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Securities and Exchange Commission
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Release No. 33-9408, IA-3616; IC-30551; File No. S7-03-13

Re: Money Market Fund Reform; Amendments to Form PF

Dear Securities and Exchange Commission:

Here are my comments on the proposed changes to Money Market Mutual Fund Regulation:

In summary:

- Floating NAVs will be costly to the economy. Very costly.
- Model-based ("mark-to-matrix") prices are NOT market prices.
- Model-based prices are vulnerable to manipulation.
- Model-based prices add systemic risk due to the small number of data vendors and the possibility of mispricing entire classes of assets.

[1] I am also on the boards of directors of the EDGA and EDGX stock exchanges. My comments are strictly my own and don't necessarily represent those of Georgetown University, the University of Pennsylvania, EDGX, EDGA, the U.S. Chamber of Commerce or anyone else for that matter.

- There is no evidence that model-based prices are more accurate than amortized cost for money-market assets.
- Floating NAVs will not stop runs, but will make them more likely in a panic.
- Gates stop runs. Period.
- Forced selling should trigger the gates.
- SEC should encourage MMMFs into using existing authority to slow redemptions in the next crisis.
- Moving volatile institutional assets into banking system increases systemic risk and the risk of bank runs.
- Uninsured depositors in failed FDIC-insured banks lost more than MMMF investors in the recent crisis.
- Sponsor support is not a bug, but a feature equivalent to a "preferred" CDS.
- Sponsors should disclose financial information in the SAI so that investors can ascertain the ability of sponsors to support their funds.
- Creating public transaction data will benefit the markets by creating a better understanding of the short-term money markets.
- A sunset provision on the enhanced disclosures is appropriate.

Background

Many things broke during the recent financial crisis. Several banks and investment banks failed, and one money market mutual fund ("MMMF"), The Reserve Fund, "broke the buck," and their investors received 99 cents instead of 100 cents on the dollar. There was considerable uncertainty as to which financial entities were solvent, and what government actions would occur. There was a flight to quality in the financial markets, including a large flow of assets from prime MMMFs into Treasury MMMFs.

In 2010, the SEC instituted reforms that strengthened MMMFs by tightening credit standards, reducing the maximum weighted average maturity, requiring minimum levels of Daily and Weekly Liquid Assets, and increasing transparency. These changes greatly improved the safety of MMMFs.

Following pressure from the FSOC, the SEC is proposing further changes to the industry, including forcing institutional prime MMMFs to use "market-based" prices instead of amortized cost, adopt a floating Net Asset Value (NAV) rounded to four decimal places (e.g. $1.000), and alternatively or in addition imposing gates and/or redemption fees when Weekly Liquid Assets drops below 15% of net assets.

Comments

Floating NAVs will be costly. Very costly.

Institutional prime money market funds contain nearly a trillion dollars in assets. Major changes to an industry of this size will have major consequences for the economy. I have estimated some of the impacts of the floating NAV in the attached study, "Impact of the SEC's Proposed Changes to Money Market Mutual Funds on Efficiency, Competition, and Capital Formation," which I prepared for the U.S. Chamber of Commerce. It is clear that the adoption of a floating NAV will cause a serious contraction in the assets in institutional prime MMMFs ranging from approximately $200 billion to over $950 billion. Such a major movement of assets from their preferred home to other places will be very costly. Commercial paper issuers will pay from approximately $2 billion to over $10 billion in additional interest costs, driving up the cost of capital for those issuers. MMMF investors will receive lower yields on their cash balances, ranging from approximately $.26 billion to over $1 billion annually.

The massive flow of deposits into the banking system will cause a massive increase in required bank capital at a time when banks are already under pressure to meet the toughened capital requirements of Basel III. The banking system will need to raise between $11.9 and $89.5 billion in additional capital to meet the capital requirements caused by the influx of assets from MMMFs. The large increase in bank deposits will push down the interest that banks pay on all deposits, costing savers additional billions of dollars every year.

The Commission has already wisely decided that capital requirements for MMMFs do not make sense for the U.S. economy. Moving the same assets into the banking system requires the sequestration of far more capital than any of the proposals for capital requirements for MMMFs. U.S. banks on average have a capital to assets ratio of approximately 11.3%, which is far larger than the prior proposals for capital standards for MMMFs. If the lower capital standards did not make sense, then the *de facto* higher capital standards that would occur by forcing the assets into the banking system make even less sense.

Altogether, the readily quantifiable upfront costs of requiring a floating NAV range from $13.7 billion to $91.5 billion, with annual recurring costs to the economy of $4.86 billion to $23.72 billion. Unfortunately, there are no countervailing benefits from a floating NAV.

"Market-based" prices are NOT market prices.

The proposal calls for the elimination of amortized cost accounting for MMMF assets, and their replacement with "market-based" prices.[2] It is extremely important to realize that "market-based" is very

[2] To be precise, the proposal eliminates the special treatment for MMMFs in Rule 2a-7 that permits the use of amortized cost accounting. MMMF assets would presumably be treated the same as other mutual

different from "market." Just like "cheese food" is very different from real cheese – there is a lot of stuff that goes into it other than cheese.[3] As the proposing release points out, most prime MMMF assets are "Level 2" assets for which market transaction prices are not readily available. They do not trade on regulated national securities exchanges that disseminate easily verifiable market data to the public according to various NMS plans. Indeed, approximately 10% of the assets are so untraded that they even lack CUSIP identifiers, which is the justification for the proposal to require the disclosure of the Legal Entity Identifier (LEI).[4] As the proposing release notes, most prime fund assets are priced using model-based prices. Typically, these are obtained from data vendors that often use "matrix" prices to value individual non-traded assets.

It does not follow that the normal arguments for using actual market prices for calculating mutual fund NAVs apply to using noisy guesstimates of true value of non-traded assets. These model prices have defects of their own, and their use for calculating the actual transaction price of a fund injects noise, not information, into published NAVs. Although such model-based estimates of value are useful as a crosscheck on amortized-cost-based prices, no one should pretend that model-based matrix prices are accurate to four decimal places.

"Mark-to-model" prices can be manipulated.

One of the advantages of amortized cost accounting is that the purchase price is a readily observable and easily audited figure. Model prices, by their nature, and based on inputs that are often subject to human judgment and interpretation. As the recent case of the so-called "London Whale" trades illustrates, traders and their firms, even when they are required to by law, are sometimes reluctant to report the true market prices of distressed securities.[5] As pricing models require human interpretation in their construction and application, they are much more prone to manipulation than easily audited amortized cost prices. The use of model-based prices to four decimal places will increase the surveillance and enforcement challenges faced by the SEC.

Even when a third-party pricing vendor is used, there is opportunity for manipulation. Pricing vendors know that they sometimes make mistakes, and they have procedures in place whereby users of the pricing services can contact them to adjust prices when appropriate. It stands to reason that a pricing vendor,

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fund assets and valued under Rule 2a-4, which does permit the use of amortized cost accounting for assets that mature in 60 days or less.

[3] Cheese food may contain as little as 51% cheese by weight. See 21CFR133.124 http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=133.124

[4] See the Proposing Release, 78 FR 36941, footnote 755.

[5] In the so-called "London Whale" case, two traders at JPMorgan Chase were charged with conspiracy based on their underreporting losses on certain trades by manipulating the values they reported for certain securities. See http://www.justice.gov/opa/pr/2013/August/13-ag-918.html.

eager to keep individual or even large groups of customers happy, may be reluctant to mark down the prices of widely held assets that are in doubt, especially when there is pushback from the customers.

The reliance upon a small number of data vendors for "market-based" prices adds a systemic risk.

There are a relatively small number of commercial pricing vendors that provide the majority of the prices used for "market-based" prices. This creates a concentrated risk point that could cause serious systemic problems if the prices of one of the leading data vendors get scrambled.

The pricing models often use the same inputs for large groups of assets. A mistake in one of the model inputs can cause a mispricing of large numbers of assets simultaneously. Traders on money market desks have related stories to me in which the pricing vendors have indeed mispriced entire classes of assets.

Consider the following scenario. It is late in the afternoon on a hot humid day in late August, and despite some jitters in the financial markets, the senior staff at the most widely used data vendor are taking their usual vacation and junior staffers are running the pricing models. These are not rocket scientist quants. The clerk who inputs into the computer the yield spread over some benchmark for, say, all financial institution commercial paper, inputs 0.90% instead of 0.09% and goes home for the day. No one at the pricing service catches the mistake, and no one senior enough to do anything about it is available that late in the day when customers call to complain. Suddenly, the yield number used to discount all financial institution commercial paper goes up by 81 basis points (0.90% - 0.09%). If the typical fund has half its assets in financial institution commercial paper, and an average maturity/duration of 36.5 days (1/10 of a year), then the published floating NAV will incorrectly fall by approximately 81 * .5 * .1 = 4 basis points. This would cause published floating NAVs at which transactions take place to incorrectly fall from $1.0000 to $.9996. This sudden and industry-wide fall during a time of financial jitters would send a false signal to investors that something really bad is happening and lead investors to flee *en masse* to safer stable value products.

"Murphy's Law" states that anything which can go wrong, will go wrong. With a floating NAV dependent on model-based prices from a small number of vendors, this can go wrong, and it will eventually go wrong.

There is no evidence that model-based "prices" are more accurate than amortized cost in normal times, let alone in a crisis.

Since most MMMF assets are held to maturity and pay out the amortized cost at maturity, the amortized cost is usually the most accurate estimate of the fundamental value of the asset unless there is a serious deterioration in the credit quality of the issuer that makes an imminent default likely.[6] The proposing release presents no evidence, and there is none, that supports the notion that the mechanical pricing models used by the data vendors are any more accurate than amortized cost numbers.

[6] There can be some temporary fluctuations in present value as a result of interest rate fluctuations, but these are small given the very short duration of the assets. See my attachment, page 28.

