MONEY MARKET FUND REFORM FROM A RISK MANAGEMENT PERSPECTIVE

Stephen A. Keen
Reed Smith LLP

Outline for
2013 Mutual Funds and Investment Management Conference

Money market fund regulation is fundamentally an exercise in risk management. This may be due to the ease with which the objective of a money market fund—provision of daily liquidity at a stable net asset value—is translated into a simple risk: the possibility that the fund may fail to maintain a stable net asset value (known as "breaking a dollar"). Generally, two strategies may be employed to manage risk: first, to reduce the probability of a risk and, second, to limit the consequences of a risk. Another basic principle of risk management is that you cannot eliminate the intrinsic risks of an activity.

When viewed from a risk management perspective, the history of money market fund regulation (from the original exemptive orders, to the adoption of Rule 2a-7 in 1983 and the subsequent amendments thereto) reflects a continual expansion and refinement of risk controls. Our firm takes this perspective when interpreting Rule 2a-7: consistently favoring the interpretation that reduces the probability or consequences of a fund breaking a dollar. We also believe that risk management provides a useful basis for evaluating proposed reforms to money market fund regulations. This approach promotes clarity by forcing identification of the risk(s) a reform is intended to manage, and whether the reform is intended to reduce the probability of the risk, reduce its potential consequences, or both.

This outline systematically reviews the risk controls currently imposed by Rule 2a-7[1] and assesses whether proposed reforms might enhance these controls. Controls intended to limit the probability of risks are reviewed first, followed by a review of controls intended to limit the consequences of risks, both to a money market fund's shareholders and to other money market funds. Before reviewing possible enhancements, however, we begin by explaining why forcing funds to float their net asset values ("NAVs") should be a "non-starter" from a risk management perspective.

I. RISK MANAGEMENT AND "FLOATING" NAVS

From a risk management perspective, proposals to force money market funds to "float" their NAVs should not be regarded as "reforms." Floating the NAV would force money market funds to break a dollar, thus assuring the event regulations hitherto sought to prevent. This is particularly true of the first alternative proposed by FSOC, which would

[1] To maintain a focus on risk management and avoid bogging down in regulatory details, this outline reviews the requirements of Rule 2a-7 at a general level. It ignores, for the most part, exceptions to general requirements that apply to particular types of funds (such as single state funds or other tax exempt funds) or securities (such as asset backed or conduit securities). This outline assumes a basic familiarity with Rule 2a-7 and the terms defined in paragraph (a) thereof, and therefore does not provide citations for specific requirements.

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magnify trivial fluctuations in the portfolio's value to assure fluctuations in the fund's NAV.[2] It was Orwellian for the former Chairman of the SEC to refer to this proposal to abandon the principle objective of 40 years of money market fund regulation as an effort to "shore-up" the funds.[3] In reality, the floating NAV proposal would truncate the objective of a money market fund to the mere provision of daily liquidity.

The Board of the International Organization of Securities Commissions' "Policy Recommendations for Money Market Funds" (FR07/12, Oct. 2012) illustrates the cognitive dissonance that results from treating a floating NAV as a "reform" proposal. Most of the substantive recommendations address standard risk controls already imposed by Rule 2a-7 on U.S. money market funds. *E.g.*, Recommendation 2 ("Specific limitations should apply to the types of assets in which money market funds may invest and the risks they may take."); Recommendation 6 ("Money market funds should establish sound policies and procedures to know their investors."); Recommendation 7 ("Money market funds should hold a minimum amount of liquid assets to strengthen their ability to face redemptions and prevent fire sales."); Recommendation 8 ("Money market funds should periodically conduct appropriate stress testing."); and Recommendation 13 ("money market fund documentation should include a specific disclosure drawing investors' attention to the absence of a capital guarantee and the possibility of principal loss."). Recommendation 10, in contrast, provides that: "Regulators should require, where workable, a conversion to floating/ variable NAV." IOSCO believes that:

> A conversion to floating NAV money market funds … will allow fluctuations in share prices as it [*sic*] is the case for any other collective investment scheme, improving investors' understanding of the risks inherent to these funds and the difference with bank deposits, and will reduce the need and importance of sponsor support. (p. 15)

IOSCO appears oblivious to the paradox that the more successful the implementation of the other Recommendations, the less fluctuation in share prices investors will experience upon implementation of Recommendation 10. To state it from the opposite perspective, if regulators convert money market funds to a floating NAV, regulators would no longer need to limit the volatility of their portfolios. If money market funds become like "any other collective investment scheme," they should no longer need greater risk controls than "any other collective investment scheme."

Any money market fund that complies with Rule 2a-7 seeks to maintain a stable NAV. Even if the fund does not use the amortized cost or penny rounding method, and calculates a $10 share price to the nearest penny, by complying with Rule 2a-7 the fund will necessarily tend to stabilize its NAV at $10. Proposing to force the NAVs of money market funds to fluctuate would thus subvert, rather than reform, Rule 2a-7.

