Testimony of

René M. Stulz

Reese Chair of Banking and Monetary Economics and Director of the Dice Center for Research in Financial Economics, Ohio State University

Before the

Subcommittee on Capital Markets and Government Sponsored Enterprises

United States House of Representatives

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Chairman Garrett, Ranking Member Waters, and members of the committee, I want to thank you for giving me the opportunity to testify in front of you. The testimony is my own. However, I am a member of the Squam Lake Group, a group of economists who authored the Squam Lake Report: Fixing the Financial System. The Squam Lake Group has put forth proposals for reforming money market funds in a memorandum titled "Reforming money market funds" which is included as an appendix to my testimony and my testimony will present these proposals.[2]

Systemic risk is used everywhere all the time within the regulatory community. At the same time, it is rarely defined and almost never quantified, which makes possible a lot of mischief. My definition of systemic risk is that it is the risk that the financial system becomes incapable of performing one or more of its key functions in a way that prevents normal economic activity. To

[1] My resume and biography available at http://www.cob.ohio-state.edu/fin/faculty/stulz/index.htm provide disclosures on my compensated activities. I am currently retained as a consultant and as an expert witness by firms in the financial services industry. In addition, I hold shares of mutual funds, which in the context of this hearing could be viewed as a potential conflict of interest.

[2] See "Reforming money market funds," by Martin N. Baily et al., available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1740663 .

justify regulation in the name of preventing systemic risk, it is important to assess both the costs and the benefits of that regulation. One should be leery of designating financial firms as systemically important without having proper tools to quantify the systemic impact of such firms. Any systemic designation should be based on objective and quantifiable criteria. I would urge restraint in designating a financial firm as systematically important as long as its systemic importance is not quantified and as long as it is not shown that the benefit in terms of systemic risk of designating this firm as systemically important offsets the additional regulatory burden that such a designation would impose on the firm.

On economic grounds, there is no reason to believe that either specific mutual funds or mutual fund complexes should be designated as systemically important. The asset management industry plays a critical role in our economy by managing the funds of investors. The failure of a player in that industry in performing its role does not create a systemic risk. If one player runs in trouble, another player can take its place. In general, difficulties with one player would not mean that the investors in the funds managed by that player would be at risk for regulated funds because the monies of the investors are segregated. Should a firm that manages mutual funds fail, the funds have boards that can replace the manager. There is no reason for that transition to be problematic.

There is no evidence that the asset management industry created systemic risk during the recent crisis except in one segment, the money market funds segment. However, rather than designating money market funds as systemically important, it would make more sense to eliminate the features of money market funds that create systemic risk. Similarly, should one conclude that some aspects of the mutual fund industry create systemic risk in the future, the best

approach to addressing that issue would be to attack the source of risk at its source and eliminate it, rather than increase regulations on fund management companies.

It is important to focus on the exact channel through which money market funds created systemic risk during the crisis. The cost of the systemic risk of money market funds is not the potential losses of investors in these funds, or losses not covered by the fund management company. By their very nature, money market funds are prone to runs. When investors run from funds, this forces funds to sell their assets and disrupts the provision of short-term funding in the financial system. In 2008, the run was started by losses on Lehman investments at one fund, the Reserve Primary Fund, which was forced to redeem shares at less than $1 – in other words, it broke the buck. In the past, when funds had made losses that could have forced them to break the buck, the management companies made up these losses even though they were not contractually required to do so. In the case of the Reserve Fund, the management company did not have the resources to do so. In the two weeks following the bankruptcy of Lehman, more than $400 billion left prime money market funds. Further, money market funds changed their investment policies to make themselves better able to cope with further redemptions. Runs and anticipated redemptions led to chaos in the commercial paper market as well as in the repo market. Companies and financial institutions could not get the funding that they anticipated. Intervention by the Treasury and by the Fed was necessary to stop the acceleration of redemptions and inject some stability in the commercial paper market. The fundamental issue is that we cannot have a financial system that is at the mercy of runs in money market funds. The point of reform of money market funds is not, therefore, to make investors in these funds safer. It has to be to make the financial system safer.

