MMF safety.⁹ While these reforms may, in fact, be helpful in reducing portfolio and funding risk, SEC Chairman

⁸ Kacperczyk and Schnabl, *op. cit.*

⁹ See, for example, "Response to Reported SEC Money Market Funds Proposals," Investment Company Institute, February 17, 2012.

Mary Shapiro is right to point out that more needs to be done.¹⁰ While it is desirable to have MMFs hold more liquid securities to buffer against large redemptions, it is often difficult for regulators to identify assets that will continue to be liquid during a liquidity crisis. Indeed, even securities backed by high quality collateral became illiquid during the financial crisis in 2008.¹¹ Moreover, the requirement that MMFs hold shorter maturity securities, while potentially enhancing the safety of MMFs, may actually come in conflict with the objectives of other regulatory initiatives to get banks to be less reliant on short-term, wholesale funding.¹²

Additional reforms are also needed because a number of the tools that the government used to support money markets and stabilize MMFs are now more restricted or unavailable. In particular, the Emergency Economic Stabilization Act of 2008, the legislation that created the Troubled Asset Relief Program, outlaws the use of Treasury's Exchange Stabilization Fund to guarantee MMF shares as it did in September 2008. And programs that the Federal Reserve and FDIC introduced to stabilize money markets during the crisis would now require either executive branch or Congressional approval.¹³ Some might argue that without these emergency supports, moral hazard will be reduced and, as a result, MMFs and their shareholders will take less risk. But the response of MMFs and their shareholders to the Eurozone sovereign debt crisis suggests otherwise.

The two main types of reform proposals are (i) replacement of the stable NAV structure with a floating NAV structure; (ii) various forms of capital buffers. The capital buffer proposals include: requirements that sponsors put their own capital at risk; creation of two shareholder classes, one subordinate to the other; and redemption holdbacks that are put at risk when shareholders redeem their shares.

Floating NAV Proposal

As noted, above stable NAVs exacerbate run incentives when MMFs get in trouble because early redemptions are made at the \$1 share price even if the market-value NAV is less than \$1. There are a number of ways in which a floating NAV structure would help promote MMF stability. First, it would reduce the benefits of early redemptions from a stressed fund since redemptions would occur at market values rather than an inflated \$1 NAV. Second, it would likely make clear to investors that MMFs are risky investment vehicles and it would provide a more transparent view of the risk. This could help to dampen the sort of yield-chasing behavior we have recently

¹⁰ SEC Chairman Schapiro is quoted as saying, "While many say our 2010 reforms did the trick - and no more reform is needed - I disagree. The fact is that those reforms have not addressed the structural flaws in the product. Investors still have incentives to run from money market funds at the first sign of a problem." See Sarah N. Lynch, "SEC Schapiro Renews Call for Money Fund Reforms," *Reuters*, March 15, 2012.

¹¹ See Morgan Ricks, "Reforming the Short-Term Funding Markets," The Harvard John M. Olin Discussion Paper Series, No. 713, May 2012.

¹² In particular, the Tri-Party Repo Task Force established by Federal Reserve Bank of New York has recommended that dealers should shift to longer-term repo funding. See also "Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring," Bank for International Settlements, December 2010, for a description of international regulatory initiatives to reduce bank dependence on short-term funding.

¹³ Ricks, *op. cit.*

observed, followed by the runs that occur during a crisis. Thus, the floating NAV proposal, while mainly acting to reduce funding risk, could also help to reduce portfolio risk.

The MMF industry has strongly opposed floating NAVs, arguing that investors derive significant operating, accounting, and tax management benefits from the ability to transact at a fixed price.¹⁴ While there may be benefits of such a pricing structure, it is unclear how much of the institutional demand for MMFs derives from such a structure. After all, many large institutional investors manage their own pool of money market instruments, which of course fluctuate in value. It is possible that a good deal of MMF demand comes from the higher yields they have historically been able to offer, combined with the potential benefits of being able to diversify across money market instruments. These benefits would continue to exist in a floating NAV structure.