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[2] Proposed Recommendations Regarding Money Market Mutual Fund Reform, 77 Fed. Reg. 69455 (Nov. 19, 2012). Alternative One would have money market funds calculate an NAV of $100 to the nearest penny.

[3] Changes to Money Market Funds Stall, NY Times (Aug. 22, 2012), http://www.nytimes.com/2012/08/23/business/sec-calls-off-vote-on-fund-regulation.html.

II. MINIMIZING THE RISK OF BREAKING A DOLLAR

This section reviews the current controls for each specified risk and assesses the prospects for enhanced controls.

A. Interest Rate Risk. This is the risk that changes in market yields (as reflected in the Treasury yield curve, for example) will produce material changes in the portfolio's value. It includes general changes in risk spreads (such as credit spreads) but not security specific changes (which normally reflect specific credit risks).

1. *Final Maturity Limit.* Money market funds cannot acquire securities with remaining maturities of greater than 397 days (a period of 13 months including a leap day). Maturity is measured by the date that the last payment of principal is due, whether fixed by the terms of the instrument or upon demand after not more than 30 days' notice by the holder. Generally, the payment obligation must be unconditional, although demand features may terminate if the risk of termination is minimal.

   Rule 2a-7 uses maturity as a proxy for interest rate duration. This is why the rule treats variable and floating rate securities as maturing when their interest rates are reset to current market levels. Except for government securities, a fund may rely on interest rate adjustments only if the security matures (either by its terms or on demand) within 397 days.

   Maturity serves as a reasonable proxy for the duration of a short-term security. Many money market instruments are discount obligations, the durations of which are equivalent to their maturities. A short term limits the significance of discounting periodic payments to present value and of convexity. The approach is conservative insofar as it does not factor in any periodic payments which would reduce the effective duration of an instrument.

2. *Weighted Average Maturity ("WAM") Limit.* While Rule 2a-7 allows the maturity of individual instruments to extend to 397 days, the dollar weighted average maturity of the portfolio cannot exceed 60 days. As importantly, the fund must determine that its WAM is "appropriate to its objective of maintaining a stable net asset value per share." The SEC permits funds to treat periodic fixed principal payments as maturities for purposes of calculating a portfolio's WAM. As this is commonly referred to as a security's weighted average life, we do not use that term to describe the next risk control.

3. *Modified WAM Limit.* Treating a variable or floating rate security as maturing on the date of its next interest adjustment is appropriate for

interest rate duration, but underestimates the credit duration or other spread durations that may affect the instrument's market value. To account for this risk, Rule 2a-7 was amended to 2010 to require a fund to recalculate its WAM without regard to the interest rate adjustments on variable and floating rate securities. Modified WAM cannot exceed 120 days. This limits the potential change in the value of the portfolio because of changes in market spreads or other conditions that cause a variable or floating rate security no longer to approximate its amortized cost whenever its interest rate is adjusted.

Assessments of Further Enhancements: As all of these controls are defined by a maximum number of days, the obvious enhancement would be to shorten the periods. Further reductions are unlikely to yield any significant decrease in interest rate risk, however. For example, a recent SEC study found "the probability of breaking the buck for a money market fund with a WAM of 60 days is close to zero."[4] This is consistent with the finding that the 75th percentile for WAMs never exceeded 60 days from 1994 to early 2010, even though Rule 2a-7 permitted WAMs up to 90 days.[5] It may also be noteworthy that the maximum permitted WAM for a AAA rated money market fund has always been 60 days. This suggests a consensus that 60 days is the most appropriate limit for maintaining a stable NAV.

Reducing the maximum maturity for individual securities from 397 days has not been widely discussed as a reform alternative; although the maximum maturity for second tier securities was reduced to 45 days in 2010. Reducing the maximum maturity for first tier securities would prevent money market funds from serving important sectors of the money market, such as municipal anticipation notes (which generally have maturities of one year and trade dates as much as one month in advance of their issuance), or one-year Treasury bills and certificates of deposit. If the average level of interest rate risk (as controlled by a fund's WAM) remains unchanged, it is doubtful that shortening the maturity of individual securities (making the portfolio less barbelled) would generate a reduction in risk sufficient to justify the resulting elimination of these traditional investment opportunities.

The Modified WAM limitation took effect in May 2010, so we have little experience with how funds use this to manage their interest rate risk. According to Crane Data, as of January 31, 2013, the 75th percentile Modified WAM for taxable money market funds was 73 days and the 90th percentile was 89 days, which suggests that a reduction from 120 to 90 days may not be unduly restrictive. Reducing the Modified WAM also reduces the time needed

[4] Report of the Division of Risk, Strategy, and Financial Innovation, dated November 30, 2012, Responding to Questions Posed by Commissioners Aguilar, Paredes and Gallagher Regarding Money Market Funds (the "RSFI Report"), available at http://www.sec.gov/news/studies/2012/money-market-funds-memo-2012.pdf., at 30.