Some might argue that reforms that have already taken place have eliminated the problem. This is not correct. Money market funds are still vulnerable to runs. Further, they are particularly vulnerable to developments in Europe. A recent study finds that the top 15 largest prime AAA funds have more than 50% of their assets invested in foreign banks, the lion's share of these investments in European banks.[3]

The key reason why money market funds are prone to runs is that they allow investors to redeem at $1 when the market value of the fund's assets is worth less than $1 a share. If the market value of a fund's assets is worth less than $1 a share by a sufficient amount, it becomes rational for investors to run since they receive $1 by redeeming immediately instead of possibly receiving less if they do not. A run decreases the value of the assets once the most highly liquid assets are depleted because it forces money market funds to sell assets at a discount to raise cash quickly. This discounting can give additional momentum to the run since investors receive more before the fund has to discount its assets to meet redemptions and lose because of the fire sales even if they stay in the fund.

To make runs much less likely, the Squam Lake Group has proposed that money market funds either should have a floating NAV or should have a buffer that could be used to prevent the NAV from falling below $1 a share. By buffer, we mean resources committed by the management company or by third parties that absorb losses so that the fund can keep redeeming shares at $1 even if it has made losses. The use of a buffer makes it possible to keep the fixed NAV mechanism but largely eliminates the incentives for investors to run since the buffer insures that the mark-to-market value of the shares does not fall below $1 as long as the buffer is

[3] "Dissecting prime money fund holdings," by Lance Pan, Capital Advisors Group, February 1, 2011. See also Fitch Ratings, "U.S. Money Fund Exposure to European Banks Remains Significant," June 21, 2011.

large enough to cover losses. A floating NAV eliminates the free option that investors have to receive $1 when the true value of a share is less than $1. At the same time, we understand that a floating NAV does create operational difficulties for institutional investors.[4] It is not at all clear, however, that these difficulties are insurmountable.

We propose several mechanisms to create a buffer. However, irrespective of how the buffer is implemented, we recommend that any buffer mechanism should have three important characteristics. First, the mechanism should be such that in the presence of losses the buffer could be replenished quickly. Second, a fixed-NAV fund should immediately convert to a floating-NAV fund if the buffer is depleted so that its value is below some minimum threshold. Third, once losses have been made, the buffer should be replenished within a short period of time and if it is not the fund should convert to a floating-NAV fund.

We propose four possible mechanisms for the buffer:

1) Federal Reserve deposits contractually committed to buffering the fund.
2) Highly liquid government securities held in a segregated custody account that is contractually committed to buffering the fund.
3) Insurance by a party that meets the fund regulator's standard for creditworthiness and liquidity.
4) "Equity tranche" claims on a pool of "2a-7 compliant assets" whose senior claimant is the money market fund. The assets would be used to pay redemptions at $1 NAV for the investors in the money market fund as long as this is feasible.

[4] These difficulties are well described in the "Report of the Money Market Working Group" of the Investment Company Institute.

Let me now discuss two additional issues related to the buffer. First, I want to elaborate on the concept of "equity tranche" and, second, I want to comment on the size of the buffer.

It may not be a popular analogy at this time, but it is useful to think of a securitization of the assets of the fund. With a securitization, investors in the most senior tranche have priority and the lower tranches serve as a buffer that absorbs losses. When we think of an "equity tranche", we think of it in the same way as junior tranches in a securitization. However, because of inflows and outflows in money market funds, the size of the equity tranche would have to increase as inflows occur. Alternatively, one could think of the buffer as capital that supports the risk of the money market fund, so that if the fund makes losses, they can be absorbed by that capital.

There are a number of different ways to implement the equity tranche concept, but I will give just one example. The fund could issue notes at regular intervals in the amount necessary to create the required buffer. For example, let's say that the notes 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 a fixed interest payment, the principal would be reduced if losses have to be paid. Alternatively, with a floating payment, the payment would be negative in the case of losses and come as a reduction of principal. The notes could be issued through a bidding process or could be privately placed. If the assets are invested more safely, the note-holders would require lower compensation for bearing the risk of losses. The compensation required by the note holders would provide information about the risk of the assets. It would be in the interest of money market funds to offer more transparency to the investors in the notes. The money market fund investors would receive the return on the assets minus the payments made to the note-holders, the costs of issuing the notes, and the fees paid to the fund manager.