Another concern is that floating NAVs might not be sufficient to stop runs in times of stress. Advocates of floating NAVs believe that the fixed NAV structure is the attribute of MMFs that significantly exacerbates run incentives. An alternative view is that runs derive from a change in investor perception of risk combined with their ability to redeem shares on demand regardless of whether the redemption occurs at \$1 or slightly less. Indeed, given the illiquidity of securities in MMF portfolios, mass selling of those securities could drive down their price. The prospect of fire sales also gives MMF shareholders incentives to exit early and could precipitate a run. One MMF industry study has pointed out that floating-NAV instruments, such as “ultra-short” bond funds and certain French floating-NAV money market funds were not immune from substantial sudden redemptions during the financial crisis.¹⁵ If so, then some form of a capital buffer could be a more effective run-prevention mechanism.

Capital Buffers

The Squam Lake Group, of which I am a member, has proposed capital buffers as a mechanism for promoting more stable MMFs.¹⁶ The policy brief outlines a number of possible ways that capital buffers could be structured and suggests that individual MMFs be given some flexibility in choosing the precise form of the buffer. For example, some sponsors may prefer to set aside their own capital, while others may prefer to issue a subordinated, loss-absorbing share class. While some choice may be desirable, it will be necessary to restrict the menu of options so that investors can readily assess the degree of capital support.

With a capital buffer, first losses are incurred by capital providers, either fund sponsors or subordinated share classes. This reduces the incentive of MMF investors to run because they can be more confident that their investment is protected. A capital buffer could also act to reduce portfolio risk. If the sponsor provides the capital, the sponsor would presumably have greater incentives than it does now to avoid losses. Even if capital is provided by a subordinated share class, sponsors would have incentives to reduce portfolio risk to limit the cost of this capital and increase yields on the senior share classes.

¹⁴ See “Report of the Money Market Working Group,” Investment Company Institute, March 17, 2009.

¹⁵ *Ibid.*

¹⁶ “Reforming Money Market Funds: A Proposal by the Squam Lake Group,” January 14, 2011.

Although capital buffers may seem like a significant departure from the current regime, MMF sponsors have often provided capital support when necessary. As documented recently by Eric Rosengren, fund sponsors provided capital support in 56 instances from 2007 – 2010. In nine cases, support exceeded 1% of net asset value.¹⁷ However, capital requirements are preferable to *ad hoc* capital support because with capital requirements investors will know that there is layer of capital support to protect them; if capital support is *ad hoc*, investors will run in the face of uncertainty about whether support will be forthcoming.

There is also active debate about what the right level of capital should be. Industry advocates suggest relatively low levels of capital given historical loss rates. However, it is important to set capital levels comfortably above historical loss rates and prior levels of *ad hoc* capital support so that investors are confident that their funds are safe and have no incentive to run. In addition, historical loss during the crisis of 2007-2009 occurred against the backdrop of extraordinary government support of the money markets and money market funds. Without such support, which may not be forthcoming to the same degree in the next crisis, loss rates could well be higher than the historical crisis average. For these reasons, capital buffers would need to be set meaningfully in excess of historical loss rates and *ad hoc* capital support levels.

Finally, the MMF industry has generally opposed capital buffers, arguing that they are costly and would make MMF sponsorship unprofitable. While there are costs of a capital buffer, the costs should not be particularly high if, as industry opponents argue, MMFs are relatively safe.¹⁸ Moreover, capital is also costly to banks, and yet there is widespread agreement that they should hold capital. Like banks, MMFs are systemically significant financial intermediaries and as such should have capital buffers to promote a more stable financial system.

Thank you for the opportunity to present my views on money market fund reform. I look forward to answering any questions you may have.

¹⁷ Rosengren, op. cit.

¹⁸ For example, suppose there was a capital buffer that required sponsors to set aside 2% of NAV in Treasuries. Sponsors would have to pay a liquidity premium for holding Treasuries. This liquidity premium is on the order of 1%. With a 2% buffer, this cost amounts to just 2 basis points. The potentially greater cost comes from the possibility that the sponsor loses the capital as compared to a situation where the sponsor just walks away from the fund. If the risk is low, this cost should be minimal. Note also that many sponsors choose to support their funds when they risk breaking the buck, so relative to such non-contractual support the cost of the buffer is even lower.

