



Money Market Mutual Funds and Financial Stability

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I want to thank President Dennis Lockhart and the staff at the Atlanta Fed for putting together a very topical and engaging conference, and for inviting me to take part on this panel. A session on money market mutual funds is particularly relevant, given the changes enacted in 2010 and the additional proposals that the SEC has been developing.

Of course, I want to note that the views I express today are my own, not necessarily those of my colleagues on the Federal Reserve's Board of Governors or the Federal Open Market Committee (the FOMC).

The focus of my remarks today will be financial stability. Both the financial crisis in 2008 and the more recent sovereign debt problems in Europe underscored the significance of money market fund flows to short-term credit markets, and the potential for disruptions in those flows and markets to create broader economic difficulties. I will leave it to other panelists to focus on the impact of recently implemented and proposed regulations on individual funds or suppliers of short-term funds. Instead I will look at potential reforms in the context of whether they promote financial stability.

Money market funds serve as important intermediaries between investors who want low-risk, highly liquid investments, and banks and corporations that have short-term borrowing needs. Money market funds are a key buyer of the short-term debt instruments issued by banks and corporations – commercial paper, bank certificates of deposit, and repurchase agreements.

Given the importance of short-term credit markets to both investors and businesses, any disruptions to those credit markets represent a potential financial stability issue of both domestic and global significance. I would add that in discussions about ways that financial problems could, potentially, be amplified into a financial crisis, I hear money market funds often brought up.

My comments today are going to focus on *prime* money market funds, as opposed to government funds or tax-free funds. Prime funds hold a mix of short-term debt instruments including commercial paper and large certificates of deposit, as well as Treasury and agency securities.¹ Prime funds played a critical role in the amplification of financial problems in recent years.

To summarize, my key points today will be the following:

1. Some prime funds have taken on significant credit risk – at times incurring losses that necessitated the support of the parent or sponsor² of the fund, and in one case substantial government support.
2. In my view the assumption of significant credit risk is not appropriate for intermediaries that have no capital and implicitly promise a fixed net asset value (NAV).³
3. Without additional reforms, this structural problem could trigger or amplify future financial stability problems. Issues of potential financial instability were not fully resolved by the 2010 reforms, although those reforms were important steps forward.
4. Fragilities related to money market funds could be significantly mitigated by proposed SEC reforms and, potentially, by monitoring and reducing the credit risk taken by prime funds.

Prime Money Market Funds and Credit Risk

The amount of credit risk taken by some money market funds was highlighted during the financial crisis by the loss associated with the \$785 million of Lehman securities held by the Reserve Primary Fund. The loss led to the Reserve Primary Fund “breaking the buck,” and this violation of the “as good as bank deposits” implicit promise led in turn to a run on many other prime money market funds as investors became concerned that other funds would not be able to maintain a fixed net asset value.

Ultimately, the crisis prompted the U.S. Treasury to provide emergency insurance, and the Federal Reserve to provide emergency liquidity.⁴

It is very important to note that credit losses at prime money market funds have not been limited to those of the Reserve Primary Fund, or related only to the failure of Lehman Brothers. **Figure 1** provides examples of other securities that were held by money market funds when their issuers defaulted over the 2007 to 2008 time frame.

As Chairman Schapiro of the SEC has recently noted, the “SEC staff provided no-action assurances that allowed more than 100 money market funds to enter into capital support agreements with their [sponsors] in 2007-2008.”⁵ In addition to many sponsor guarantees, no less than 47 distinct funds received direct support via a cash contribution or an outright purchase of distressed securities at above-market prices – and some funds received direct support more than once. Based on our review of SEC no-action letters and publicly available financial statements, direct support during the time period from 2007 to 2010⁶ was at least \$3.2 billion.

Figure 2 provides data on sponsor support. There are a number of cases between 2007 and 2010 where identified sponsor support exceeded one percent of assets under management (nine in total – four cases between 1 and 2 percent of assets under management, two cases between 2 and 3 percent, and three cases over 3 percent).⁷ In fact, in one instance the dollar amount of support exceeded the amount of the Reserve Primary Fund’s Lehman exposure.

These data highlight that a number of money market funds were taking credit risk that was significant given their mandate and structural limitations, but unlike the Reserve Primary Fund they had a sponsor that was willing and able to provide support.⁸ In the

absence of the support of sponsors, many of these money market funds would have been unable to maintain the fixed NAV.

Going forward, one cannot necessarily assume that sponsors will choose to provide financial support; and also, to the extent that the sponsor is a regulated financial institution that requires regulatory approval to provide support, approval of such support is not guaranteed. I would suggest that the ability to assume excessive credit risk under these conditions reflects a potential flaw in the design of money market funds that still needs to be addressed.

The credit risk taken by some money market funds is still significant, even after the financial problems experienced from 2007 to 2010 and the recent SEC reforms. As recently as the fall of 2011, a sponsor provided support to a fund as a result of its holding of downgraded Eksportfinans paper.

One of the challenges in addressing the credit risk of money market funds is that Tier 1 securities that are supposed to reflect relatively low credit risk to money market funds in reality encompass a broad range of credit quality, including some securities with significant credit risk. This is shown in **Figure 3**, which examines the credit risk of prime funds – classifying their holdings by the credit default swap (CDS) spread of the issuer, sponsor, or liquidity provider of the holdings. A CDS provides insurance against default risk, and the CDS spread is a measure of how costly it would be to get insurance against possible default of a security.