[5] *Id*. at 20, Figure 6.

to recover the value of investments through maturity (rather than by selling securities in the secondary market), which may be significant if a fund is forced to liquidate after breaking a dollar. Interest rates have been stable since the Modified WAM limit took effect, so it would be worthwhile to wait to consider tightening this control until we can analyze fund behavior and performance during periods of higher and more volatile interest rates.

B. Credit Risk. This is the risk that an instrument will not pay principal and interest when due. It also includes the risk that an instrument will lose value if the market becomes concerned about the creditworthiness of its issuer or guarantor.

1. *Eligible Security Requirements.* The 397-day limit on maturity operates to control credit as well as interest rate risk. The shorter the maturity of an obligation, the less time there is for something unexpected to happen and cause a default. This is why the definition of "eligible security" in Rule 2a-7 requires a first tier security to mature in 397 days or less, and second tier securities must mature in 45 days or less.

   The other part of the definition of eligibility relates to an instrument's credit rating or its equivalence to other rated instruments. Instruments rated (or determined equivalent to other instruments rated) in the highest short-term credit rating category by an NRSRO are first tier securities; those rated (or determined equivalent to other instruments rated) in the next highest category are second tier securities. Gradations and subcategories of ratings are disregarded and, when more than one NRSRO rates the instrument, the lower of the two highest ratings determines which tier applies. Money market funds cannot acquire securities rated (or determined equivalent to other instruments rated) below the second tier and cannot acquire a second tier security if the acquisition would cause the fund's holdings of second tier securities to exceed 3%.

   A downgrade that changes a security from first to second tier triggers a review of whether it continues to present minimal credit risk. A fund must dispose of a security downgraded below second tier unless otherwise directed by its board of directors or trustees (its "Board").

2. *Minimum Credit Risk.* Rule 2a-7 has the effect of requiring the fund's manager to perform an independent credit analysis of each portfolio security. A money market fund cannot purchase a security unless the manager determines that it presents minimal credit risks. The fund must also dispose of any security if the manager determines it no longer presents minimal credit risks.

Assessments of Further Enhancements: The 2010 reforms included enhanced oversight by the Board of the use and reliability of NRSRO ratings. The Dodd-Frank Wall Street Reform and Consumer Protection Act required, however, the SEC to remove all references to NRSRO ratings from its regulations. This prevented the SEC from implementing the enhanced NRSRO oversight requirement. Eventually, this will also force the SEC to remove references to credit ratings from the definition of eligible securities. So far, no one has suggested an alternative objective measure of credit risk, so this will mean a reduction in credit controls over money market funds.

Raising credit standards by prohibiting second tier securities was already proposed in connection with the 2010 reforms. Objections from some managers and from issuers of second tier commercial paper led to a compromise in which the SEC lowered the aggregate permitted amount of second tier securities from 5% to 3%, shortened the permitted maturity to 45 days and tightened the diversification requirement.

The eventual removal of references to NRSRO credit ratings will make it more difficult to define the difference between first and second tier securities. This has led the ICI and others again to propose prohibiting the acquisition of second tier securities, while other comments have proposed eliminating any distinction between first and second tier securities. Given the very small amount of second tier securities currently permitted (a fund cannot hold as much in second tier securities in the aggregate as it can in securities of a single first tier issuer), further limitations on holdings of second tier securities are unlikely to reduce risk to any appreciable degree. Eliminating any distinction between first and second tier securities could increase credit risk, however.

One could try to eliminate credit risk altogether by limiting the portfolio to “risk free” securities, meaning U.S. Treasury obligations and, possibly, other government securities as defined by the Investment Company Act of 1940 (the “Investment Company Act”). The repeated battles over the federal debt ceiling, particularly in light of the recent crisis regarding Euro denominated sovereign debt, raise serious questions as to whether any securities should be regarded as free from the risk of default. Moreover, this extreme approach to credit control might result in the transfer of over $1 trillion from the private credit to the federal credit sector. Most economists do not regard this form of “crowding out” of private financing by public debt as healthy for economic growth.

The ICI’s Money Market Working Group included “Best Practices for Determining Minimal Credit Risks under Rule 2a-7” as an appendix to its March 17, 2009, report on proposed money market fund reforms. Codification of these practices might enhance credit controls. Historically, managers have successfully employed a wide range of practices in analyzing, monitoring and managing credit risks. The best approach to credit risk may therefore be the same as the approach taken to regulatory compliance: managers should be left

free to tailor a process that reflects their management philosophy, culture and organization.