This is likely to be especially true in the next financial crisis. During a financial crisis, the ability of cash-strapped dealers to purchase inventory is impaired, and thus they may not provide any quotes or else very low "fire-sale" quotes for even the highest quality instruments. A pricing model that mechanically and indiscriminately vacuums up such quotes as inputs for the yield spreads in its models may produce wildly inaccurate prices in such situations. This will increase the likelihood of serious systemic consequences if such bad prices are required to be used to price transactions in MMMF shares.

There are no benefits to a floating NAV. A floating NAV increases the risk of runs.

Unfortunately, there are no benefits to a floating NAV that come anywhere close to justifying the massive costs. The primary justification for a floating NAV is the unproven theoretical notion that it will prevent runs in a future financial crisis. This theory is based on several false assumptions. As demonstrated in more detail in the attached paper, when more realistic conditions are added, a floating NAV actually makes runs more likely. Here is a quick summary:

Pro-floating proponents claim when a loss occurs in a constant NAV fund that pushes the shadow value of the assets below $1.00, there is a first mover advantage for investors to redeem their shares at $1.00, thus concentrating losses on the remaining investors. The redemptions force the fund to break the buck when the NAV drops to $.9947 and the fund is repriced to $.99.

However, the proponents do not take this argument to its logical next step. Now investors can purchase $.9947 of assets for only $.99, so there should next be a run INTO the fund that stops the outflows. Investor losses are thus limited to a penny – just a few months interest in a normal interest rate environment. Note that investors in bank CDs who cash them in prior to maturity typically incur a penalty of a few month's interest.

The proponents of a floating NAV also believe that after a floating NAV fund reports a loss, the investors will happily stay put and not run for the hills. This is based on assumptions that include 1) investors believe the published floating NAVs based on mechanical matrix pricing are accurate, 2) investors do not believe that there is any serial correlation in real market prices or the mechanical floating NAVs, 3) investors do not change their opinion of the skill level of the fund manager, 4) investors believe that the remaining assets can be sold for the model-based prices used in the calculation of the floating NAV, and 5) that the extremely risk averse investors who flock to stable value constant NAV funds will become acclimatized to declines in NAV and not run for the hills.

As pointed out above, there are many operational issues with the model-based prices used for a floating NAV calculation, and it is likely that many market participants will question their accuracy in a time of crisis. After all, a loss of trust in the financial infrastructure is one of the hallmarks of a crisis. It is likely that there will be lags in how the market – and the market-based models – respond to the crisis, leading to serial correlation in the estimated "market-based" prices. Many investors are likely to treat even a slight decline in the NAV like seeing one cockroach: If you see one, you know that there are more to follow. A

decline in the published floating NAV is a sign of trouble and there are likely more to follow. Consequently, they begin a flight to quality and run to seemingly safer assets.

Note that this can happen even in circumstances where there are no imminent defaults in any of the MMMF assets. All it takes with the floating NAV is for there to be small declines in the NAV in a time of jitters to set off a run.

Gates stop runs. Period.

As the primary objective of the reforms is to stop runs, the second alternative, imposing a gate and/or a redemption fees, is sufficient to stop a run. When a fund's Weekly Liquid Assets reach a given threshold, the fund temporarily suspends redemptions until the fund has sufficient liquidity to meet redemptions. End of run. There is no systemic impact caused by the forced selling of assets. Therefore, if gates are adopted, there is no need to incur the tremendous costs of the floating NAV. The gates alternative is much more effective at stopping a run and the corresponding forced sale of assets and it imposes a negligible cost on the economy compared with the floating NAV proposal.

Gates should be triggered by forced asset sales.

The real reason that runs are bad is because runs force funds to sell assets into a fragile market. These forced sales could seriously disrupt short term money markets. Public policy should thus focus on preventing the forced liquidation of assets by money market funds.

One of the problems with the proposed gate is that it will be triggered when Weekly Liquid Assets falls below 15% of total assets. This is likely to motivate some funds to start selling assets when they get close to the 15% threshold. Firms should not be permitted to sell assets to avoid hitting the trigger threshold, as such sales would destabilize markets in a future crisis. A better trigger would be one based on forced asset sales. The gate should be triggered when the firm's liquidity level would force it to sell assets.

SEC should also encourage MMMFs into using existing authority to slow redemptions in the next crisis.

Funds already have authority under the Investment Company Act to slow redemptions for up to seven days. [7] Furthermore, funds may also suspend redemption during periods of emergency as a result of which

[7] Section 22(e) of the Investment Company Act of 1940 states:
(e) No registered investment company shall suspend the right of redemption, or postpone the date of payment or satisfaction upon redemption of any redeemable security in accordance with its terms for more than seven days after the tender of such security to the company or its agent designated for that purpose for redemption, except—
(1) for any period (A) during which the New York Stock Exchange is closed other than customary week-end and holiday closings or (B) during which trading on the New York Stock Exchange is restricted;

"disposal by the company of securities owned by it is not reasonably practicable." As the SEC has the authority to define such emergencies, it should define periods of market crisis as such an emergency and encourage funds to slow the fulfillment of redemption requests to the naturally occurring cash flows in to the funds and not sell assets. The SEC should make it known that funds that are the selling assets in times of stress will soon receive extra attention from the SEC's Office of Compliance, Inspections, and Enforcement.

Moving volatile institutional assets into banking system increases systemic risk and the risk of bank runs.

The floating NAV proposal, if adopted, will lead to hundreds of billions of dollars of assets flowing into the banking system. This money will likely end up in the largest banks able to handle such large flows, thus making the biggest banks bigger and increasing their contributions to systemic risk. Furthermore, although this sophisticated money is likely to reside in the banking system in good times when bank risk is considered negligible, it will flee the banking sector at the first sign of trouble and seek safer havens. Thus, the floating NAV proposal will increase the risk of bank runs to the largest banks.

Losses to uninsured depositors have been larger in failed FDIC-insured banks than MMMFs.

Some proponents of floating NAVs cite investor protection as a rationale for imposing floating NAVs on MMMF investors.[8] However, requiring a floating NAV for institutional investors is likely to increase bank deposits by literally hundreds of billions of dollars. These large institutional deposits are typically much larger than the current limits of FDIC insurance, and thus these investors will be exposed to the credit risk of the banks.

In the event of a bank failure, losses to uninsured depositors can be quite severe. An analysis of the 425 failed banks from 2008 through 2012 listed on the FDIC's web site reveals that uninsured depositors received an average of 59.9% of their uninsured deposits.[9] This is a far worse record than the one money market mutual fund that failed during that period and which returned 99% to its shareholders.

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(2) for any period during which an emergency exists as a result of which (A) disposal by the company of securities owned by it is not reasonably practicable or (B) it is not reasonably practicable for such company fairly to determine the value of its net assets; or
(3) for such other periods as the Commission may by order permit for the protection of security holders of the company. The Commission shall by rules and regulations determine the conditions under which (i) trading shall be deemed to be restricted and
(ii) an emergency shall be deemed to exist within the meaning of this subsection.

[8] For example, see http://www.sec.gov/comments/s7-03-13/s70313-131.pdf

[9] http://www2.fdic.gov/divweb/index.asp

Exempting retail and government funds from the floating NAV proposal is a good idea.

I commend the Commission for exempting retail and government funds from the floating NAV proposal. Retail investors don't run, we crawl, and so there is no run risk with retail MMMFs. The experience from the last financial crisis shows that during a flight to quality the smart money finds its way into government MMMFs, because they are safer than banks in a crisis. Thus, there is no run risk in government MMMFs. Nevertheless, a floating NAV is bad for all MMMFs including institutional funds as it will not lessen run risk, but actually increase it along with systemic risk to the economy.

Dropping the proposal for capital requirements is appropriate.

The Commission should also be commended for having the good sense to drop the proposed capital requirements for the reasons mentioned in the proposing release. Such requirements are unnecessary and incredibly burdensome.

Sponsor support is not a bug, but a feature. It is the equivalent of a "preferred" CDS.

The release notes that sponsor support of MMMF assets has occurred quite often. Most of the time, such support has entailed the sponsor purchasing, or getting permission to purchase, assets that later paid off in full. Consequently this support is usually very inexpensive to provide. This is not an indication that there is anything wrong with MMMFs, but an important extra protection for investors. This support has many of the qualities of a credit default swap ("CDS"): if an asset in a MMMF's portfolio becomes questionable, the sponsor usually buys it at amortized cost.

Sponsor support is the equivalent of a "preferred" CDS. Just as corporations are not required to pay dividends on preferred stock, they are not required to support the instruments in their money market funds. However, firms must pay dividends on their preferred stock before common shareholders get anything. If a sponsor does not provide support to a MMMF when needed, it will soon go out of business.

The cost of this "preferred" CDS is far less to the sponsor than the cost of a traditional CDS, and far less costly than the expensive and unnecessary capital buffers that have been proposed in the past.

Sponsors, like brokerage firms, should disclose financial information in the SAI so that investors can determine the ability of sponsors to support a MMMF.

The proposing release asks "… should we require fund sponsors to publicly disclose their financial statements, in order to permit non-shareholders to evaluate the sponsor's capacity to provide support?"[10]

[10] Proposing Release, 78 FR 36925

Yes. Two rare events have to occur in order for a MMMF to break the buck: 1) the MMMF has to suffer a loss, and 2) the sponsor lacks desire or the financial ability to support the MMMF. This combination makes the MMMF even safer. In order for investors to determine whether a MMMF has the capacity to support the fund, they must be able to determine the financial size of the sponsor relative to the fund. If the sponsor is relatively small relative to the fund, it may lack the capacity to support the fund when needed.

Brokers are currently required to provide financial information to customers under Rule 17a-5 which implements Section 17e(1)(B) of the '34 Act. The logic of this section is to permit customers to have a better understanding of the counterparty risk they have with regard to their brokers. Similar logic applies to the sponsors of money market funds. A simple balance sheet will quickly permit potential investors to determine whether a fund is big enough to support its MMMFs. However, a better analysis of the fund sponsor requires a complete set of financial statements, not just a balance sheet. [11]

Creating public transaction data will benefit the markets by creating a better understanding of the short-term money markets.