As a benchmark, the current five-year CDS spread for U.S. government securities is approximately 30 basis points. As the figure shows, as of September 30 of last year 23 percent of the prime holdings had an issuer, sponsor, or liquidity provider with a CDS

quote of between 200 and 300 basis points. Note that the issuers, sponsors, or liquidity providers of 4.5 percent of the holdings had CDS quotes in excess of 400 basis points.⁹ This highlights that credit markets are assigning a significant chance that some money market fund investments that current regulation deem permissible could in fact default. And, obviously, that the credit risk embedded in many prime money market mutual funds is substantially greater than the credit risk in U.S. government-only funds.

The 2008 run on money market funds that began with problems at a single fund (the Reserve Primary Fund) highlights the importance of understanding the credit risk of individual funds, not just the average credit risk of the industry. An individual fund that does not have a sponsor that is willing or able to provide support if the fund experiences a credit loss can cause a significant run for the whole industry.

Figure 4 contrasts the credit risk exposure of two money market funds at a point in time in the fall of last year. It provides an indication of the within-industry variation in credit risk. Each of these funds held some high-risk securities – although Fund 1 more so than Fund 2 – illustrating the problem of holdings that bear more than the “minimal credit risk” required by the SEC’s rule 2a-7.¹⁰ At that point in time last year, Fund 1 had 23 percent of its assets in securities that had a credit default swap spread over 400, which for context is more than 10 times the current rate for U.S. government securities.¹¹

Such within-industry variation matters because the *average* exposure of money market funds could look just fine, but if a highly exposed fund suffered a substantial credit loss it could potentially trigger a run like the one experienced in 2008.

A significant source of the credit risk in many prime money market funds over the past year has been the large exposure to European banks. **Figure 5** shows the exposure

of the industry to financial institutions in France, Italy, and Spain. While these exposures were substantially reduced as the risks became more apparent, I have to question whether investors in money market funds would have been willing to directly hold such large exposures in foreign financial institutions, and whether such investments were consistent with the perceptions of very low credit risk that many investors expect to be associated with prime money market funds.¹²

Figure 6 shows that while the exposure to Europe declined significantly through December 2011, 36 percent of prime money market fund assets¹³ remain in Europe (granted, generally in the stronger countries). So, when considering the so-called “tail” risk from *unexpected* problems in Europe, money market funds remain an important potential transmission channel to the United States.

A good example of this potential risk is the exposure that many money market funds had to Dexia, a bank that required the support of the French and Belgian governments in the fall of 2011. **Figure 7** shows that in the spring of 2011, over 60 funds had exposure to Dexia.¹⁴ As the five-year credit default swap spread for Dexia rose, most money market funds substantially reduced their holdings. However, given the very high CDS spreads on Dexia, the extent to which money funds were willing to hold it at all is striking.

Despite the experience of the Reserve Primary Fund during 2008, a number of money market funds held securities that posed significant credit risk during the 2011 period of European problems. While there were significant outflows,¹⁵ no losses or runs occurred – but in my view this should provide us little solace. We should care not only about the realized losses, but also about the *potential* losses associated with risk

exposures. From a public policy perspective, we should in short care that significant risks were taken even though the potential bad outcome did not occur.

The willingness of multiple money market funds to take excessive credit risk even after the 2010 reforms suggests that money market funds, absent some changes, still pose some risks to financial stability. Simply put, my view is that taking large credit risks is incompatible with being an intermediary that has no capital and implicitly promises a fixed net asset value.

Potential Additional Actions

While the 2010 reforms improved the liquidity and credit risk of money market funds, I believe the data I have presented today suggest that more substantial initiatives are needed to reduce the risks to financial stability.

One possible way to mitigate the risks is to no longer transact at a fixed net asset value. This has several possible benefits, but also potential drawbacks.

As with other mutual funds, a floating NAV would highlight that the underlying asset values do fluctuate, and that the investor is taking some risk. By observing movements in the NAV, investors would have regular reminders that investments in money market funds are not riskless, and that absent sponsor or government support the fund cannot guarantee that it will always be able to return an investor's money dollar for dollar.

Furthermore, a money market fund that takes credit risk simply cannot guarantee that it will on its own pay a fixed net asset value. Should a large credit loss occur, the

fixed net asset value will not be able to be maintained unless the sponsor is willing and able to provide financial support.

Still, there are two potential negatives to a floating rate NAV. First, it transforms the product from a near-substitute for bank deposits into an asset with a fluctuating price. Those fluctuations in price, and the taxable gains or losses that result, would make money market funds less attractive as a transaction account for many investors – in part due to the taxable gains or losses. Second, it only partially prevents runs, because as soon as investors become concerned about credit losses, there is a strong incentive to get out of the fund early. The first investor to leave the fund (to redeem) avoids the large drops in valuation and loss of liquidity that typically accompany a run.

While the incentive to run is not eliminated by a floating NAV, it is certainly less than for a fund with a fixed NAV that risks “breaking the buck.”¹⁶ Interestingly, floating NAV funds are used in Europe.