The difficulty of further reducing credit risks in money market fund portfolios has led some government officials and academics to call for funds to maintain some form of subordinated capital that would reduce the credit risk of ordinary shareholders. An analysis of the merits of capital for money market funds and of the legal and operational feasibility of a capital requirement would require a separate outline. Current economic circumstances, however, render these capital proposals moot. According to the ICI's 2012 Investment Company Fact Book,[6] total assets in prime money market funds at the end of 2011 were $1.435 trillion (Table 37). During that year, taxable money market funds (which include government as well as prime funds) paid total dividends of $4.9 billion (Table 42). At the conference last year, one of our slides showed total fees collected in 2011 from all types of money market funds at $4.7 billion. This means that total earnings from shareholders and managers of prime money market funds in 2011 were less than $9 billion.

One percent of $1.435 trillion is $14.35 billion. Thus, capital equal to one percent of prime fund assets at the end of 2011 would represent more than 160% of what shareholders and managers earned in that year. Lehman commercial paper represented more than 1.5% of the Reserve Primary Fund's assets immediately prior to Lehman's bankruptcy, so a 2% capital cushion would have been needed to cover the full value of this position. FSOC has proposed recommending a 3% capital requirement for non-treasury funds which would represent about five years of total earnings by shareholders and managers at 2011 levels.

Given that managers waived more fees than they collected in 2011, it is not plausible to assume that shareholders will absorb any of the cost of a capital cushion. Funds also lack the market power to pass on capital costs to borrowers. If managers could retain assets while paying lower yields or charging higher interest, they would not have waived so much of their fees.

This implies that the cost of any capital cushion will fall on the manager of a prime money market fund. These managers plainly do not earn enough to fund a capital requirement out of their revenues. Even if we assume that prime fund managers could somehow borrow enough to fund FSOC's 3% capital cushion at the current prime rate of 3.25% (a wildly optimistic assumption), the interest expense would be $1.4 billion a year. This is more than 30% of the fees collected by prime fund managers in 2011. There is no way that managers could incur this expense and still profit from managing their funds. Just as shareholders will not invest in a prime fund unless they will receive some yield, managers will not manage funds unless they receive some profit.

[6] Available at http://www.ici.org/pdf/2012_factbook.pdf.

These numbers illustrate in theory what anyone familiar with the money market funds has long understood in practice: the amount of capital that managers can currently afford will not reduce credit risk significantly, and the cost of capital needed to provide meaningful credit protection would drive many managers out of the industry. The low risk/low cost business model of money market funds is incompatible with a capital requirement.

C. Liquidity Risk. The risk that, in order to satisfy shareholder redemptions, a money market fund must sell portfolio securities at (a) a material net loss that (b) is unlikely to be offset in the near term by realized gains. In extreme cases, as happened to the Reserve Primary Fund, the fund may be unable to generate sufficient cash to satisfy redemptions through portfolio sales or borrowings.

1. *"Know-Your-Customer" Procedures.* Technically, Rule 2a-7 requires a money market fund to "hold securities that are sufficiently liquid to meet reasonably foreseeable shareholder redemptions … and any commitments the fund has made to shareholders." A manager cannot "reasonably foresee" redemptions without knowing the potential liquidity demands of its shareholders. Hence, this provision forms the basis for requiring a "know-your-customer" process for money market funds, just as the minimal credit risk determination forms the basis for requiring a credit review and approval process.

This control resembles the requirement that a fund's WAM must be "appropriate to its objective of maintaining a stable net asset value per share" and that the credit risk of each portfolio security must be "minimal," insofar as it defines the risk objective without setting a quantified limit. It places on the manager responsibility for anticipating the potential demand for liquidity and assuring a sufficient supply of liquid securities to meet the demand.

2. *Daily/Weekly Liquid Assets Requirements.* These requirements control liquidity risk by setting floors for "daily" and "weekly" liquid assets. With important exceptions discussed in the next paragraph, the concept is to have the capacity to raise liquidity in one business day (in the case of daily liquid assets) or five business days (in the case of weekly liquid assets) without selling any securities. This allows a money market fund to absorb redemptions of at least 10% of its shares in a single day, or 30% in any one-week period, without realizing losses. Thus, daily liquid assets must come due on the next business day or be payable within one day after demand for payment; and weekly liquid assets must come due within five days or be payable on demand without more than five business days' notice.

There is an exception to the "liquidity without sale" concept for U.S. Treasury securities (which qualify as daily liquid assets) and federal agency discount notes with remaining maturities of 60-days or less

(which qualify as weekly liquid assets). The exception is based on the historical liquidity of the secondary market for these securities. Even during the height of the financial crisis in 2008, the markets for these securities remained liquid. Moreover, during a flight to quality in the market, these securities tend to trade at premiums to their amortized cost.

3. *Limit on Illiquid Securities.* Money market funds may not acquire illiquid securities in excess of 5% of their total assets. A security is "illiquid" if it cannot be disposed of for approximately its shadow price within seven calendar days. Illiquid securities present a unique risk because, as shares are redeemed, the remaining shares become increasingly concentrated in any securities that the fund cannot dispose of at a reasonable price. The 5% limit minimizes the risk without eliminating it.