The proposal that MMMFs report actual sale prices of assets is a good idea. This will give the Commission and the public a better understanding of the operations of MMMFs and create additional transparency in the secondary market for short-term money market instruments. Currently, the secondary market is opaque and there is very little readily available information on the volumes and prices of secondary market transactions.

A sunset provision on the enhanced reporting requirements also makes sense.

It remains to be seen, however, just how useful the newly required data will be, and exactly how costly it will be to produce. There needs to be a large enough public purpose to justify the expropriation of proprietary trading information, which is intellectual property, and the compliance tax placed upon subject entities.

The Commission should put a three or five year sunset provision on the enhanced reporting requirements. This will provide sufficient time for the Commission to gather and understand the usefulness of the gathered data and evaluate whether continued collection is justified.

If you have any questions, feel free to email or call me.

Respectfully submitted,

James J. Angel, Ph.D., CFA

[11] See my comments on Rule 17a-5 in http://www.sec.gov/comments/s7-23-11/s72311-17.pdf.

Impact of the SEC's Proposed Changes to Money Market Mutual Fund Regulation on Efficiency, Competition, and Capital Formation.

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I wish to thank the U.S. Chamber of Commerce for providing financial support for this project. All opinions expressed herein are my own and do not necessarily reflect those of the University of Pennsylvania, Georgetown University, or the U.S. Chamber of Commerce.

Executive Summary

The U.S. Securities and Exchange Commission has recently proposed changes to the regulations governing money market mutual funds.[1] The proposals include, among other things, 1) requiring institutional prime funds to switch to a floating Net Asset Value ("NAV"), 2) requiring funds to use "market-based" estimates of prices to calculate the floating NAV, and/or 3) impose restrictions on redemptions during times of panic such as liquidity fees or "gates." As there are nearly $1 trillion in assets in institutional prime MMMFs along with literally thousands of affected corporations, the proposed changes will be costly and have large impact on the economy. The initial upfront costs of increases in required bank capital along with system upgrades to handle floating NAVs range from $13.7 billion to over $90 billion, and the ongoing annual costs between $4 billion and $23 billion.

The floating NAV proposal destroys the benefits of money market funds for non-retail users. The uncertainty added by a floating NAV reduces the utility of money market funds for cash management purposes. A large fraction of institutional money market fund users will stop or reduce using money market funds. The reduction in institutional prime money market fund assets could range from approximately $200 billion to over $950 billion if the floating NAV proposal is adopted.

The floating NAV proposal and elimination of amortized cost accounting will cause significant reductions in competition, both in the money market fund sector, in the banking sector, and between the money market fund sector and the banking sector. Approximately half of the existing institutional prime money market funds will be forced to close in the most likely scenario due to the outflow of assets.

The shrinkage of institutional prime money market funds will lead to net inflows of institutional cash ranging from $105 billion to $792 billion into the banking system. Most of it will likely go to the largest banks able to deal with large fluctuating institutional deposits, further increasing concentration and decreasing competition in the banking sector. This cash is likely to reside in the banking system in normal times and flee to safety during a financial crisis, thus increasing systemic risk and the likelihood of bank runs in a future financial crisis. These inflows will require the banking system to raise between $11.9 billion and $89.5 billion in additional capital, adding additional stress on an already stressed banking sector still recovering from the financial crisis. The sequestration of this capital in the banking system will reduce capital available for investment in other productive sectors of the economy and thus reduce economic growth.

The floating NAV proposal and the elimination of amortized cost accounting will damage capital formation by raising the cost of funding to issuers of commercial paper that rely upon money market funds to purchase the paper. The floating NAV proposal will increase funding costs for issuers from between $2.3 billion to $12.8 billion per year. These costs are summarized in the following table:

[1] United States Securities and Exchange Commission, Release 33-9408; IA-3616; IC3051; File No. S7-03-13, Money Market Fund Reform, Amendments to Form PF, 78 Federal Register 36834 – 37030, also available at http://www.sec.gov/rules/proposed/2013/33-9408.pdf, hereafter referred to as the "Release." These funds are mutual funds that generally invest in short-term financial instruments and seek to maintain a stable Net Asset Value (NAV) of $1.00 per share. MMMFs are currently regulated under SEC Rule 2a-7, 17 CFR 270.2a-7, and are often referred to as "2a-7 funds".

Table 1
Summary Costs of Floating NAVs
$ Billions

Initial One-Time Costs		
	One-Time Costs $ Billions	
	Low	High
Required Increases in Bank Capital	$ 11.9	$ 89.5
System Upgrades	$ 1.8	$ 2.0
Total Initial Costs	$ 13.7	$ 91.5
Recurring Annual Costs		
	Annual Costs $ Billions	
	Low	High
Reduced Yields to MMMF Investors	$ .26	$ 1.17
Reduced Interest Paid to Bank Depositors	$ 1.1	$ 4.6
Increased Capital Costs for Banks	$ 1.0	$ 7.2
Increased Interest Costs to Commercial Paper Issuers	$ 2.3	$ 10.5
Maintenance Costs for System Upgrades	$ .2	$ .25
Total Recurring Annual Costs	$ 4.86	$ 23.72

The floating NAV proposal and the elimination of amortized cost accounting will seriously damage the efficiency of the U.S. capital markets by forcing investors to use less efficient means to manage their short-term cash balances and by forcing issuers to use less-efficient means of raising capital.

The notion that a floating NAV will reduce a money market fund's susceptibility to heavy redemptions in a time of panic is based on several false premises. These include 1) that the proxies used for "market" value reflect the fundamental value of the assets better than amortized cost, 2) that all market participants believe that funds' published floating NAVs are accurate in a time of disorderly markets, and 3) that market participants believe that there is no serial correlation in asset prices as well as published floating NAVs. Relaxing these false assumptions shows that the floating NAV proposal will increase, rather than decrease, the propensity for investors to flee in a panic. Investors will have an incentive to run even in cases where the likelihood of an issuer default is remote, but the possibility of a decline in the noisy NAV may be much higher.

The use of "market-based" values instead of amortized costs for valuing money market fund assets is based on the unproven assumption that some proxy for the "market-based" value is a better measure of the fundamental value of a non-impaired money market instrument than its amortized cost. First,

"market-based" prices are ill-defined, as short-maturity money market instruments are not designed to be traded in a secondary market. Indeed, the majority of prime money market fund assets are categorized as Level II assets for which readily available market prices are not available. Funds today generally rely upon commercial pricing vendors that use, not real transaction prices or even dealer quotes, but models to estimate prices. Even market quotes may be very inaccurate during a market panic, as indicated in the SEC's no-action relief during the financial crisis of 2008.

The price at which a money market fund instrument can be liquidated is only relevant when the fund has to sell securities. Funds with sufficient daily and weekly liquidity need not sell assets, and the gates or liquidity fees can be used in a panic to eliminate any need to sell assets into a distressed market. The use of noisy proxies for market value combined with the elimination of rounding to the nearest penny will inject unnecessary noise into the daily pricing of fund shares with serious undesirable consequences. This noise will destroy the utility of prime money market funds for a large number of users and lead to a substantial shrinkage of the money market fund industry.

The notion that a floating NAV will reduce runs is also based on an extreme belief that noisy NAVs will "acclimatize" the most risk-averse investors and make them so risk tolerant of frequent changes in the NAV that they will not run in a panic when the NAV decreases. It is more likely that they will flee the entire sector if floating NAVs are instituted.

1. **Introduction**

The U.S Securities and Exchange Commission has proposed changes to the regulation of money market mutual funds ("MMMFs"). Among other things, the proposals call for:

- MMMFs would no longer be permitted to use amortized cost accounting for money market fund assets.[2]
- Institutional MMMFs would be required to transact at floating NAVs, rounded to one basis point or four decimal places (e.g. $1.0000). Retail funds (defined as MMMFs that restrict redemptions to no more than $1 million per day) and government funds would still be allowed to transact at a constant NAV rounded to the penny (e.g. $1.00).
- Alternatively, or in combination with the floating NAV, funds other than government MMMFs would be required to impose redemption restrictions when the Weekly Liquid Assets fall below 15% of total assets.[3] These restrictions include a 2% redemption fee. The MMMF would also be able to temporarily suspend redemptions, known as imposing a "gate". A fund's board of directors could determine that the restrictions would not be in the best interest of the fund and not impose the restrictions.
- Additional disclosures are required, including disclosing transaction prices for the sale of fund assets and sponsor support.
- MMMFs would be required to conduct more stringent stress tests.
- Large private funds that act like MMMFs would also be required to provide information to the SEC in order to facilitate monitoring by the Financial Stability Oversight Council ("FSOC").

This study examines the impact of the proposed changes on money market fund industry and its impact on efficiency, competition, and capital formation. In order to examine these impacts, it is important to first estimate the impact of the proposals on the total assets under management in institutional prime money market funds, and then to estimate how investors will invest the assets that are transferred out of institutional prime money market funds. This study then examines the impact of the proposed reforms on systemic risk and the overall economy. The study concludes with a summary of the impact on efficiency, competition, and capital formation.

[2] Specifically, the proposal eliminates the special treatment for MMMFs in Rule 2a-7 that permits the use of amortized cost accounting. MMMF assets would presumably be treated the same as other mutual fund assets and valued under Rule 2a-4, which does permit the use of amortized cost accounting for assets that mature in 60 days or less.

[3] Weekly Liquid Assets consist generally of cash and assets that will mature within five business days, in addition to various government securities and securities with a demand feature that is exercisable and payable within five business days. See SEC Rule2a-7(a)(32).

2. **Impact of floating NAV on MMMF assets.**

The bulk of the impact of the proposal on efficiency, competition, and capital formation will be a function of the impact on the total assets of institutional prime money market funds. The stable value of a constant NAV is at the heart of the MMMF product. It is extremely attractive to very risk-averse investors who seek a safe haven for short-term funds that passes on current market rates to investors.