Exhibit 1: List of Top-50 Non-Government Issuers in Prime MMF Portfolios, May 2012

Total prime money market fund (MMF) assets were \$1,423 billion. Approximately \$308 billion of prime MMF assets were invested in Treasuries, Agency securities or municipal securities. Based on data from Crane Data.

Rank	Issuer	May 2012 (USD billions)	Percent of Prime MMF Assets	Rank	Issuer	May 2012 (USD billions)	Percent of Prime MMF Assets
1	Barclays Bank	56.8	3.99%	26	HSBC	17.4	1.22%
2	Deutsche Bank AG	52.1	3.66%	27	DnB NOR Bank ASA	15.8	1.11%
3	Bank of Tokyo-Mitsubishi UFJ Ltd	45.4	3.19%	28	BNP Paribas	15.2	1.07%
4	Bank of Nova Scotia	42.9	3.01%	29	Skandinaviska Enskilda Banken AB	14.5	1.02%
5	Sumitomo Mitsui Banking Co	42.6	2.99%	30	Canadian Imperial Bank of Commerce	14.1	0.99%
6	National Australia Bank Ltd	41.4	2.91%	31	Australia & New Zealand Banking Group Ltd	13.7	0.96%
7	JP Morgan	40.4	2.84%	32	Credit Agricole	13.4	0.94%
8	Credit Suisse	40.2	2.82%	33	Straight-A Funding LLC	11.6	0.81%
9	RBC	37.8	2.66%	34	FMS Wertmanagement	11.4	0.80%
10	Rabobank	37.6	2.65%	35	ABN Amro Bank	10.4	0.73%
11	Bank of America	37.1	2.60%	36	Norinchukin Bank	10.3	0.72%
12	Westpac Banking Co	28.9	2.03%	37	Lloyds TSB Bank PLC	9.6	0.68%
13	Citi	28.5	2.00%	38	Toyota	9.2	0.64%
14	ING Bank	25.8	1.81%	39	State Street	9.1	0.64%
15	Mizuho Corporate Bank Ltd	25.7	1.81%	40	Wells Fargo	8.9	0.62%
16	RBS	23.5	1.65%	41	Natixis	7.7	0.54%
17	General Electric	22.9	1.61%	42	NRW.Bank	6.6	0.46%
18	Bank of Montreal	22.6	1.59%	43	Morgan Stanley	6.3	0.44%
19	Svenska Handelsbanken	22.4	1.57%	44	Nestle	6.2	0.43%
20	Commonwealth Bank of Australia	21.6	1.52%	45	MetLife Insurance Company	5.5	0.39%
21	Toronto-Dominion Bank	20.9	1.47%	46	US Bank	5.2	0.36%
22	UBS AG	20.1	1.41%	47	Swedbank AB	4.9	0.34%
23	Societe Generale	19.6	1.38%	48	Coca-Cola Co	4.5	0.31%
24	Nordea Bank	19.4	1.36%	49	Branch Banking & Trust Co	4.3	0.30%
25	Goldman Sachs	17.5	1.23%	50	Oversea-Chinese Banking Co	4.1	0.29%