In sum, a move to a floating NAV would more accurately reflect the fundamental nature of the product actually offered, rather than making implicit promises to investors that cannot always be kept during stressful times.

Another alternative would be to require money market funds to hold capital, and to impose a cost on redemptions. An appropriate redemption policy could substantially reduce the incentives to run. With appropriately calibrated capital and redemption policies, the incentive to run (and thus the inability to fully pay investors) would be greatly reduced.

To digress for a moment, it is important to distinguish between solvency issues and liquidity problems. Slowing down redemptions would assist in situations where

there is underlying value but a drying up of liquidity may lead to losses from “fire sale” prices.

These remedies also raise potential concerns and have costs. In general any reforms that, in the language of economists, would “internalize the costs” associated with systemic risk would to some degree make money market funds less attractive for investors.

Raising capital in a low interest rate environment would be challenging and, depending on how it is raised, would impact returns to sponsors or investors. A change in redemption practices would pose a potential risk to investors that would make the money market fund less attractive relative to other products. But despite these concerns, appropriately calibrated capital and redemption policies would reduce the risk that investors would not be able to get full value on their redemptions or that runs would occur.

Beyond the two alternatives I have discussed, there may be additional ways to address these issues. There may be opportunities for SEC policymaking and monitoring to inhibit funds from taking on excessive credit risk. As I have shown today, the extent of credit risk taken by some money market funds is shown by the number of times sponsors have needed to provide support and by the makeup of underlying assets in certain funds. The SEC limitations placed on credit risk are currently too broad to avoid significant credit risk exposure and there may be ways to use market information¹⁷ to determine if assets in the funds are inconsistent with the intent to limit significant credit risk exposures at money market funds.

Concluding Observations

In summary and conclusion, I believe the approaches I have mentioned today could significantly mitigate financial stability concerns around money market funds. Of course, none of the proposals eliminate the risk entirely, and none are costless. Neither are they mutually exclusive – elements could be adopted in some combination.

Everyone knows the SEC is working very hard on this, and could have a proposal for reforms out in the coming months. I strongly commend their efforts to arrive at reforms that reduce the risks surrounding money market funds.

The bottom line, in my view, is that the status quo is not acceptable. As I have shown today, a number of money market funds took significant credit risk that ultimately led to them needing sponsor support in the period from 2007 to 2010. Substantial government support was required after the Reserve Primary Fund experienced losses. Moreover, a significant number of money market funds continued to take substantial credit risk during the recent European financial problems. So, I must conclude that reforms enacted to date do not seem to sufficiently limit money market funds' ability to assume excessive credit risks.

A money market fund with a fixed net asset value set by an intermediary with no capital that takes on credit risk will, eventually, result in the failure to meet obligations in the absence of outside support by either a sponsor or government. Funds need to be structured so that neither sponsor support nor government support is likely or necessary, even during times of stress.

I realize the industry is opposed to measures that would decrease the attractiveness of funds but in the end a stronger industry could result, beyond the

financial stability improvements that are my main focus. But all in all I believe the risks to the stability of the financial system that underpins the economy are too great not to take the actions that will make the industry, and our financial system, more stable.

Thank you again for inviting me to speak with you today.

NOTES:

¹ Commercial paper and certificates of deposit made up 24 percent and 25 percent of prime money market fund portfolios, respectively, at the end of February. Repurchase agreements were 19 percent. And finally, Treasury and Agency securities were 9 percent and 10 percent, respectively.

² Sponsors are the asset management firms and their parents and affiliates.

³ Of course, a fund prospectus typically makes clear that the NAV can drop below the fixed value.

⁴ For more information on this aspect of the financial crisis, see a forthcoming article in *The Journal of Finance* entitled “How Effective Were the Federal Reserve Emergency Liquidity Facilities? Evidence from the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility” – by Burcu Duygan-Bump, Patrick M. Parkinson, Eric S. Rosengren, Gustavo A. Suarez, and Paul S. Willen; and the related working paper of the same title and authorship, available at <http://www.bostonfed.org/bankinfo/qau/wp/2010/qau1003.pdf>.

⁵ The SEC quote uses the term “parent companies” rather than sponsors. Remarks at the Society of American Business Editors and Writers (SABEW) Annual Convention; Indianapolis, Indiana; March 15, 2012.

⁶ Although most of the covered securities defaulted in 2007 and 2008, many times these securities remained in money market fund portfolios with a guarantee from the parent for an extended period of time before a direct support event.

⁷ We used the highest level of assets under management (AUM) over the reporting period covered by the applicable financial statement to compute the ratio of support to AUM for each fund. Using the highest AUM over the period provides a *conservatively* biased estimate of support.

⁸ Interestingly, evidence from the financial crisis would suggest that investors are aware of this option on the part of sponsors. My colleague at the Federal Reserve’s Board of Governors, Patrick McCabe, finds in his paper *The Cross Section of Money Market Fund Risks and Financial Crises* that “outflows were larger for MMFs that had paid higher gross yields in the previous year

and thus were likely carrying greater portfolio risks, for funds with larger pre-crisis flow volatility that signified greater investor risk, and for funds that had sponsors with wider credit default swap (CDS) spreads and hence greater sponsor risk."