To have a sense of the numbers involved, suppose that a fund has currently a total net asset value of $1 billion and that the buffer is required to be 3%. In this case, the principal amount of the notes issue would have to be at least $30 million so that the note holders could lose an amount equal to the buffer. Say that the probability of a loss equal to the buffer over six months is 0.05%. In this case, the note holders would be compensated for the actuarial value of the expected loss by an additional return of 5 basis points if the face amount of the notes is $30 million. The impact of 5 basis points paid to the note holders on the return to the money market fund investors would be minuscule since it would be a reduction of $15,000 of the return of the fund. One would expect the note-holders to require a risk premium. However, even if the risk premium is a multiple of the actuarial cost, it would still have only a very small impact on the return of the money market fund investors.

Let me now briefly comment on the size of the buffer. 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 $0.03 would have been necessary to prevent the fund from breaking the buck. From August 2007 to December 2010, using data from Moody's, 21 firms provided support to funds. The average support was 1.62% of net assets. Finally, as of June 2010, using again data from Moody's, the top five exposures of U.S. prime money market funds were all to European banks and the lowest exposure was 2.5%. The numbers suggest that a buffer in the range of 1.5% to 3% is not unreasonable.

Some market participants have argued that money market funds do not pose a systemic risk since other funds that do not have a fixed NAV also experienced large redemptions during the crisis. Investors will often leave poorly performing funds. However, the problem with the fixed

NAV concept is that investors are paid to leave by the investors who do not leave. This is because investors in fixed NAV money market funds have a free put option.

My last point is that it is important when considering changes in the regulations that affect money market funds to take into account the impact of reform on the financial system as whole and to be wary of unintended consequences of regulation. After all, money market funds largely came into existence because of regulations that limited the interest payments banks could make on deposit accounts. Further, the risk of runs on money market funds exists because regulation allows them to not use fair market value for redemptions.

In summary, the main concern about systemic risk with mutual funds has to do with the potential for runs at money market funds. I have proposed several mechanisms that could dramatically reduce this potential for runs. Implementing a mechanism that diminishes the probability of runs at money market funds would help in making the financial system safer.

Appendix

Reforming Money Market Funds

A Proposal by the Squam Lake Group*

January 14, 2011

Abstract

The current stable-NAV model for prime money market funds exposes fund investors and systemically important borrowers to runs like those that occurred after the failure of Lehman in September 2008. This working paper, by the Squam Lake Group, argues that, to reduce this risk, funds should have either floating NAVs or buffers provided by their sponsors that can absorb losses up to a level to be set by regulators. We suggest alternative designs for such a buffer, as well as considerations that should be taken into account when determining its required size.

* The members of the Squam Lake Group are Martin N. Baily (Brookings Institution), John Y. Campbell (Harvard University), John H. Cochrane (University of Chicago), Douglas W. Diamond (University of Chicago), Darrell Duffie (Stanford University), Kenneth R. French (Dartmouth College), Anil K Kashyap (University of Chicago), Frederic S. Mishkin (Columbia University), David S. Scharfstein (Harvard University), Robert J. Shiller (Yale University), Matthew J. Slaughter (Dartmouth College), Hyun Song Shin (Princeton University), Jeremy C. Stein (Harvard University), and René M. Stulz (Ohio State University). Individual members of the group have potential conflicts of interest, including affiliations with rating agencies, which rate money market funds, with investment management firms that manage or invest in money market funds, with other forms of mutual funds, or with banks. Specific affiliations are disclosed on the web sites of individual members. Because he is involved with a firm that sponsors a money market fund, Ken French did not participate in deliberations concerning this proposal.

We are grateful for assistance from Joseph Abate, Marnoch Aston, Barry Barbash, Richard Cantor, Jason Granet, Catherine Newell, Barbara Novick, Alex Roever, Henry Shilling, Peter Tufano, and Alex Yavorsky.