4. *Delayed Settlement and Redemption in Kind.* Section 22(e) of the Investment Company Act permits any mutual fund to delay the payment of redemption proceeds for a period not to exceed seven days. The Investment Company Act's definition of "redeemable security" contemplates that a redeeming shareholder may "receive approximately his proportionate share of the issuer's current net assets"[7] in lieu of "the cash equivalent thereof." Rule 18f-1 allows a fund to file an irrevocable election "committing itself to pay in cash all requests for redemption by any shareholder of record, limited in amount with respect to each shareholder during any ninety-day period to the lesser of (i) $250,000, or (ii) 1% of the net asset value of such company at the beginning of such period." This allows a fund to redeem both in-kind and in-cash without violating limitations on the issuance of senior securities.

   Delaying settlement provides a money market fund with more time to find buyers for its securities and thus minimize losses. During the financial crisis, a Putnam money market fund delayed redemptions until it could combine with a Federated money market fund that had sufficient liquidity to satisfy the Putnam fund's outstanding redemption requests. Other funds used the threat of redemption-in-kind to deter redemptions, although we are not aware of any funds engaging in redemptions in kind without the shareholder's consent.

   It is important to note that 22(e) permits delays only in the payment of redemptions, not in the calculation of the redemption price. Without relief from the SEC, a fund must still calculate a price once a day and

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[7] We have been frequently asked how to value securities for purposes of redemptions in kind. We believe that the value must be "computed by use of the Amortized Cost Method or the Penny-Rounding Method," as required by Rule 2a-7 "for purposes of distribution, redemption and repurchase" regardless of whether the redemption is in-cash or in-kind.

process redemption orders at the next calculated price in compliance with Rule 22c-1.

Assessments of Further Enhancements: Although successful management of a money market fund has always required some process for monitoring and managing liquidity risk, liquidity controls were not included in Rule 2a-7 until the 2010 reforms. This means that it is probably too early to determine the best practices for know-your-customer procedures. Moreover, like credit procedures, funds need to tailor know-your-customer procedures to their particular liquidity risks. A fund sold directly to retail customers will require different procedures from a fund used primarily for broker sweep or a fund used primarily to manage cash collateral. Therefore, imposing specific know-your-customer requirements is unlikely to be effective for all money market funds.

Figure 7 of the RSFI Report shows that, since March 2011, mean daily liquid assets in prime money market funds have exceeded 20% of total assets and frequently risen to 30% (three times the required amount), while mean weekly liquidity assets have constantly exceeded 40% of total assets and frequently risen above 50%. Even the 25th percentile has consistently stayed between 15% and 20% for daily liquid assets and 35% and 40% for weekly liquid assets. This might suggest that the liquidity floors could be increased without significantly impairing fund performance.

Raising the liquidity floors would probably be premature, however. Since the liquidity floors were imposed, money market funds have operated in extraordinary market conditions. During these years, there has not been much difference (in basis points) in the returns on daily, weekly, and longer-term instruments. It would be appropriate to wait to see how the liquidity floors operate during more normal market conditions before trying to adjust them.

Reformers should also keep in mind that most managers will maintain a buffer between the regulatory limit and their funds' holdings of daily and weekly liquidity assets. Some funds even treat the required amounts of daily and weekly liquid assets as a reserve, and manage their actual cash flows independently of these amounts. It is therefore not surprising that a 10% floor produces regular holdings of 15% to 20%. Raising liquidity floors may thus result in managers, in practice, overshooting the intended mark.

Regarding illiquid securities, the SEC originally proposed to eliminate these entirely from money market funds. This would have created a chicken and egg dilemma, however, as many types of money market instruments began as illiquid securities before gaining widespread market acceptance. In order to allow for financial innovations that could reduce the overall risks of money market funds, it is necessary for funds to acquire novel securities before they become liquid. The SEC therefore allowed funds to acquire a *de minimis* amount of illiquid securities.

Lengthening the period that a fund can delay redemption payments will probably do little to mitigate liquidity risk. If markets are so disrupted that a fund cannot find buyers for portfolio securities in a week's time, it is unlikely that the fund could do so given a more extended period. So called "gating" proposals, which would actually suspend the right to redeem (either entirely or in excess of some limit), could give a fund's Board more time to determine whether there is an alternative to breaking a dollar without allowing redemptions that might create a "first mover advantage" for shareholders.

Charging a redemption fee that compensates the fund for losses incurred to satisfy redemptions could be an effective means of shifting the cost of redemptions to redeeming shareholders. Fixing an appropriate fee *ex ante* is difficult because the amount of potential losses cannot be predicted. Determining the fee *ex post* is complicated and does not permit the fund to disclose the amount of the redemption fee in advance. There is also the question of why a redemption fee would be a more advantageous method of addressing liquidity risk than simply breaking a dollar.