[See <http://www.federalreserve.gov/pubs/feds/2010/201051/201051pap.pdf>]

⁹ As shown in Figure 3, holdings with an issuer, sponsor, or liquidity provider with a CDS spread of 200 basis points or more accounted for 37 percent of the value of prime holdings as of September 30, 2011. The remaining 63 percent of the value of prime holdings included holdings with an issuer, sponsor, or liquidity provider with a CDS spread of less than 200 basis points and those for which no CDS quotes were available.

¹⁰ Money market funds are regulated primarily under the Investment Company Act of 1940 and the rules adopted under that Act, particularly Rule 2a-7 under the Act. See <http://www.sec.gov/answers/mfmmkt.htm>

¹¹ Likewise in Figure 4, holdings with an issuer, sponsor, or liquidity provider with a CDS spread of 200 basis points or more accounted for 48 percent and 45 percent of the value of Fund 1 and Fund 2 holdings, respectively. The remaining 52 percent and 55 percent of the value of Fund 1 and Fund 2 holdings included holdings with an issuer, sponsor, or liquidity provider with a CDS spread of less than 200 basis points and those for which no CDS quotes were available.

¹² Also, you can see that the January 2012 figure shows a reversal of the downward trend.

¹³ Up from 34 percent in December.

¹⁴ The Dexia holdings and CDS spreads are those of Dexia Credit Local, the Dexia Group's French subsidiary. At the close of 2010, Dexia Credit Local held assets of 361 billion euros (\$484 billion) representing 64 percent of the assets of the Dexia Group.

¹⁵ For example June 2011 had the largest outflows from prime funds of any month since the 2008 crisis.

¹⁶ With a floating NAV, investors are not able to redeem shares at \$1 when they are clearly worth less, so the floating NAV would mitigate somewhat the ability of redeeming investors to leave losses behind.

¹⁷ Such as, potentially, market pricing information on credit default swaps for certain securities.

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Figure 1

Examples of Defaulted Issuers Held by Money Market Mutual Funds: 2007-2008

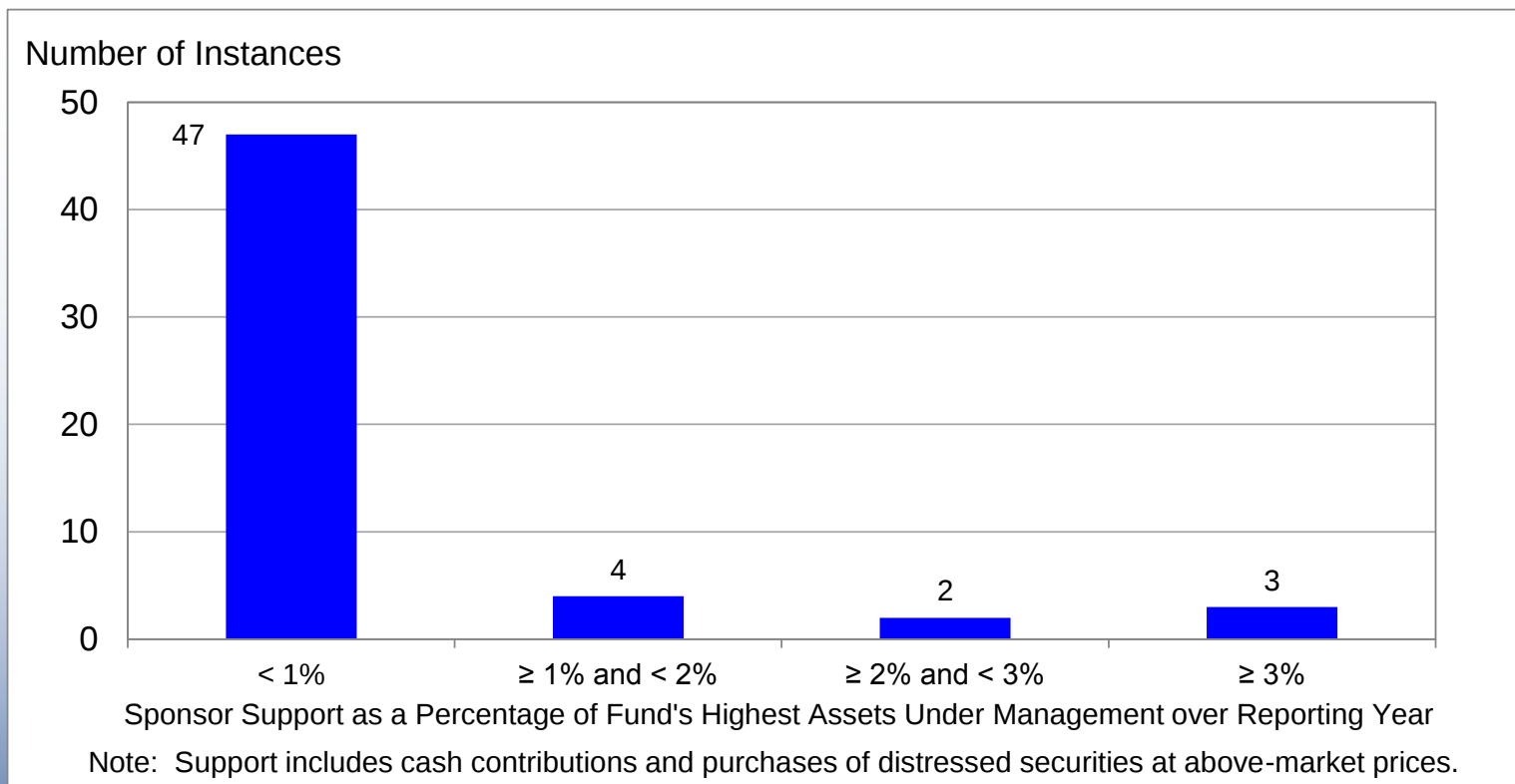
- Axon Financial Funding LLC
- Cheyne Finance LLC/Gryphon Funding LLC
- Lehman Brothers Holdings Inc
- Ottimo Funding Ltd./Issuer Entity LLC
- Thornburg Mortgage Capital Resources LLC/
Wickersham Entity LLC
- Victoria Finance LLC/Stanfield Victoria Funding LLC
- Whistlejacket Capital LLC