A floating NAV seriously reduces the utility of MMMF investing. A floating NAV will create frequent, albeit small, losses or gains even when there have been no credit events in the underlying portfolio. Adding even small amounts of noise to the transaction price of a MMMF causes serious accounting, tax, and operational complexities. Accounting systems at the MMMFs and the thousands of users of MMMFs would have to be upgraded, which is an expensive and time consuming process. Every transaction potentially creates taxable gains and losses that must be tracked, adding to more complexity. Corporate cash investment policies and, in some cases, state laws need to be changed to permit investment in floating NAV funds. The lack of a stable NAV will reduce the ability of funds to provide intraday redemptions, impairing the liquidity which is one of the core value propositions of MMMFs.

It is clear that eliminating the most basic attribute of the product, its stable value, will cause investors to shift to other products. Behavioral economists have documented that people prefer certainty.[4] In order to examine the impact of this shift on efficiency, competition, and capital formation, it is necessary to estimate how much money will flow out of the MMMFs and where the money will go.

The proposal only calls for a floating NAV for institutional funds. Although it is difficult to predict the exact amount of the outflows, there is very good evidence that there will be substantial outflows from the institutional MMMFs if the floating NAV is mandated. Numerous comment letters from users of MMMFs have stated that they will curtail their use of MMMFs if the constant NAV is eliminated.[5] Instead of attempting a point estimate of the impact, this study examines several different plausible scenarios:

Outflow Scenario 1: Complete Elimination of Institutional Prime MMMFs

In this scenario, the utility of institutional prime funds has been so diminished that the industry effectively ceases to exist. Even though some institutional investors may at first choose to remain in institutional money market funds, the exodus of assets from the industry causes a death spiral in this scenario. The remaining assets are too small to support the overhead costs of running the funds, and the bulk of funds close. Even those institutional that would have chosen to remain in floating NAV funds find that their preferred funds have closed, and the reduced number of remaining funds are unappealing. The desire to not be different from other institutional managers, along with the reduced number of available funds, causes a herding effect, and those managers exit the product as well. All $974 billion of the assets in the

[4] For example, see Daniel Kahneman and Amos Tversky, 1979, Prospect Theory: An analysis of decision under risk, *Econometrica* 47(2) 263-292.

[5] Many of these are cited in the Release. See for example Release footnote 567, 78 FR 36915.

institutional prime funds flow out of those funds into other alternatives, including banks and Treasury funds. [6]

Outflow Scenario 2: Survey-based Estimate of Asset Outflows

One of the most straightforward methods of estimating how large institutional, corporate, and government investors would respond to a floating NAV is to ask them. As those investors do not operate MMMFs themselves, their answers are likely to be unbiased estimates of how they would react to a floating NAV. This is the best method in the circumstances, and generates the most likely scenario. This is exactly what Treasury Strategies, Inc., did in its 2012 survey of 203 such investors, the majority of whom manage more than $100 million in short-term assets.[7]

The Treasury Strategies survey indicates that these institutional investors would reduce their MMMF holdings by approximately 61% if a floating NAV were enacted. This is comparable to other surveys that show similar magnitudes of reduction, and is consistent with the hundreds of comment letters from users of money market funds.[8] This 61% reduction indicates that approximately $594 billion of assets will leave institutional prime money market funds.

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[6] The $974 billion in institutional prime money market fund assets is as of February 28, 2013 from the Release, 78 FR 36916.

[7] To be precise, the question posed was:

There is a proposal to change MMFs from a constant $1 net asset value (NAV) to a floating net asset value. Under typical market conditions, it is anticipated that the share prices would fluctuate within a very narrow range.

Proponents say this will ensure everyone pays and receives a price that automatically reflects any gains or losses and that it reduces the potential for runs on MMFs during adverse situations.

Opponents argue that a floating NAV would impair the use of funds as a liquidity instrument, as well as cause other legal, accounting, tax, and market disruptions.

If the floating NAV proposal were enacted, what action would your organization most likely take?

A. Increase use of MMFs

B. Continue using MMFs at current level

C. Decrease use of MMFs

D. Stop using MMFs entirely

The study is available at http://www.sec.gov/comments/4-619/4619-166.pdf

[8] See, for example, the 2013 Liquidity Survey from the Association of Financial Professionals, and the numerous comment letters submitted to the SEC in response to this release which can be found in File S7-03-13 at http://www.sec.gov/comments/s7-03-13/s70313.shtml.

Outflow Scenario 3: Average of Scenarios 2 and 4

This scenario is halfway between Scenario 2 and the conservative lower bound on outflows from Scenario 4 which is described below. In this scenario, approximately 42% of the assets, or $404 billion, will leave institutional prime MMMFs.

Outflow Scenario 4: Conservative Lower Bound on Outflows

The Association of Financial Professionals ("AFP") conducts annual liquidity surveys of corporate treasurers. Its *2013 Liquidity Survey* indicates that if a floating NAV were imposed, 22% of the 885 respondents would stop investing and divest all holdings.[9] This appears to present a conservative lower bound on the outflows that will occur from institutional prime money market funds if the floating NAV is imposed, and it ignores the 18% that said they would reduce but not eliminate their use of floating NAV funds. This 22% figure is more conservative than the approximately 35% that would stop altogether in the Treasury Strategies survey. One potential reason for the difference between the AFP survey results and the Treasury Strategies survey results is that the Treasury Strategies sample included institutional and governmental investors, compared with the AFP survey of corporate investors. Although the Treasury Strategies' sample is probably more representative of the investors in institutional prime MMMFs, the lower AFP number is used here to provide a more conservative lower bound on the potential outflows. Unlike Treasury Strategies, the AFP survey did not attempt to estimate the total assets which would leave MMMFs if reforms were implemented.

The following table illustrates the total number of dollars, in billions, that will leave institutional prime money market funds under the four scenarios outlined above, based on the $974 billion estimated to be in institutional prime money market funds as of February 28, 2013. This indicates that from $214 to $974 billion will flow out of institutional prime money market shares if the floating NAV proposal is implemented.

Table 2
Likely Outflow Scenarios From Prime Institutional Money Market Mutual Funds under Floating NAVs

Scenario Number	1	2	3	4
Description	Complete Elimination	Survey-based	Mid-range	Conservative
Percentage outflow	100%	61%	42%	22%
Dollar outflow in $ billions	$ 974	$ 594	$ 404	$ 214

[9] Association of Financial Professionals, *2013 Liquidity Survey*, available at http://www.afponline.org/mbr/reg/pdf/2013_AFP_Liquidity_Survey.pdf

3. **Substitutes for Institutional Prime Money Market Funds**

One of the key issues in this analysis is how institutional investors will substitute other investments for the funds that flow out of institutional prime MMMFs. Institutional investors have a variety of alternatives, including:

- Bank deposits and other bank products
- Government MMMFs exempt from the floating NAV
- Direct investment in commercial paper and other money market instruments
- Separately managed accounts
- Private funds
- Offshore money funds
- Ultra-short bond funds or short-duration ETFs.

Again, since it is not clear exactly where the displaced assets will end up, it is useful to construct a variety of scenarios. One major uncertainty is the degree to which institutional investors will view Treasury and government money market mutual funds as substitutes for prime money market mutual funds. As Treasury and government funds will be exempt from the floating NAV requirement, they will continue to offer the advantages of a stable value, convenience, and liquidity. However, they traditionally suffer from the lower yields associated with the putatively less risky government securities. As prime money market mutual fund investors have specifically chosen higher yielding prime funds over government funds and direct investment in Treasury securities, it is likely that many of them will continue to choose alternatives to government- and Treasury-based products.

Substitution Scenario 1: 100% of Assets Leaving MMMFs Switch to Banks.

Although the unlimited FDIC insurance has expired, the latest AFP liquidity survey indicates that corporations have not materially reduced their cash holdings in banks.[10] Although large deposits are not insured by the government, there is a perception that the largest banks currently have negligible counterparty risk. In this scenario, it is assumed that the institutional investors have already rejected government money market funds because of their lower yield, and transfer all of the assets that leave the institutional prime money market funds for bank products such as deposit accounts, bank money market accounts, and CDs. Investors also do not manage material amounts of the funds in house and buy money market instruments directly; the cost of hiring additional employees to do credit analysis and manage the money market instruments makes this alternative too costly for most MMMF clients. This is consistent with historical industry experience during periods of interest rate spikes when higher yields were available through purchasing money market instruments directly yet assets did not migrate to direct management.

[10] The unlimited FDIC insurance on non-interest-bearing transactions accounts expired on December 31, 2012. See http://www.fdic.gov/deposit/deposits/changes.html.

Substitution Scenario 2: Assets Leaving MMMFs Are Invested Pro Rata Over Other Assets Not Including Government MMMFs at Historical Ratios.

Another scenario is that the assets are distributed across all of the other possibilities pro-rata in accordance with their historical behavior. In other words, investors in the aggregate will invest the cash taken out of prime money market funds in the same proportion as they invest the rest of their cash. From the Federal Reserve Flow of Funds Table L.102, one can derive the market shares of various cash management alternatives from looking at how nonfinancial corporations have managed their financial assets over the last several years:

Table 3
Nonfinancial Corporation's Allocation of Short-Term Financial Instruments
2007-2012

Type of Investment	2007	2008	2009	2010	2011	2012	2007-2012 average
Foreign Deposits	3.8%	1.9%	2.1%	2.7%	2.3%	0.8%	2.3%
Bank Products	43.6%	31.0%	43.6%	52.5%	55.8%	58.1%	47.4%
Money Market Funds	40.9%	56.8%	44.3%	33.5%	31.0%	29.5%	39.3%
Commercial Paper	5.2%	4.5%	3.8%	4.6%	4.6%	4.0%	4.4%
Treasuries, Agencies and Municipal Securities	6.0%	5.2%	5.7%	5.9%	5.4%	6.9%	5.9%
Repurchase Agreements	0.6%	0.6%	0.5%	0.8%	0.8%	0.7%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total without MMMF	59.1%	43.2%	55.7%	66.5%	69.0%	70.5%	60.7%

Source: Derived from Federal Reserve Flow of Funds Table L.102[11]

This table shows that, on average over the last 5 years, the average nonfinancial corporation kept 47.4% of its short-term financial instruments in bank products such as deposit accounts and CDs. If one assumes that, without money market funds, the available cash will be spread across the other available alternatives in the same proportion as before, we get the following table:

[11] Available at http://www.federalreserve.gov/releases/z1/current/

Table 4
Nonfinancial Corporation's Allocation of Short-Term Financial Instruments Other Than Money Market Funds

2007-2012

Type of Investment	2007	2008	2009	2010	2011	2012	2007-2012 average
Foreign Deposits	6.3%	4.5%	3.8%	4.1%	3.4%	1.2%	3.9%
Bank Products	73.7%	71.7%	78.2%	78.9%	81.0%	82.4%	77.7%
Commercial Paper	8.8%	10.4%	6.8%	6.9%	6.6%	5.6%	7.5%
Treasuries, Agencies and Municipal Securities	10.1%	12.1%	10.2%	8.9%	7.8%	9.8%	9.8%
Repurchase Agreements	1.0%	1.3%	1.0%	1.2%	1.2%	0.9%	1.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Using the five-year average as an estimator, 77.7% of the assets leaving institutional prime money market funds will end up in bank products, 7.5% in commercial paper, 9.8% in U.S. Treasuries, GSE's and municipal securities, and 1.1% in repurchase agreements.