Proposals to charge redemption fees in excess of reasonably anticipated losses from redemptions are similar to proposals to require floating NAVs in that they would subvert the essential nature of a money market fund. Mutual funds are defined in the Investment Company Act as funds offering "redeemable securities." To offer a redeemable security, and then impose a redemption fee designed to deter redemptions, seems contradictory. Even if it would be better for the money market if redemptions were checked during a financial crisis, it is hard to see why money market fund shareholders should be singled out for this treatment, while other investors are left free to pursue their own interests.

D. Currency Risk. Money market funds may only acquire instruments denominated in U.S. dollars, so foreign exchange fluctuations will not affect them. The most significant currency risk faced by money market funds involves issuers of nominally U.S. dollar denominated securities, especially special purpose vehicles issuing asset backed securities, that hold assets primarily denominated in foreign currencies. These issuers are dependent on their ability to exchange payments on their assets for dollars in order to meet their obligations. Assessment of this exchange risk is typically included in the credit analysis of the instrument. Rule 2a-7 does not permit the issuer to condition its obligations on the performance of its foreign exchange contracts or its ability to exchange currency for U.S. dollars.

Assessments of Further Enhancements: This control has been very effective, insofar as no money market fund has ever threatened to break a dollar due to currency risk. No one has proposed any reforms of this control.

E. Board Oversight. The Board oversees the manager's risk management process and the extent of risks taken by the fund. Board oversight can act as a control on each of the risks previously discussed.

1. *Monitoring the Shadow Price.* Under Rule 2a-7 the Board must "Adopt written procedures reasonably designed, taking into account current market conditions and the fund's investment objectives, to stabilize the money market fund's net asset value per share …." The procedures must include the periodic calculation of the fund's shadow price and review by the Board of the deviation between the shadow price and the fund's stable NAV.

2. *Stress Testing*. The Board must also adopt stress-testing procedures. Stresses tested must include:

   - A change in short-term interest rates;
   - An increase in shareholder redemptions;
   - An adverse change in the ability of the issuer of a portfolio security to meet its short-term financial obligations or a default on portfolio securities; and
   - The widening or narrowing of spreads between yields on an appropriate benchmark the fund has selected for overnight interest rates and commercial paper and other types of securities held by the fund.

   The Board must review the stress test results at each meeting and more frequently if the tests show the fund is under increased stress.

3. *Oversight of Delegated Responsibilities.* There are 16 determinations required by Rule 2a-7 (such as determination of minimal credit risk or comparability of an unrated security to rated securities) that a Board may delegate to the fund's officers or to its adviser. The Board must "establish and periodically review written guidelines … and procedures under which the delegate makes such determinations." The Board must also "take any measures reasonably necessary … to assure that the guidelines and procedures are being followed."

Assessments of Further Enhancements: In our view, the possibility of enhanced risk oversight through improved training and support of independent fund directors and trustees has been overlooked. The SEC acts as though it can interact with directors and trustees only through regulations and enforcement actions. This contrasts with advisor and fund compliance officers, for example, for whom the SEC regularly sponsors conferences to provide training and keep them up to date on regulatory developments.

The SEC's blind spot regarding the potential benefits of cooperative interaction with independent directors is not limited to money market funds, or even to investment companies. Reforms to improve a director or trustee's ability to oversee risk are therefore unlikely to emerge until the SEC recognizes its role in making such improvements.

III. MITIGATING THE CONSEQUENCES OF BREAKING A DOLLAR

Although the bulk of Rule 2a-7 is intended to limit the risks taken by money market funds, some provisions are intended to limit the potential consequences of such risks. This section of the outline first reviews controls limiting the consequences to shareholders and then reviews controls limiting the consequences to other money market funds (and, thus, to the money market in general).

A. Mitigating Consequences to Shareholders

1. *Diversification.* Diversification mitigates the potential consequences of a default or other adverse event affecting a portfolio security. In the most general terms, Rule 2a-7 prohibits a money market fund from acquiring a first tier security if the acquisition would result in the fund holding more than 5% of its total assets in the issuer's obligations. (Issuers of second tier securities are limited to 0.5%.) Separate legal entities are treated as separate issuers, even if they are commonly owned or controlled.

First tier guarantees and demand features of securities provided by a single company are permitted up to 10% of a money market fund's total assets. Securities issued by the company, as well as those subject to its guarantees and demand features, count towards this limit. Securities subject to third-party guarantees (where the guarantor is not affiliated with the issuer) do not count towards the issuer's 5% limit. Funds may exceed the 10% limit with respect to third-party guaranties and demand features provided not more than 25% of their total assets are invested in securities issued by or subject to guarantees and demand features provided by companies in excess of the 10% limit (sometimes called the "25% basket").