Source: SEC, Company Financials, Federal Reserve Bank of Boston Staff



Figure 2

U.S. Money Market Mutual Fund Sponsor Support Sample: 2007 - 2010

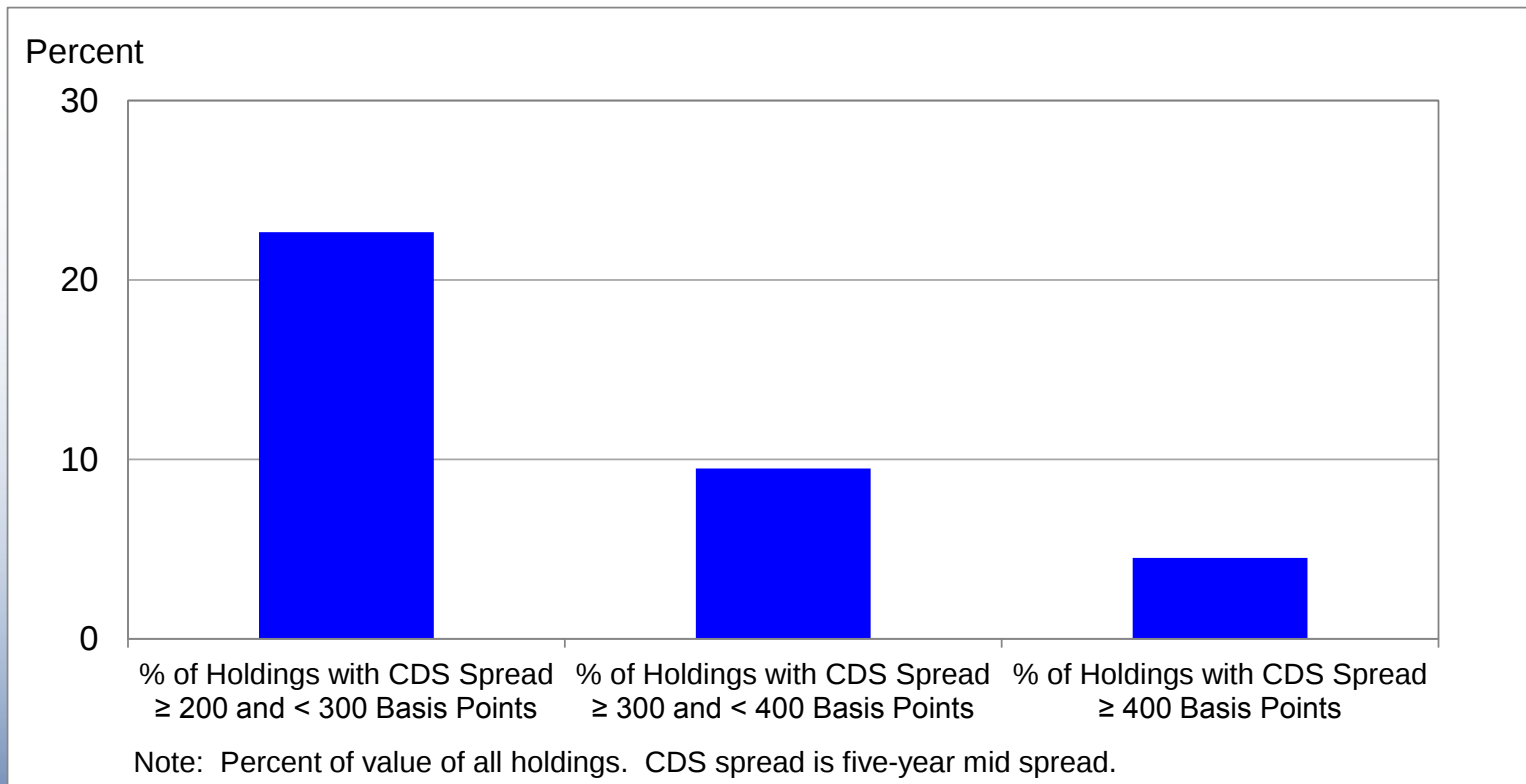


Source: SEC, iMoneyNet, Money Market Mutual Fund Financial Statements, Federal Reserve Bank of Boston Staff