Substitution Scenario 3: Assets Leaving MMMFs Are Invested Pro Rata Over Other Assets Including Government MMMFs at Historical Ratios.

This scenario also assumes that the assets leaving institutional prime MMMFs are spread pro-rata across all the other remaining asset classes. Only now, government money market funds are included as one of the other classes. As the Federal Reserve data does not break out government MMMFs from prime MMMFs, the percentage of assets in government money market funds is estimated by using the proportion of institutional government funds from the ICI data.[12]

[12] This was calculated by multiplying the holdings of money market funds in the Federal Reserve data by the ratio of (Net Assets of Institutional Government Funds) divided by (Net Assets of Institutional Government Funds plus Net Assets of Institutional Prime Funds). Data were obtained from the ICI Factbook, http://www.icifactbook.org/pdf/13_fb_table39.pdf.

Table 5
Nonfinancial Corporation's Allocation of Short-Term Financial Instruments Including Government MMMFs

2007-2012

	2007	2008	2009	2010	2011	2012	2007-2012 average
Foreign Deposits	5.1%	2.6%	2.8%	3.4%	2.8%	1.0%	3.0%
Bank Products	59.6%	42.3%	58.2%	66.0%	66.9%	69.7%	60.4%
Government Money Market Funds	19.2%	41.0%	25.6%	16.4%	17.4%	15.4%	22.5%
Commercial Paper	7.1%	6.1%	5.0%	5.7%	5.5%	4.8%	5.7%
Treasuries, Agencies and Municipal Securities	8.2%	7.1%	7.6%	7.4%	6.4%	8.3%	7.5%
Repurchase Agreements	0.8%	0.8%	0.7%	1.0%	1.0%	0.8%	0.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Using the five year average as an estimator, 22.5% of the assets leaving institutional prime money market funds will switch to government funds, and 60.4% will end up in bank products.

The following tables display the dollar value of assets leaving institutional prime money market funds in each scenario, along with their destinations.

Table 6
Institutional Prime MMMF Asset Movements to Banks
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		Bank%	$ Billions			
All Bank	1	100.0%	$ 974	$ 594	$ 404	$ 214
Pro-rata without Government Funds	2	77.7%	$ 757	$ 462	$ 314	$ 167
Pro-rata with Government Funds	3	60.4%	$ 588	$ 359	$ 244	$ 129

Table 7
Institutional Prime MMMF Asset Movements to Government Funds
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		% Government Funds	$ Billions			
All Bank	1	0.0%	$ -	$ -	$ -	$ -
Pro-rata without Government Funds	2	0.0%	$ -	$ -	$ -	$ -
Pro-rata with Government Funds	3	22.5%	$ 219	$ 134	$ 91	$ 48

Table 8
Institutional Prime MMMF Asset Movements to Foreign Deposits
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		% Foreign Deposits	$ Billions			
All Bank	1	0.0%	$ -	$ -	$ -	$ -
Pro-rata without Government Funds	2	3.9%	$ 38	$ 23	$ 16	$ 8
Pro-rata with Government Funds	3	3.0%	$ 29	$ 18	$ 12	$ 6

Table 9
Institutional Prime MMMF Asset Movements to Commercial Paper
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		Commercial Paper %	$ Billions			
Bank	1	0.0%	$ -	$ -	$ -	$ -
Pro-rata without Government Funds	2	7.5%	$ 73	$ 45	$ 30	$ 16
Pro-rata with Government Funds	3	5.7%	$ 56	$ 34	$ 23	$ 12

Table 10
Institutional Prime MMMF Asset Movements to Treasuries, Agencies, and Munis
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		% Treasuries, Agencies, and Munis	$ Billions			
Bank	1	0.0%	$ -	$ -	$ -	$ -
Pro-rata without Government Funds	2	9.8%	$ 96	$ 58	$ 40	$ 21
Pro-rata with Government Funds	3	7.5%	$ 73	$ 45	$ 30	$ 16

Table 11
Institutional Prime MMMF Asset Movements to Repurchase Agreements
Floating NAV

			Fund Outflow Scenario			
			1	2	3	4
			Complete Elimination	Survey-based	Mid-range	Conservative
Percentage of Assets Leaving Institutional Prime MMMFs			100%	61%	42%	22%
Dollars Leaving Institutional Prime MMMFs:			$ 974	$ 594	$ 404	$ 214
Substitution Scenario		% Repurchase Agreements	$ Billions			
Bank	1	0.0%	$ -	$ -	$ -	$ -
Pro-rata without Government Funds	2	1.1%	$ 11	$ 7	$ 5	$ 2
Pro-rata with Government Funds	3	0.9%	$ 8	$ 5	$ 3	$ 2

4. **Impact on Competition in the Money Market Mutual Fund Industry**

The floating NAV proposal will reduce competition in the MMMF industry by severely reducing the number of funds. The floating NAV proposal will lead to a massive outflow of assets from institutional prime MMMFs ranging from $214 billion to $974 billion. This outflow will reduce the size of the remaining funds substantially. If one assumes that a fund needs to generate $1 million in management fees to cover its expenses, and use the current average expense ratio for institutional prime funds of 19 basis points, this implies that the minimum sustainable size for an institutional prime money market fund is 1/.0019, or approximately $526 million.[13] If one applies the shrinkage pro rata across all funds as a percentage of assets, we see that many funds will shrink below the long-term sustainable level.

This outflow will force many institutional prime funds to close. The following table shows the percentage of institutional prime funds which will close under each scenario. A sensitivity analysis is also presented with minimum fee levels of $0.5 million and $1.5 million.

[13] Asset size and fee information taken from *Money Fund Intelligence Daily*, August 26, 2013.

Table 12
Closure rate of Institutional Prime Funds
Floating NAV

		Scenario			
		1	2	3	4
		Complete Elimination	Survey-based	Mid-range	Conservative
Fund outflow %		100%	61%	42%	23%
Minimum Fund Fees $ millions	Sustainable Fund Size $ millions	Percentage of Institutional Prime Funds Closing			
$0.5	$263	100%	40.5%	30.6%	27.3%
$1.0	$526	100%	52.1%	46.3%	41.3%
$1.5	$789	100%	57.9%	52.1%	46.3%

This reduction in the number of funds will reduce competition in the industry, leading to more concentration. This may increase the pricing power of the remaining funds and result in higher fees for investors.

In addition, such a major contraction in the industry will result in less competition between institutional prime money market funds and banks. This may also lead to lower yields to investors and higher costs to borrowers.

5. Impact of Floating NAV on Total Bank Deposits

The floating NAV proposal will clearly cause a large transfer of assets from the money market mutual fund sector to the banking sector. However, the total increase in deposits and assets to the banking sector is not the same as the decrease in prime MMMF assets. It is necessary to adjust for the fact that some prime MMMF assets are invested in bank products such as deposit accounts and CDs. Although the MMMF shareholders will be increasing their deposits in banks, the MMMFs themselves will be decreasing the deposits held in the banks. Over the last 20 years, prime MMMFs invested an average of 18.7% of their assets in bank products.[14] This historical average is used to estimate the future fraction of prime MMMF assets that would be invested in bank products. These investments in bank products need to be subtracted from the transfers by MMMF investors from MMMFs to bank products to determine the net inflows of deposits to the banking sector.

[14] ICI 2013 Factbook, Table 44. Available at http://www.icifactbook.org/pdf/13_fb_table44.pdf

One could argue that a transfer of assets from MMMFs to banks would not change total deposits because the assets sold by the MMMFs will be paid for with deposits from the banking sector, leading to no net change in bank deposits. However, this is not the case. Historically, changes in MMMF assets and bank deposits have not offset each other on a one for one basis. As prime MMMF assets contract, the issuers of the assets held by the MMMFs have to replace their funding with other sources. For example, commercial paper issuers are likely to replace maturing commercial paper with bank loans, and the banks are likely to use their excess reserves to fund those loans. With over $2 trillion in excess reserves, there is ample room for such deposit expansion.[15] Similarly, securities dealers who use repurchase agreements to fund their inventories will likely replace maturing repo with repo from the banking system, again likely funded from excess reserves. Total deposits will thus increase as investors move funds from institutional prime money market funds to the banks.

The following table shows the net inflows to the banking sector under each of the four scenarios:

Table 13
Net Increases in Bank Deposits
Floating NAV

	Fund Outflow Scenario			
	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
Percent of Institutional Prime Fund Asset Outflows	100%	61%	42%	22%
Outflows from Institutional Prime MMMFs ($ billions)	$ 974	$ 594	$ 404	$ 214
Substitution Scenario	Net Increases in Bank Deposits			
Bank	$792	$483	$329	$174
Pro-rata without Government funds	$615	$375	$255	$135
Pro-rata with Government funds	$478	$292	$198	$105

Note that bank deposits will increase from between $105 to $792 billion, an increase of from 1.0% to 7.3% in the $10.8 trillion in total bank deposits.[16]

[15] As of August, 2013 there were approximately $2.1 trillion in excess reserves. See http://www.federalreserve.gov/releases/h3/current/.
[16] Total bank deposits of $10.8 trillion in active FDIC insured institutions as of June 30, 2013. Data from http://www2.fdic.gov/idasp/main.asp.