The reason that Rule 2a-7 permits funds to invest a larger percentage of total assets in securities subject to guarantees and demand features is that these are secondary sources of repayment. The primary obligation to repay the security at maturity, and in some cases on demand, lies with an issuer that is financially independent of the guarantor or demand feature provider. A default by or the insolvency of the provider of a guarantee or demand feature may therefore not result in any loss to the fund, provided the issuers of the underlying securities still perform their payment obligations.

> Government securities are not limited by the diversification requirements. Repurchase agreements collateralized fully by government securities and refunded securities are treated like government securities for purposes of diversification. Shares of other money market funds are also unlimited, so long as they operate in compliance with Rule 2a-7's diversification requirements.
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> Rule 2a-7 determines compliance with diversification requirements at the time a fund acquires a security. Money market funds are not required to sell portfolio securities or exercise demand features to come back into compliance with diversification requirements when they experience net redemptions.

Assessments of Further Enhancements: Three factors are essential to any assessment of enhanced diversification requirements for money market funds. First, increased diversification potentially increases the risk of breaking a dollar. To illustrate with an extreme example, if the SEC required money market funds hold to a capital-weighted basket of all outstanding commercial paper (like an index fund), the funds would be maximally diversified, but they would all be exposed to any subsequent commercial paper default. Any increase in diversification must necessarily reduce, to some extent, the effectiveness of the credit risk controls discussed in the previous section.

Second, the diversification requirements are largely a result of how Congress defined a "diversified company" in 1940, rather than a result of a methodical risk analysis. Section 5(b)(1) of the Investment Company Act defines a "diversified company" as an investment company:

> meet[ing] the following requirements: At least 75 per centum of the value of its total assets is represented by cash and cash items (including receivables), Government securities, securities of other investment companies, and other securities for the purposes of this calculation limited in respect of any one issuer to an amount not greater in value than 5 per centum of the value of the total assets of such management company and to not more than 10 per centum of the outstanding voting securities of such issuer.

The 5% limit and exemption of government securities and shares of other money market funds in Rule 2a-7 derives from Section 5(b)(1), and the "25% basket" derives from limitation of Section 5(b)(1) to 75% of total assets, leaving the remaining 25% unrestricted.

Rule 5b-2(a), adopted in 1945, provides that:

> a guarantee of a security shall not be deemed to be a security issued by the guarantor: Provided, That the value of all securi-

> ties issued or guaranteed by the guarantor, and owned by the management company, does not exceed 10 per centum of the value of the total assets of such management company.

This rule was the basis for the 10% limit on guarantees and demand features in Rule 2a-7.

Finally, the diversification requirements are already the most complicated provisions of Rule 2a-7, perhaps the most complicated non-tax provisions in all of mutual fund regulation. Further enhancements may be costly, insofar as they require larger or more granulated data bases and more sophisticated compliance algorithms. Greater complexity also increases error risk.

The absence of a methodological basis for the current diversification limits suggests that this would be fruitful area for further analysis and enhancement. On the other hand, while stricter diversification requirements could reduce the consequences of a fund breaking a dollar, they have the potential for increasing the chances of a fund breaking a dollar. Finally, there must be some practical limit to how complicated Rule 2a-7's diversification requirements can become.

The following examples of enhanced diversification requirements illustrate the interaction of these factors.

- Lower Percentages. Lowering the permitted percentage from 5% to 4% (or from 10% to 8% for guarantees and demand features) will not pose any operational problems; it only requires a change in the coefficients of existing compliance systems. If a review of a representative sample of funds over an extended period (ideally several decades) shows a widespread and consistent practice of greater than 5% (or 10%) diversification, adopting a corresponding limit will not materially increase credit risk and will prevent risk taking by outliers.
- Exercise of Demand Features. A fund may exceed the diversification limit if its total assets decrease (normally through net redemptions) after the acquisition. The security's remaining maturity defines the maximum amount of time that the fund might exceed the diversification limit. (A fund may also come back into compliance with the limit if its total assets increase.) Given that a money market fund's securities must mature, on average, within 120 days, allowing the security to exceed the limit until it matures is probably a better course than forcing the disposition of amounts in excess of the limit, which may cause the fund to realize losses.

  A security with a demand feature, however, may have a maturity well in excess of 120, or even of 397, days. As Rule 2a-7 does not treat the failure to exercise a demand feature as an acquisition, a fund can hold a security in excess of the 25% basket for guarantees and demand fea-

tures indefinitely, with the only consequence being that it cannot add other securities to the basket. Requiring funds to exercise a demand feature that has continuously exceeded the diversification limits for a specified number of days would be more consistent with the treatment of securities without demand features. Moreover, a fund will not realize a loss upon exercise of a demand feature. This enhancement would increase the complexity of Rule 2a-7.

- Consolidated Limitations. The survey of minimal credit risk practices for the ICI's Money Market Working Group showed that many managers treat a parent company and its consolidated subsidiaries as a single entity for purpose of credit limitations. More importantly, it is common for holding companies and subsidiaries to file for bankruptcy or be placed in receivership together, which results in highly correlated credit risks. Thus, treating financially consolidated corporations as a single entity for purposes of diversification may further mitigate credit risk, although it would also increase the complexity of Rule 2a-7.