Figure 3

U.S. Prime Money Market Mutual Fund Holdings by CDS Spread of Issuer/Sponsor of Holdings

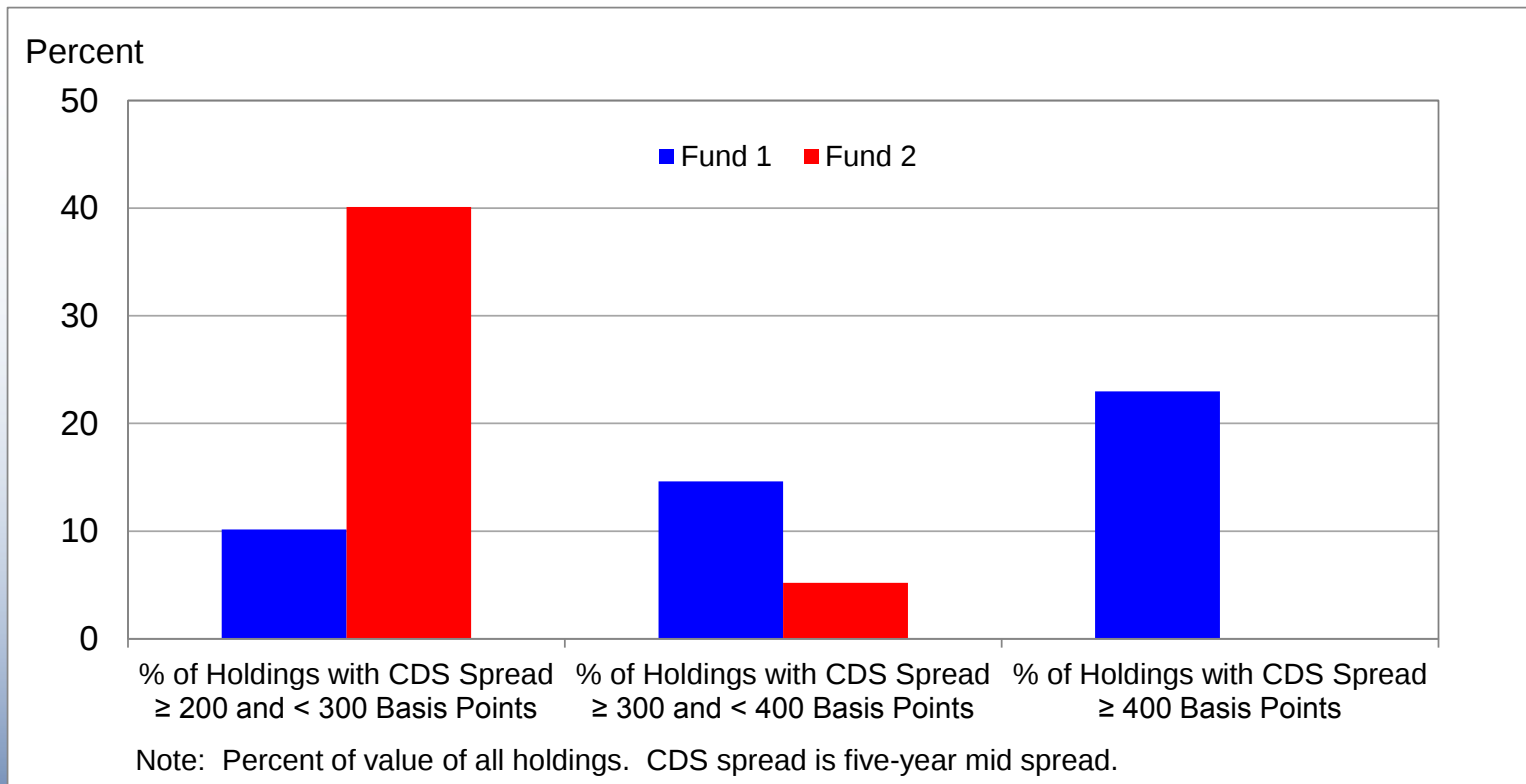
As of September 30, 2011



Source: Crane Data, Bloomberg, Mutual Fund Company Websites

Figure 4

Holdings of Two Prime Money Market Mutual Funds by CDS Spread of Issuer/Sponsor of Holdings