6. **Impact on Competition in the Banking Industry**

As demonstrated above, the floating NAV proposal will cause a large migration of assets from institutional prime MMMFs to banks. These will be large institutional flows far above the FDIC insurance limit from investors who are concerned about counterparty risk. Consequently, virtually all of these deposits will go to the largest banks that can handle large and volatile institutional deposits and are perceived to have negligible credit risks. In other words, the bulk of the deposit increase will likely end up in the 10 largest banks. These top-10 banks already hold approximately $5.6 trillion, or 51.4%, of the total deposits in US banks. The following table demonstrates the increase in concentration that will occur under the floating NAV proposal assuming that all of the inflows go to the top-10 banks:

Table 14
Change in Bank Concentration
Floating NAV

	Scenario			
	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
Percent of Institutional Prime Fund Asset Outflows	100%	61%	42%	22%
Percentage of Bank Deposits in Top 10-Banks Before Floating NAV	51.4%	51.4%	51.4%	51.4%
Substitution Scenario	Percentage of Bank Deposits in Top-10 Banks After Floating NAV (% Change)			
Bank	54.8% (3.3%)	53.5% (2.1%)	52.9% (1.4%)	52.2% (0.8%)
Pro-rata w/o Government funds	54.1% (2.6%)	53.1% (1.6%)	52.6% (1.1%)	52.0% (0.6%)
Pro-rata with Government funds	53.5% (2.1%)	52.7% (1.3%)	52.3% (0.9%)	51.9% (0.5%)

Notice that the ratio of total deposits in the 10 largest banks to total deposits will add between from 0.5% and 3.3% to the existing concentration of 51.4% of deposits in the 10 largest banks as a result of the floating NAV proposal. This will reduce competition in the banking industry.

7. **Impact of Floating NAV on Yield to Investors**

Investors who are forced out of institutional prime MMMFs will suffer a loss as they manage their funds in a less efficient manner. Although the bulk of assets are likely to flow into bank products, Treasury and government MMMFs will also be available. The yield spread between Treasury MMMFs and institutional prime MMMFs provides an upper bound on the losses to investors from lower yields. Some investors may switch to government MMMFs that invest in instruments issued by Government Sponsored Entities ("GSEs") such as Fannie Mae and Freddie Mac in addition to U.S. Treasuries. Although government MMMFs usually yield slightly more than pure Treasury MMMFs, it is not clear how long this yield spread will last given the uncertainty over the future status of Fannie Mae and Freddie Mac. Other institutional investors may invest directly in money market instruments, although this requires hiring additional staff to conduct credit analysis and manage the instruments. It is reasonable to estimate the cost to investors of higher management costs and lost yield as approximately half the spread between yield on Treasury and prime MMMFs. At a representative yield spread of 0.24%, this results in an annual cost of decreased yield to investors of between $260 million and $1.17 billion dollars per year.

Table 15
Annual Cost to Investors of Lower Yield from Loss of Institutional Prime Funds
Floating NAV proposal

	Scenario			
	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
	100%	61%	42%	22%
Asset Outflows From Institutional Prime MMMFs $ Billions	$ 974	$ 594	$ 404	$ 214
Half Yield Differential	0.12%	0.12%	0.12%	0.12%
Annual Cost $ Billions	$ 1.17	$ 0.71	$ 0.49	$ 0.26

8. **Impact of Floating NAV on Interest Paid to Bank Depositors**

The large inflow of deposits into the banking system will put downward pressure on the interest that banks will pay their depositors. This will affect all bank depositors, not just those new deposits resulting from the contraction of the institutional prime funds. Although it is difficult to forecast the exact impact on rates, it is clear that there will be some impact. The following table illustrates the impact ranging from a single basis point on the average interest rate paid on all deposits in the most conservative scenario to four basis points in the complete elimination scenario. Reduced interest to depositors will total from $1.1 billion to $4.6 billion per year.

Table 16
Changes in Interest Paid on Bank Deposits
Floating NAV

	Fund Outflow Scenario			
	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
Percent of Institutional Prime Fund Asset Outflows	100%	61%	42%	22%
Decrease in Average Interest Rate Paid on Deposits	0.04%	0.03%	0.02%	0.01%
Substitution Scenario	Decrease in Interest Paid on Deposits ($ Billions)			
Bank	$4.6	$3.4	$2.2	$1.1
Pro-rata w/o Government funds	$4.6	$3.4	$2.2	$1.1
Pro-rata with Government funds	$4.5	$3.3	$2.2	$1.1

9. **Impact on Bank Capital Requirements**

The efficiency of the economy will be harmed by unnecessarily tying up huge amounts of capital in the banking sector. The large contraction in the size of institutional prime money market funds will lead to a large increase in deposits for the U.S. banking system. The banks will have to invest the additional deposits somewhere, and this will increase their total assets, assuming that other bank liabilities remain constant.

This significant increase in the size of the balance sheet of the US banking industry has serious implications for bank capital. Loans to former commercial paper issuers will increase the Risk Weighted Assets ("RWA") of the banks. The volatility of the large institutional deposits will force banks to hold liquid assets against a possible runoff of the deposits, and the banks will not be able to count those

deposits as part of their stable funding, increasing required capital. With respect to the Basel standards for bank capital, the volatile nature of large institutional deposits will adversely affect the banks' Liquidity Coverage Ratios and Net Stable Funding Ratios.[17]

The banks will have to raise large amounts of capital to cover the inflows to their balance sheets, in addition to the capital they will have to raise to comply with the coming Basel III standards. Banks typically hold more capital than the minimum required by bank capital standards. U.S. banks as of 2012 have a capital to assets ratio of approximately 11.3% according to the World Bank.[18] Applying this ratio to the expanded assets on bank balance sheets gives us the following table:

Table 17
Increased Capital Requirements for U.S. Banks
Floating NAV
Capital to Assets Ratio of 11.30%

	Scenario			
	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
Percent of Institutional Prime Fund Asset Outflows	100%	61%	42%	22%
Outflows from Institutional Prime MMMFs ($ billions)	$ 974	$ 594	$ 404	$ 214
Substitution Scenario	Required Additional Bank Capital ($ Billions)			
Bank	$89.5	$54.6	$37.1	$19.7
Pro-rata w/o Government Funds	$69.5	$42.4	$28.9	$15.3
Pro-rata with Government Funds	$54.0	$33.0	$33.0	$11.9

Thus, banks will be required to raise between approximately $11.9 billion and $89.5 billion in new capital to support these net inflows. This is capital that will not be available for other productive uses in the economy, hurting economic growth and efficiency. To put this number into perspective, note that US venture capital firms raised $20.6 billion in 2012.[19] Thus, the amount of capital that will be sequestered by imposing a floating NAV on prime money market funds, even under the most conservative scenario, is comparable to the entire amount of money raised by venture capital firms last year.

[17] For more information, see Bank for International Settlements, *International Regulatory Framework for Banks* (Basel III) http://www.bis.org/bcbs/basel3.htm.

[18] The capital to assets ratio is the ratio of total capital to total assets. Capital is defined here by the World Bank as including common shareholder equity, various reserves, and some subordinated debt issues, so called Tier 1, Tier 2 and Tier 3 capital. For more details see http://data.worldbank.org/indicator/FB.BNK.CAPA.ZS

[19] http://thenextweb.com/insider/2013/01/07/mo-money-less-funds-182-us-based-vc-funds-raised-20-6b-in-2012-most-since-2008/. The National Venture Capital Association reports that VCs invested $27 billion in 2012. http://www.nvca.org/index.php?option=com_content&view=article&id=344&Itemid=103

In addition, this capital comes with an annual cost. Assuming an 8% cost of bank capital, this investment requires annual capital costs for the banks of $1.0 to $7.2 billion.

This analysis does not attempt to quantify the real but large impact on economic growth and employment from the crowding out of other more productive investment, which could be much higher. If one assumes that innovation and growth are the result primarily of venture capital investments, and that the net effect of this sequestration of capital in the banking sector crowds out about one year of venture capital investment, then the switch to a floating NAV could shave about one year of economic growth off of the U.S. economy.

10. **Impact on Interest Costs to Commercial Paper Issuers**

Capital formation will be harmed as the cost of capital will increase for businesses. Prime MMMFs have traditionally been large investors in commercial paper. Over the last 20 years, an average of 41.3% of their assets has been invested in commercial paper.[20] A contraction of the prime MMMF sector will likewise lead to a decline in the commercial paper market and force many commercial paper issuers to access other and more costly sources of funding. Some of the affected issuers will be able to issue commercial paper directly to investors. This is estimated by the institutional assets that move directly from institutional prime MMMFs under the floating NAV proposal to commercial paper as calculated above.

Businesses that cannot access the commercial paper market must pay much higher rates of interest in bank financing for their short-term financing needs, typically the prime rate or more. Currently, one month non-financial commercial paper carries a yield of 0.06% per year, while the prime rate is 3.25%.[21]

The following table demonstrates the impact of the floating NAV proposal on funding costs for commercial paper issuers who will have to switch to other sources of financing. Additional costs to issuers will range from $2.3 billion to $10.5 billion in pretax interest costs per year across the various scenarios.