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

Our principal concern is the industry norm of a "stable" net asset value (NAV), by which purchases and redemptions of money market funds occur at a price equal to the per-share amortized cost of the fund's assets, rounded to the nearest penny. Under normal conditions, this rounding implies a purchase or redemption price of one dollar per share. If, however, investors in a money market fund fear that the actual market value of fund assets may be less than one dollar per share, or that this could easily happen in the near future, then they have an incentive to redeem their shares, and to do so before the rounded NAV per share drops below one dollar, an event known as ``breaking the buck.'' This incentive to run is exacerbated by the knowledge that the first investors to run have less risk than those that follow because redemptions at one dollar per share dilute the claims of unredeemed shares whenever the actual NAV is less than one dollar. A run can be further accelerated by a lack of transparency of the actual NAV and by fears that large sudden redemptions from a fund can only be met through a fire sale of its assets. The problem is worsened because the asset holdings of money market funds with similar objectives are likely to be similar, so that fire sales from one fund are likely to be accompanied by fire sales of other funds. For example, in the two-week period following the failure of Lehman, net outflows from a subset of prime money market funds tracked by Moody's exceeded $400 billion, almost entirely through redemptions by institutional investors, who are prone to run for cover much more quickly than are retail investors.[5] During the same period, money market funds dedicated to holding only government securities experienced net *inflows* of over $225 billion, again largely because of the quick decisions of institutional investors, who account for over 65% of investments in money market funds.

The potential for a run on money market funds is a systemic risk. A large fire sale of assets held by money market funds could destabilize the markets for these assets. Investments in U.S. prime stable-NAV money market funds and similar European "CNAV" money market funds now total over $2 trillion. Industry concentration has increased significantly, to the point that the top 5 U.S. fund managers now account for about 50% of the U.S. total. In the event of a run on money market funds, systemically important borrowers such as large securities dealers could suddenly lose access to a significant source of

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

financing, as happened following the fall of Lehman in 2008. The commercial paper market essentially stopped functioning and Lehman experienced a run by money market funds, who typically buy the commercial paper of large banks and lend overnight to dealers through tri-party repurchase agreements.[6] A run on money market funds could therefore set off fire sales of securities by dealers and, potentially, the failures of systemically important financial institutions. The withdrawal of funding could also lead large financial firms to reduce their lending.

Part of the government's response to the massive redemptions from money market funds that occurred in the wake of Lehman's failure was to guarantee that money market fund investors could redeem at one dollar per share.[7] If money market fund managers believe that such guarantees will be forthcoming in response to any systemic event, they will have incentives to take greater risks than is prudent from a systemic perspective. Moreover, if investors also believe that their money market fund investments are protected in a systemic event, they will overinvest in money market funds, thereby increasing the magnitude of the systemic risk. And while money market fund managers and investors may believe that they will be protected, it is always possible that they will not be and that a run on money market funds succeeds in destabilizing the financial system, while the government stands by either because it cannot or will not intervene. Indeed, Treasury's program to protect money market funds was outlawed by the Emergency Economic Stabilization Act of 2008, the legislation that created the Troubled Asset Relief Program. Whether there are other programs that could be used to stabilize money market funds is an open question.

In the past, without the prospect of government guarantees, whenever money market funds threatened to break the buck, it had been common for their managers to bail them out in order to preserve the franchise values of their fund management businesses. Between August 2007 and December 31, 2009, at least 36 U.S. and 26 European money market funds received support from their sponsor or parent[8] because of losses incurred on their holdings of distressed or defaulted assets, as well as the costs of meeting the redemption demands of investors through sales of assets. Going forward, if sponsors believe that their funds will receive government support, their incentive to bail out their own funds may be substantially reduced, particularly given the squeeze on profitability associated with exceptionally low money-market interest rates.

We can envision two broad ways of addressing the systemic risks created by stable-NAV funds. First, and most directly, regulation could simply require that all money market funds have a variable NAV. In effect, this would force any fund that holds risky assets to be fully transparent about the evolution of

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

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

[8] See "Sponsor Report to Key Money Market Funds," by Henry Shilling, Moody's Investor Service, August 9, 2010. The forms of support included capital contributions, purchases of distressed securities at par, letters of credit, capital support agreements, and letters of indemnity or performance guarantees.

these risks—it would no longer be possible to present the performance of risky investments as though they are riskless. While we believe that this "floating NAV" alternative has substantial advantages, the fund management industry has spoken out strongly against it. The industry argues that investors derive significant operating, accounting, and tax management benefits from the ability to transact at a fixed price.[9] In our view, the magnitude of these benefits—particularly from a social perspective—remains an important open question. We have not seen any analysis of the value of these benefits to money market fund investors relative to the cost to the public of the associated systemic risk. Another source of uncertainty comes from the potential impacts on other types of financial institutions. If investors strongly prefer stable-NAV type products, then requiring that all funds have a floating NAV might induce investors to shift their investments into bank deposits as a substitute for stable-NAV money market funds. Because the bank deposits of large institutional investors are uninsured, this could simply move the threat of runs from money market funds to the banking sector. Given that banks are less transparent than money market funds, the likelihood of a damaging run could theoretically increase as a result of this shift. Again, this possibility is difficult to assess empirically.