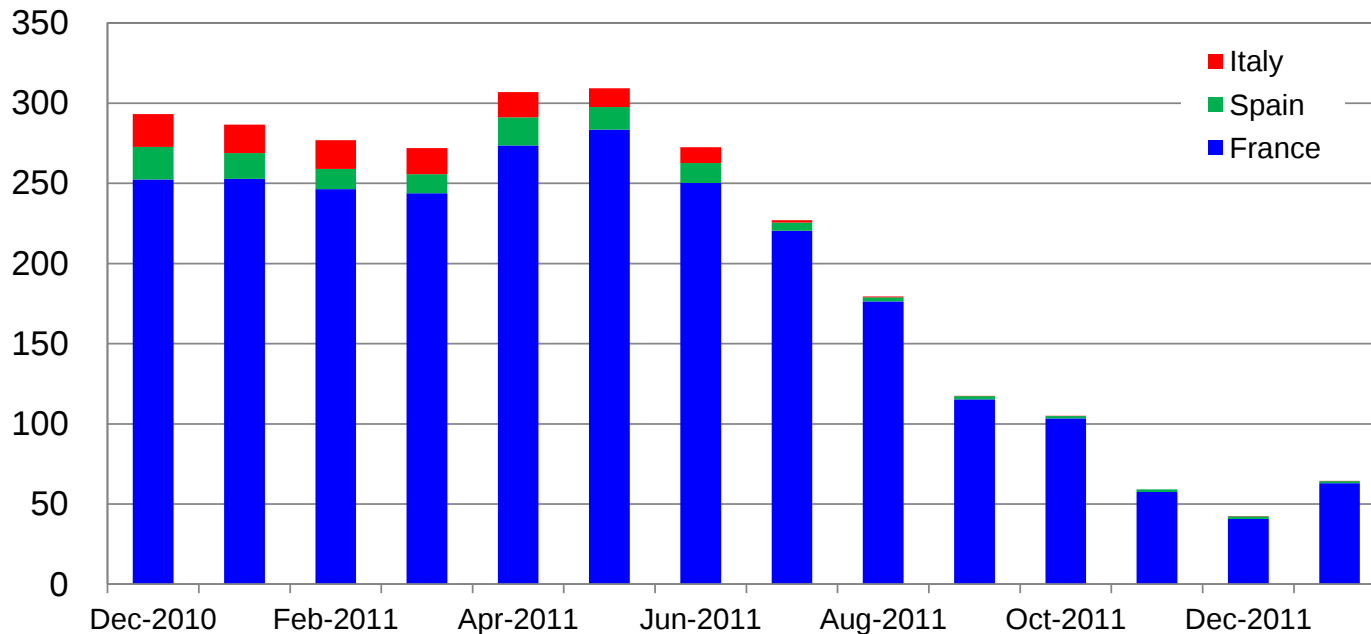
Source: SEC Form N-MFP, Bloomberg, Federal Reserve Board Staff, Mutual Fund Company Websites