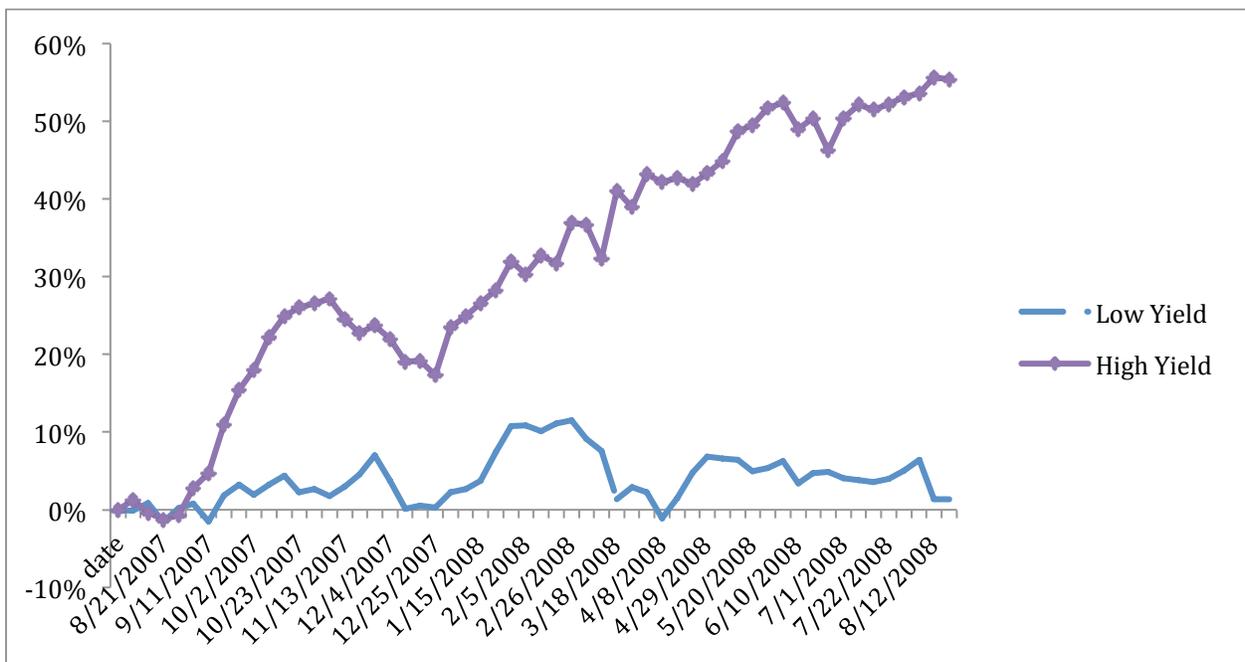
Exhibit 2: Select Interventions in Money Markets During the Financial Crisis

Source: Morgan Ricks, "Reforming the Short-Term Funding Markets," The Harvard John M. Olin Discussion Paper Series, No. 713, May 2012.

Money Market Instrument	Emergency Policy Measure
Money market mutual fund shares	MMF Guarantee (Treasury) Money Market Investor Funding Facility (Fed)
Uninsured Deposits	Transaction Account Guarantee (FDIC) Term Auction Facility (Fed) Deposition Insurance Limit Increase (EESA)
Eurodollars	Central Bank Liquidity Swaps (Fed)
Financial Commercial Paper	Temporary Liquidity Guarantee Program (FDIC)
Nonfinancial Commercial Paper	Commercial Paper Funding Facility (Fed)
Asset-Backed Commercial Paper	ABCP MMF Liquidity Facility (Fed)
Primary Dealer Repo	Primary Dealer Credit Facility (Fed) Term Securities Lending Facility (Fed)

Exhibit 3: Average Asset Growth for High- and Low-Yield Funds

This figure plots asset growth for high and low-yield funds from August 2007 to August 2008. High (low) yield funds are defined as funds in the top (bottom) quartile of average gross yields during the period from August 2007 to August 2008. The average yield differential between top and bottom quartile funds was 42 basis points. Asset growth is computed as assets of the average fund per quartile. Assets are normalized to zero as of the first week of August 2007. Based on data used in Marcin Kacperczyk and Schnabl, "How Safe are Money Market Funds?" Working Paper, Stern School of Business, New York University, April 2012. Figure prepared by Philipp Schnabl.



Source:

Exhibit 4: Assets of Prime Institutional and Retail Money Market Funds

This graph shows significant outflows from prime institutional MMFs following the failure of Lehman Brothers September 2008 and the escalation of the Eurozone crisis in the summer of 2011. No significant outflows occurred from prime retail funds after these events. Data from Investment Company Institute.