[20] ICI 2013 Factbook, Table44. Available at http://www.icifactbook.org/pdf/13_fb_table44.pdf
[21] http://www.federalreserve.gov/releases/h15/current/default.htm, accessed August 28, 2013

Table 18
Increase in Pretax Interest Costs to Commercial Issuers
Floating NAV

Scenario	1	2	3	4
	Complete Elimination	Survey-based	Mid-range	Conservative
Asset Outflows From Institutional Prime MMMFs	$ 974	$ 594	$ 404	$ 214
Commercial Paper %	41.30%	41.30%	41.30%	41.30%
Commercial Paper Not Purchased by Fund $ Billions	$ 402	$ 245	$ 167	$ 88
Less: CP Still Directly Issued (Pro-rata without Government Funds Scenario)	$73	$45	$30	$16
Total Contraction in Commercial Paper Market	$329	$201	$137	$72
Prime Rate	3.25%	3.25%	3.25%	3.25%
Commercial Paper Rate	0.06%	0.06%	0.06%	0.06%
Difference	3.19%	3.19%	3.19%	3.19%
Annual Pretax Interest Cost Differential $ Billions	$ 10.5	$ 6.4	$ $4.4	$ 2.3

11. **Cost of System Upgrades**

In addition to the abovementioned costs, converting the IT systems of numerous users to handle floating NAVs to four decimal prices requires quite extensive systems changes. Treasury Strategies Inc. has estimated these as having an initial cost of $1.8 to $2 billion. In addition, Treasury Strategies estimates that the changes will require $200 to $250 million per year for maintenance of the more complicated systems needed to handle floating NAVs.[22]

12. **Total Costs**

The following table subtotals the initial and continuing costs to the economy of the floating NAV proposal that have been quantified in this paper. It does not include the costs that have not been quantified such as lost future economic growth.

[22] See *Costs and Operational Implications of a Floating NAV: Operational Implications of a Floating NAV across Money Market Fund Industry Key Stakeholders*, available at http://www.sec.gov/comments/s7-03-13/s70313-43.pdf .

Table 19
Summary Costs of Floating NAVs
$ Billions

Initial One-Time Costs		
	One-Time Costs $ Billions	
	Low	High
Required Increases in Bank Capital	$ 11.9	$ 89.5
System Upgrades	$ 1.8	$ 2.0
Total Initial Costs	$ 13.7	$ 91.5

Recurring Annual Costs		
	Annual Costs $ Billions	
	Low	High
Reduced Yields to MMMF Investors	$ .26	$ 1.17
Reduced Interest Paid to Bank Depositors	$ 1.1	$ 4.6
Increased Capital Costs for Banks	$ 1.0	$ 7.2
Increased Interest Costs to Commercial Paper Issuers	$ 2.3	$ 10.5
Maintenance Costs for System Upgrades	$ .2	$ .25
Total Recurring Annual Costs	$ 4.86	$ 23.72

13. **Floating NAVs will increase, not decrease, the propensity to run in a crisis**

The argument supporting a floating NAV for institutional funds goes like this:

In the example given in the Proposing release, a fund suffers a loss and that causes the shadow NAV to fall from $1.00 to $.996.[23] The more observant investors notice this loss, and quickly redeem their shares at the rounded value of $1.00 per share. This concentrates the loss on the remaining shareholders. If investors redeem one quarter of the shares, the NAV falls to $.9947, forcing the fund to break the buck. The first investors who got out received $1.00 per share, while the later investors received less. Indeed, in the case of the Reserve Fund, early redeemers did get $1.00 per share. After the fund suspended

[23] Release, 78 FR 36838.

redemptions, the remaining investors eventually received about 99 cents per share.[24] Even though the absolute value of the loss is small, it still creates an incentive to run in a case similar to The Reserve Fund.

The proposing release, however, does not follow its own model to its logical conclusion. When the fund breaks the buck and then prices shares at the penny-rounded $.99, the opposite occurs. The fund is now undervalued (since the shadow NAV is $.9947), so the smart investors should stampede INTO the fund since they can buy $.9947 worth of assets for only $.99. Thus, the run under their theoretical model should be self-limiting and even reverses. That investors are unlikely to run into a fund that has just broken the buck is strong evidence that there are factors other than the shadow NAV at work in determining fund flows.

The floating NAV proponents postulate that a floating NAV will eliminate the incentive to run. Thus, the fund realizes a loss, and the floating NAV drops to $.996. It is now too late to get out at $1.00, so there is no incentive to run. The investors stay put and there is no run. This theory is based on several implicit assumptions. These assumptions include:

1) All market participants believe that the published floating NAVs are accurate.
2) Market participants do NOT believe that there is any serial correlation or momentum in published floating NAVs.
3) Market participants do NOT change their expectations of sponsor skill as a result of the change in floating NAV.
4) Remaining assets can be sold at the prices at which they are currently carried on the books of the fund.
5) Investors will become more "tolerant" of fluctuations in floating NAVs.

There are significant problems with these assumptions.

1) Some market participants are aware of the significant limitations in mechanical pricing models, and thus may question floating NAVs in a time of market panic.
2) Many investors believe that trends continue and that there is momentum in the markets. Given the natural lags that some mechanical pricing models may have in picking up changes in markets, it is natural for traders to expect there to be some lag in the published floating NAVs.
3) Market participants expect a certain level of skill in money managers in analyzing credit and selecting assets. A substantial loss in what is supposed to be a safe product damages the sponsor's reputation for skill, leading investors to take their money elsewhere before more losses occur.
4) As the SEC has noted, funds tend to sell the more liquid assets first when forced to sell.[25] As more assets are redeemed, the remaining assets are less liquid and likely to receive larger haircuts if sold in a distressed market.
5) The stability of share price is one of the most attractive features of MMMFs. The notion that investors seeking a stable-value product will grow to tolerate fluctuations is unlikely. MMMF

[24] Release, footnote 80, 78 FR 36843
[25] Release, 78 FR 36879.

> investors are among the most risk-averse investors around. The floating NAV proposal represents an ambitious attempt to change the behavior of investors during a financial crisis. Such an attempt at changing behavior by getting investors "accustomed to, and tolerant of fluctuations in money market funds NAVs" is unlikely to succeed because it goes against the basic nature of crowd psychology in a panic.[26]

Let us use the same basic fact picture and see what is more likely to happen in real life with a floating NAV when we relax these assumptions:

The fund realizes a loss, and the NAV drops to $.996. Some market participants suddenly realize that this manager is less skilled than other MMMF managers, and they rush to liquidate their remaining shares because the fund now appears less well managed than similar funds. Other market participants suspect that the NAV is overstated, either because of mechanical issues with the technology used by pricing vendors or by the human reluctance to recognize losses. They also rush to liquidate before the NAV falls further. Still others believe that the NAV, even if accurate, will continue to decline as momentum trading continues to push the estimated prices of the fund's assets lower. They view the reduction in NAV as a harbinger of bad times and flee for the safety of other asset classes. Still others sell because they have lost faith in the skill of the fund managers and want to invest with managers that don't make mistakes. The additional redemptions force the fund to sell its less liquid assets at a substantial haircut, leading to even more losses to shareholders.

In short, the investors will be even more likely to run when there is bad news, even with a floating NAV. Indeed, they will be more likely to run with a floating NAV even with small changes in NAV. Consider the following scenario:

The shadow NAV of a constant NAV fund falls to $.999 due to jitters over the credit quality of some assets that lead to unrealized losses. The sponsor views the jitters as unfounded and believes the assets are of good quality. With a penny-rounded fund, the fund continues to transact at $1.00 per share while it patiently looks for a way to bring the shadow NAV back to $1.000.[27] Some investors redeem, but not enough to cause substantial dilution because the fund is widely regarded as well run. Perhaps the problem goes away as the jitters prove unfounded, the securities pay off at maturity, and the NAV returns to $1.000.

Suppose instead that the fund was a floating NAV fund. Now the fall in the floating NAV to $.999 raises serious questions among some investors. They suspect that the model prices of the fund's assets have not yet caught up to the current state of the market, and they believe that the jitters will get worse. They thus pull out because they think the NAV will fall to $.998 or lower. The visible reduction in NAV leads

[26] As stated in the Release, 78 FR 36851: "Investors in money market funds with floating NAVs should become more accustomed to, and tolerant of, fluctuations in money market funds' NAVs and thus may be less likely to redeem shares in times of stress."

[27] The Release (78 FR 36838, footnote 29) wrongly claims that reductions in shadow prices are permanent due to its interpretation of IRS regulations that force funds to distribute virtually all earnings. Fund managers can use gains to offset losses by selling securities upon which there is a temporary gain. For example, there may be some temporary gains on T-bills around the end of a quarter when other investors are eager to acquire T-bills for quarter-end reporting.

others to question the skill of the fund's management and pull out. Others note the outflows of assets from the fund and suspect that the other investors know something is wrong, so even more additional investors pull out.

This is not a farfetched scenario. The Association of Finance Professionals conducted a survey of its members and found that, if a floating NAV were imposed, 17% of the respondents would monitor the floating NAV and sell if the floating NAV dropped below $1.00 per share.[28]

Thus, a floating NAV will likely lead to more jittery investors running from money market funds to avoid small losses in times of uncertainty.

14. **The removal of amortized-cost valuation injects noise into MMMF pricing.**

Currently, MMMFs are permitted under the existing Rule 2a-7 to use amortized cost accounting for valuing the bulk of the instruments held by the funds.[29] In practice, this means that the funds value a security by taking the original purchase price and adding the interest that has been accrued since the purchase. Funds are also required to calculate their "shadow prices" under Rule 2a-7(c)(8)(ii)(A)(1) using "available market quotations (or an appropriate substitute that reflects current market conditions)." The extant rule and the Proposing Release provide little guidance on exactly how "available market quotations" are to be utilized. MMMFs generally use data vendors to provide prices, and those prices are frequently based on models, not actual market transactions or quotations.[30] These pricing models are designed to price thousands of securities quickly and cheaply. For these reasons, the bulk of prime MMMF assets are recorded in their financial statements as Level II assets lacking market prices.[31]

Short-term money market instruments are generally not actively traded like exchange-listed equities. They do not trade on organized exchanges with publicly observable prices. While a single share of stock may change hands hundreds or thousands of times over the life of a corporation, short-term money market instruments may never change hands at all. Many corporations sell their commercial paper directly to investors who hold the paper until maturity. Other commercial paper is sold through dealers, who are also willing to purchase and resell the instruments.