Figure 5

Selected Country Exposure of U.S. Prime Money Market Mutual Funds

December 2010 - January 2012

Billions of Dollars

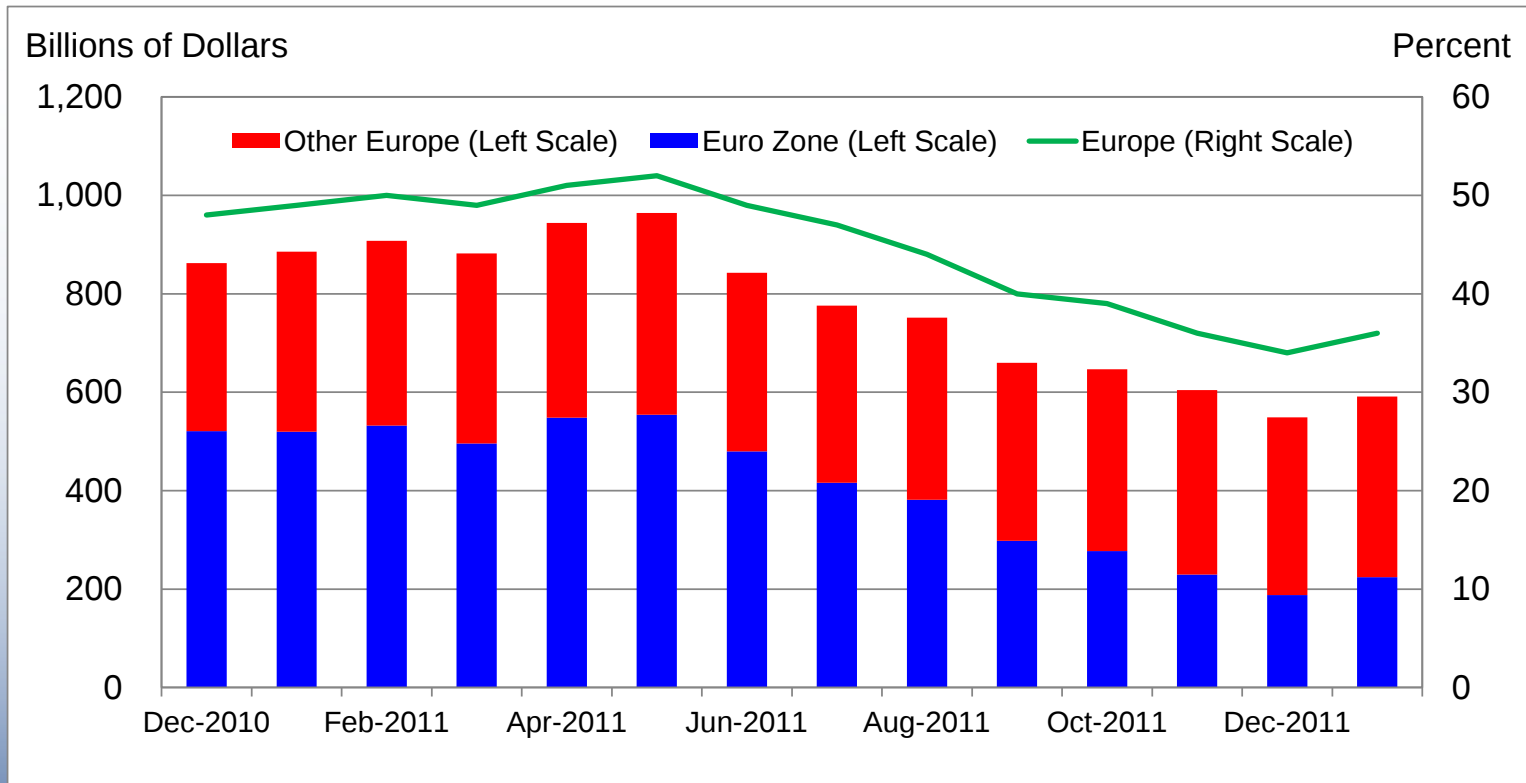


Source: SEC Form N-MFP, Federal Reserve Board Staff

Figure 6

European Exposure of U.S. Prime Money Market Mutual Funds

December 2010 - January 2012

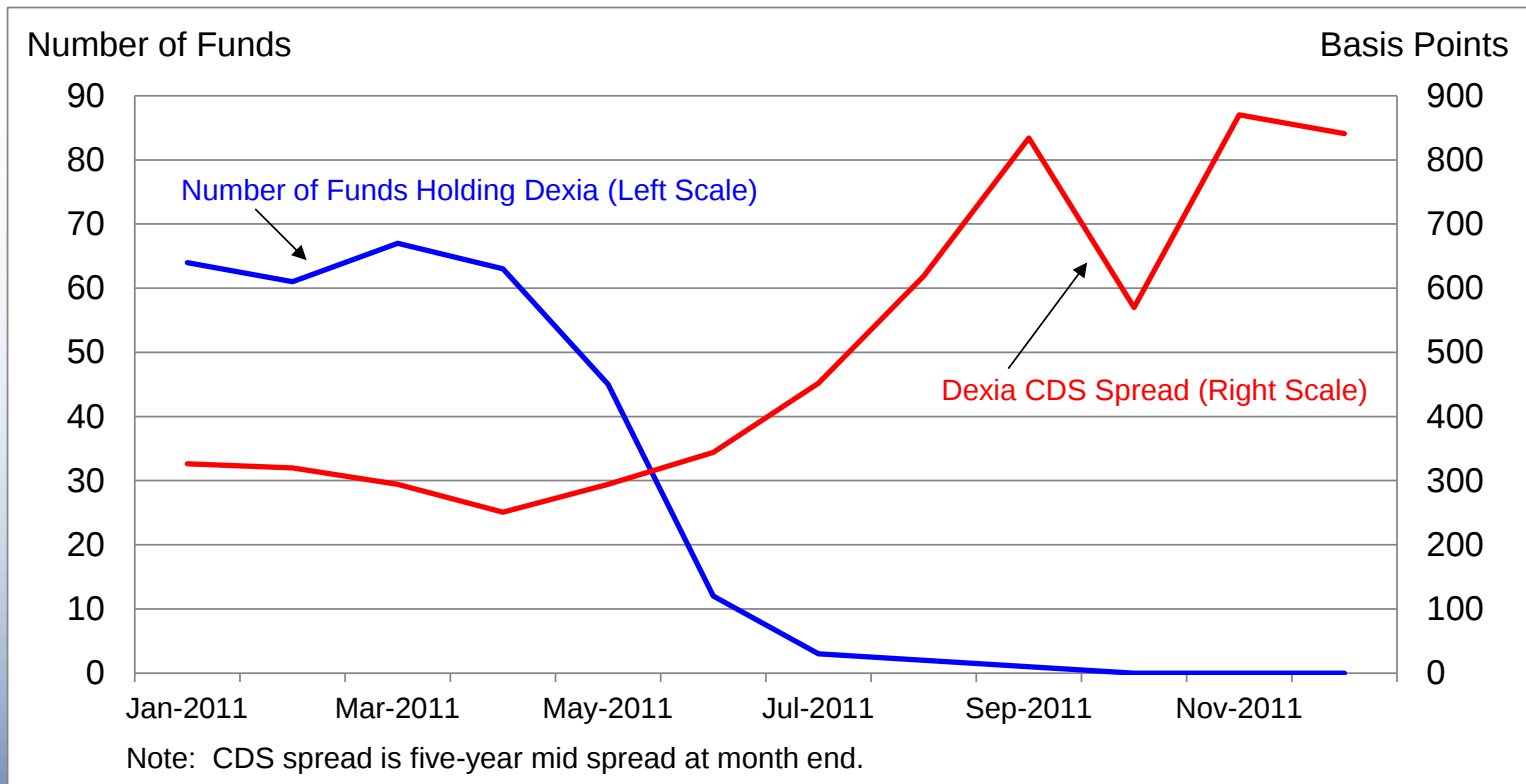


Source: SEC Form N-MFP, Federal Reserve Board Staff

Figure 7

U.S. Prime Money Market Mutual Funds Holding Dexia and Dexia CDS Spread

January 2011 - December 2011



Source: SEC Form N-MFP, Bloomberg, Federal Reserve Board Staff