Thus, as an alternative to floating NAV, a second broad approach, which we focus on below, preserves the stable NAV structure but enhances its safety by requiring sponsors to establish contractually secure buffers that could absorb at least moderate investment losses to their money market fund investors. This is akin to a capital requirement for stable-NAV funds. The President's Working Group Report (2010) describes various alternatives, including some forms of liquidity facility or insurance that are consistent in spirit with this approach, but it does not make a specific recommendation.[10]

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

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

Buffering Stable-NAV Money Market Funds

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

Proposed buffer requirement for stable-NAV funds:

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

Some potential alternative forms of buffers include:

1. Federal Reserve deposits, contractually committed to buffering the fund to the point of liquidation or conversion to a floating-NAV fund, at which point any residual deposits can be reclaimed by the original depositor, which could be the fund management firm or investors in a separate investment vehicle.[11]
2. Liquid assets such as Treasury bills held in a segregated custody account that is contractually committed to buffering the fund, as in the previous example.
3. Insurance by a party that meets the fund regulator's standard for creditworthiness and liquidity.
4. "Equity tranche" claims on a pool of "2a-7 compliant" assets whose senior claimant is the money market fund. That is, equity-tranche investors may receive distributions only to the extent that the total market value of the pool assets at the end of each business day meets the buffer requirement. Money market fund investors, however, can redeem at one dollar per share

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

until the fund is forced for lack of resources to convert to a floating NAV fund. At the end of the transition period, equity tranche investors may claim any available residual.

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

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

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

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

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

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

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

The value of the put option depends of course on the volatility and illiquidity of the fund assets. The cost of providing a buffer thus aligns the asset investment incentives of the fund manager with the public's interest in lowering systemic risk. The loss of financial flexibility associated with segregating liquid assets has some value. If one assumes for this cost a convenience yield of, say, 1%, then for each increase in the buffer size by 1% of NAV, there is an additional cost of roughly 1 basis point of NAV per year.[12] It therefore seems safe to guess that the bulk of the cost of meeting the proposed buffer requirement is represented by the risk of loss borne by the buffer provider, and perhaps by administrative costs.

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

In the United States, some if not all of the alternative buffer approaches that we have discussed would require exemptive relief or significant rule changes from the SEC. We presume that rule changes would also be needed in Europe. It is possible that changes in accounting standards for money market funds may also be required. Because of significant variation in the types of fund managers and investors, we are not proposing a specific contractual approach. Regulators may choose to design a rule that mandates the required effect of the buffer without tightly restricting the specific mechanism by which the required effect is to be achieved. If the value of stable-NAV funds is low relative to the costs of our proposed method of avoiding systemic risk, then funds will presumably choose to adopt a floating NAV structure.

When setting the size "X" of a required buffer, regulators may wish to consider the amounts by which money market funds have broken the buck in the past, or the amounts per share that fund sponsors have contributed in order to prevent them from breaking the buck. In the two-day period following Lehman's bankruptcy, the Reserve Primary Fund reported a minimum share price of 97 cents.[13] Had redemptions not been halted by the Reserve Fund's sponsors, a fire sale of additional assets could have caused significant additional losses. A buffer of at least $0.03 per share would therefore have been necessary to prevent the Reserve Fund from breaking the buck.