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[28] Association of Finance Professionals, *2013 Liquidity Survey*

[29] The current Rule 2a-7(2) definition states: "*Amortized cost method* of valuation means the method of calculating an investment company's net asset value whereby portfolio securities are valued at the fund's Acquisition cost as adjusted for amortization of premium or accretion of discount rather than at their value based on current market factors." § 270.2a-7(2) The Investment Company Act provides general guidance on the pricing of investment company shares. §2(a)(41)(B) of the Act states: "(i) with respect to securities for which market quotations are readily available, the market value of such securities; and (ii) with respect to other securities and assets, fair value as determined in good faith by the board of directors;"

[30] The Release (78 FR 36837) states "Accordingly, most money market fund portfolio securities are valued largely through "mark-to-model" or "matrix pricing" estimates."

[31] As stated in the Proposing Release "Level 2 measurements include: (i) quoted prices for similar securities in active markets; (ii) quoted prices for identical or similar securities in non-active markets; and (iii) pricing models whose inputs are observable or derived principally from or corroborated by observable market data through correlation or other means for substantially the full term of the security." Release, 78 FR 36942. See also Release, footnote 27 (78 FR 36837).

Indeed, many of the money-market instruments held by MMMFs even lack CUSIPs.[32] The Proposing Release states that approximately 10% of the MMMF securities reported to the SEC on Form N-MFP lacked CUSIP numbers.[33] This is the rationale for the proposal to add the Legal Entity Identifier (LEI) of the issuer to the information required to be reported.[34] If these securities lack CUSIPs, how can there be any kind of market prices, let alone accurate ones? The proposing release presents no evidence, and indeed there is none, that shows that the mechanically mass produced model prices from data vendors produce better estimates of the fundamental value of money market holdings than amortized cost even in normal times, let alone in times of crisis that are most relevant for this proceeding.

The one advantage of model-based pricing over amortized cost is when market interest rates have changed subsequent to the purchase of the asset. This is quite important in the pricing of long-term bonds, which have a very high sensitivity to interest rates, known as duration. A 30 year Treasury bond will generally lose more than 15% of its value when the yield on the Treasury bond increases by 1%.[35] However, the very short duration of money-market instruments reduces their interest rate risk to very small levels. Furthermore, the Fed generally changes short-term rates by small amounts, and usually signals its intentions far in advance. The market generally takes these expected changes into account in setting yields and prices for money market instruments. The short duration of MMMF assets means that the losses from an unexpected increase in rates would be small. A fund with the maximum 45 day weighted average maturity (0.12 years) would lose approximately 3 basis points (.03%) from an unexpected increase of 0.25% in short-term rates.[36] This would decrease the shadow NAV from $1.0000 to $0.9997. Of course, any paper held by the fund would pay off 100 cents on the dollar as long as the issuer does not default, so the only "loss" to investors would be the opportunity loss from not earning the higher yield on newer instruments for a few days.[37] The fund would not realize any losses on any of its holdings unless it was forced to sell assets because net redemptions exceed the normal cash flows from maturing assets. As most funds have somewhat similar investment positions, it is unlikely that investors would stampede from one fund to another in such a situation.

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[32] CUSIP stands for Committee on Uniform Security Identification Procedures. The CUSIP number is a standard identifier number for securities in the United States.

[33] Proposing Release, footnote 755, 78 FR 36941.

[34] Release, 78 FR 36941

[35] For example, as of August 26, 2013, the 2.875% US Treasury Bond that matures on May 15, 2043 was trading to yield 3.813% at an ask price of 83.4063% of face value. (Source:wsjmarkets.com, accessed August 27, 2013). The bond has a modified duration of 18.6 years, meaning it will lose approximately 18.6% according to the duration model when rates rise approximately 1%. This will be offset somewhat by the bond's convexity. Higher coupon bonds will have a somewhat lower modified duration and thus a somewhat lower sensitivity to interest rate changes. A 30 year 5% coupon bond trading at par has a modified duration of about 16 years.

[36] The Fed generally provides ample signaling of forthcoming interest rate changes, giving market participants the opportunity to position themselves accordingly, and these anticipated changes are often visible in the yield curve for short-term rates. It is thus unexpected changes that provide the most risk. The Fed has not raised its target of the Federal Funds rate by more than ¼% at a time since 2000. See http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html for a history of Fed actions on interest rates. Even an unexpected 1% increase in short term rates would only cause a fund with a 45 day (.12 year) maturity to decline in value by 0.12%, a decline of 12 basis points pushing the shadow value to $0.9988. This calculation stems from the well-known duration formula: %Change in Value ≈ - Modified Duration X Change in yield. See Berk, Jonathan and Peter DeMarzo, *Corporate Finance*, page 952.

[37] The Release recognizes that such losses are temporary as long as securities are held to maturity. 78 FR 36838

The use of "market-based" prices may appear theoretically appealing, but identifying the correct "market" price for a non-traded or thinly-traded instrument even in normal times, let alone in times of market stress can be quite difficult. If quotes can even be found, should the firm use the bid price at which they can liquidate the position, the offer or ask price at which they can buy more, the last sale price, the midpoint of the bid and ask, or some combination of the above?

Thus, the widespread use of mechanical pricing models is likely to inject noise, not information, into the published NAVs of floating-NAV MMMFs.

Liquidation values are only relevant for assets likely to be liquidated.

The majority of MMMF assets are held to maturity and unlikely to be sold. Thus, a shareholder's redemption generally does not trigger the sale of an asset under normal conditions, as the normal cash flows from maturing assets (combined with new cash coming into the fund) are usually sufficient to honor redemption requests. The situation is different for mutual funds that hold longer-lived assets, such as stocks. Those assets are likely to be sold at any time, so the market price is highly relevant.

Market prices may not be available in a crisis.

As money market instruments do not trade on exchanges, the market depends on dealers as intermediaries. They are an important part of the financial system, and in normal times their quotes can provide useful information about the value of financial instruments. However, in a financial crisis, dealers will be under considerable financial strain and may not have much, if any, financial capacity to purchase any more money market instruments, even high quality ones. Thus, they may fail to provide bid quotations when asked, or they may provide low bids that reflect not the value of the securities, but their own precarious financial position. Indeed, in the 2008 financial crisis the SEC staff provided no-action relief to the MMMF industry permitting the use of amortized cost instead of market quotes because of the turmoil in the market.[38] The no-action letter was based on representations that "…the markets for short-term securities, including commercial paper, may not necessarily result in discovery of prices that reflect the fair value of securities the issuers of which are reasonably likely to be in a position to pay upon maturity," and "…pricing vendors customarily used by money market funds are at times not able to provide meaningful prices because inputs used to derive those prices have become less reliable indicators of price."

Some market participants will question published floating NAVs in a crisis.

It is likely that some market participants will question the published floating NAVs in the next financial crisis. One of the hallmarks of a financial crisis is a loss of trust in information and institutions that are normally trustworthy, such as rating agencies and pricing vendors. Some market participants are aware of the tendency of humans in trouble to deny that they are in trouble, and thus lose faith in published pronouncements and financial statements. The unexpected financial difficulties facing financial and nonfinancial institutions leads to a loss of faith in the financial infrastructure, leading to a general loss of confidence in everything. A flight to quality is inevitable.

[38] Release, footnote 391, 78 FR 36887. The No Action Letter can be found at http://www.sec.gov/divisions/investment/noaction/2008/ici101008.htm.

The combination of noisy NAVs from mechanical pricing models and a lack of confidence in published NAVs during a financial crisis have serious consequences for the likelihood of a run on MMMFs. In a penny rounding world, the only thing that can lead to breaking the buck in a crisis is the unexpected default by a large issuer leading to a realized loss. As demonstrated from historical experience, this is an extremely low probability event. However, in a floating NAV world, skepticism over the true NAV may cause investors to run at the first sign of a decline in the published floating NAV, as they would expect the published floating NAV to continue dropping.

15. **Summary and Conclusions**

The proposal to require institutional prime money market funds to switch to floating NAVs will fail to achieve its primary objective of preventing runs on MMMFs in a financial crisis. Indeed, floating NAVs will actually increase the likelihood of runs in the next crisis by injecting noise into the system.

Institutional prime money market funds contain nearly $1 trillion in assets. The initial upfront costs of a floating NAV range from nearly $12 billion to over $90 billion, and the ongoing annual costs range from nearly $5 billion to over $23 billion.

Impact on efficiency

The floating NAV proposal imposes significant costs on the economy with no corresponding benefit. This results in a loss of efficiency as resources are diverted away from productive uses and towards unproductive uses. The elimination of a convenient cash management product for investors will cause many investors to search for less convenient and less efficient substitutes. Investors are likely to either a suffer a yield differential form using other higher cost and lower yielding alternatives, or else suffer increased risk from riskier investment alternatives. The flow of deposits into the banking system will depress yields paid to all depositors, not just former MMMF investors. Likewise, the elimination of a convenient and low-cost funding source for businesses will force them to use less efficient and more expensive substitutes.

The floating NAV proposal increases the risk of runs on money market mutual funds and the banking sector and thus increases systemic risk, a further drag on efficiency.

Impact on competition

The massive outflow of assets from institutional prime money market funds that will occur under a floating NAV will lead to a serious shrinkage of the institutional prime money market fund sector. The smaller assets under management will leave many funds so small as to be economically unviable, and the number of prime institutional MMMFs will shrink from anywhere between 27% and 100%. This will result in less competition and higher fees. Furthermore, the elimination of competition between banks and MMMFs will also result in less choice and higher costs to investors.

Impact on capital formation

The floating NAV proposal will have two major deleterious impacts on capital formation. First, the flow of assets into the banking sector will result in a massive increase in capital requirements for the banking sector ranging from $11.9 billion to $89.5 billion. This sequestration of capital in the banking sector will divert capital away from other uses, and thus reduce economic growth.

As institutional prime MMMFs are important purchasers of commercial paper, the contraction in the commercial paper market will force issuers into borrowing through other and more expensive channels. This will cause an annual increase in interest costs to borrowers of between $2.3 billion and $10.5 billion. This will increase the cost of capital to the private sector and thus lead to a decrease in investment and hence economic growth.