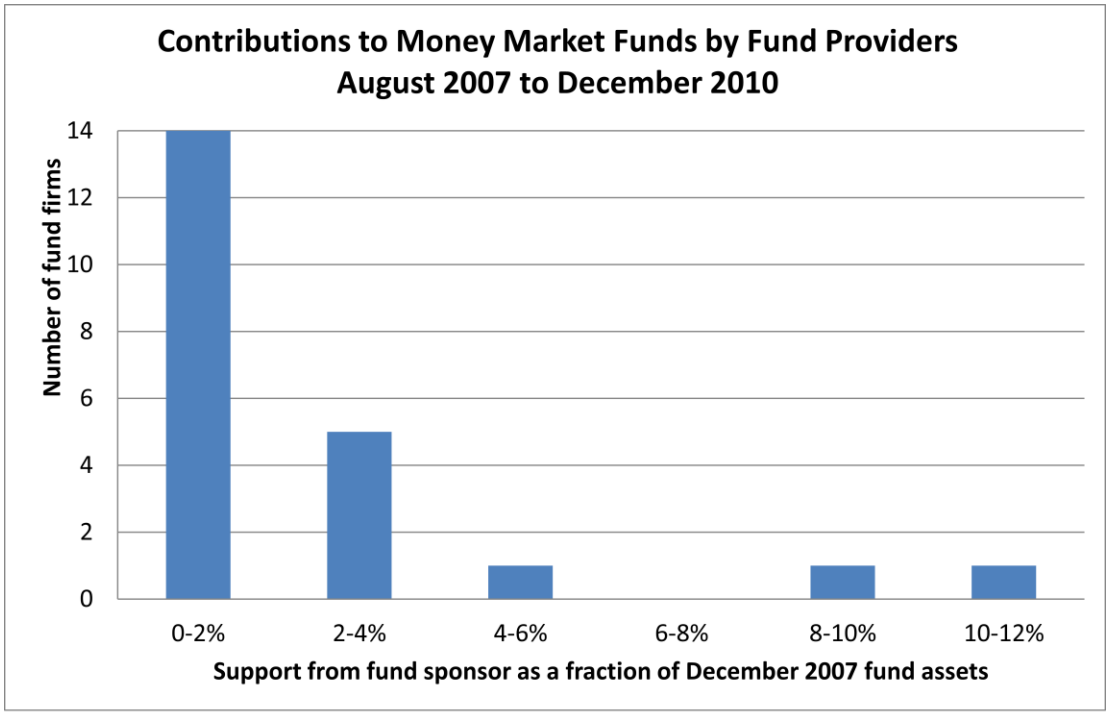
Another consideration in determining the size of a buffer requirement is the concentration of fund assets among the debt instruments of a small number of borrowers. As of June 2010, for example, the

[12] Evidence that such an estimate is reasonable can be found in "The aggregate demand for Treasury debt," by Arvind Krishnamurthy and Annette Vissing-Jorgensen, working paper, Northwestern University.

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

top 5 exposures of U.S. prime money market fund assets, were all to European banks, with each of the 5 banks representing an exposure of at least 2.5% of aggregate fund assets.[14]

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



Data source: Moody's

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

In general, the regulatory buffer should be sufficient in size to cover both (a) default losses on fund assets, and (b) potential additional losses that could arise from a need to sell or restructure fund assets quickly because of a moderately large surge of redemption demands. This second category of losses is relevant if the assets are illiquid or if their market values are affected by changes in market interest rates or credit spreads. The Investment Company Institute has recently proposed[15] an industry-wide "emergency liquidity facility," a bank with access to liquidity from the Federal Reserve, that could purchase assets from money market funds at a price equal to amortized cost. While an emergency liquidity facility would mitigate the liquidity risk of money market funds, it would leave them, and itself, exposed to default risk. Fund investors would have a lower incentive to run if they were confident of at least a moderate level of coverage of losses due to both illiquidity and default.

[15] See the letter of January 10, 2011, of Paul Schott Stevens, President and CEO of the Investment Company Institute, to the Securities and Exchange Commission, commenting on the report of the President's Working Group Report on Money Market Reform Options.

United States House of Representatives
Committee on Financial Services

"TRUTH IN TESTIMONY" DISCLOSURE FORM

Clause 2(g) of rule XI of the Rules of the House of Representatives and the Rules of the Committee on Financial Services require the disclosure of the following information. A copy of this form should be attached to your written testimony.

1. Name:	2. Organization or organizations you are representing:
Rene M. Stulz	

3. Business Address and telephone number:

[redacted]

4. Have you received any Federal grants or contracts (including any subgrants and subcontracts) since October 1, 2008 related to the subject on which you have been invited to testify?	5. Have any of the organizations you are representing received any Federal grants or contracts (including any subgrants and subcontracts) since October 1, 2008 related to the subject on which you have been invited to testify?
☐ Yes ☑ No	☐ Yes ☑ No

6. If you answered .yes. to either item 4 or 5, please list the source and amount of each grant or contract, and indicate whether the recipient of such grant was you or the organization(s) you are representing. You may list additional grants or contracts on additional sheets.

7. Signature:

Please attach a copy of this form to your written testimony.