2. *Board Oversight and Breaking a Dollar*. The Board plays an important role in managing the consequences of risks to the fund's shareholders. This role stems from the sometimes overlooked responsibility to "cause the fund to take such action as it deems appropriate to eliminate or reduce to the extent reasonably practicable [excessive] dilution or unfair results" resulting from the deviation of the fund's shadow price from its stable NAV.

Rule 2a-7 also requires the Board to respond to more concrete events. This includes prompt consideration of "what action, *if any*, should be initiated by the [Board]" when the shadow price deviates from $1 by more than half a cent. The Board also must authorize the fund's retention on any security following an event of default or insolvency, or if the security no longer qualifies as an eligible security or is no longer determined to present minimal credit risk.

As a general matter, the Board's responsibility in each of these events is (a) to prevent one group of shareholders from diluting the interest of the remaining shareholders and (b) resolve the problem in the manner most likely to protect shareholder value. Unless the manager intercedes to resolve the problem without loss to the fund, the Board normally has three alternatives: (1) allow the fund to continue to maintain a stable value, (2) break a dollar or (3) suspend redemptions and liquidate the fund in compliance with Rule 22e-3.

Assessments of Further Enhancements: We find it helpful to view proposals for liquidity gates, redemptions fees and minimum balance requirements as reforms designed to constrain, clarify or expand the Board's oversight responsibilities. Proposals to require a temporary suspension of redemptions or redemption fee whenever the shadow price deviates by a specified amount

under $1, for example, would substitute a mechanical response for Board oversight, constraining the Board's discretion. Expanding the events (such as the realization of significant losses) that a Board must meet to consider could be viewed either as clarifying what is intended by "excessive dilution and unfair results" or as expanding the Board's oversight responsibility.

Reformers can use a standard risk management process to develop and assess enhancements to Board oversight. The first step involves identification of key risk indicators. Currently, the key risk indicators in Rule 2a-7 include the deviation of the shadow price from the stable NAV, credit assessments, stress test results, downgrades that effect tier or eligibility status, and events of default or insolvency. Additional risk indicators for consideration might include deviations in the prices of individual portfolio securities, realized losses, or levels of weekly and/or daily liquid assets.

The second step involves identification of possible responses to risk events. Currently, Rule 2a-7 has two general responses: (1) dispose of the affected portfolio securities or (2) call a Board meeting. The range of responses available to the Board depends on the circumstances, but always includes breaking a dollar or suspending redemptions and liquidating the fund. Additional responses for consideration might include temporary suspension of redemptions (either of the entire account balance, or of a specified amount or portion of each account) or redemption fees.

The final step is to create a plan for responding to key risk indicators when they exceed specified tolerances. The plan should provide for escalating levels of response to high levels of risk indicators. For example, at nominal risk levels, review of normal stress testing may provide sufficient oversight. When a risk indicator exceeds nominal levels, increased monitoring and consideration by the Board may be appropriate. At sufficiently high levels, the Board may be required to select a response or a response may be automatically implemented.

This risk management approach also provides a means of testing proposed reforms. The test consist of asking the relevant constituencies—the directors and trustees, the managers, the shareholders and the intermediaries that distribute the shares—to compare the proposed reform to the currently permitted responses (breaking a dollar or suspending redemptions and liquidating the fund). If none of the constituencies find the proposed reform preferable to the current responses, then the reform is unlikely to improve money market funds. This is the problem with the Federal Reserve Bank of New York's minimal balance at risk proposal—they have yet to find anyone involved with money market funds who would prefer the continual headache of maintaining a minimal balance to having their fund break a dollar if it can no longer maintain a stable value.

B. Consequences to Other Funds

Breaking a dollar may create risks for other money market funds and their shareholders. This is generally referred to as contagion or run risk. The premise is that one money market fund breaking a dollar might lead to widespread redemptions from other money market funds that, apart from the redemptions, would not be in jeopardy of breaking a dollar. The loss of assets may prompt sales of portfolio securities at distressed prices, causing the shadow price of money market funds to deviate further under $1.

1. *Transparency.* Uncertainty may prompt money market fund shareholders to redeem after an unaffiliated fund breaks a dollar. If the shareholders do not know why the other fund broke a dollar, or if the same event could threaten the stability of their fund, they may redeem first and ask questions later. The 2010 reforms addressed this risk by requiring money market funds to post current portfolio information on their website at the end of every month. This allows shareholders quickly to determine whether their fund holds any of the securities that caused another fund to break a dollar. If their fund does not hold problematic securities, or if the manager has already taken steps to address such holdings, the shareholders should have no reason to redeem.

Assessments of Further Enhancements: Some commenters have recommended increasing the frequency or extent of portfolio disclosures. Many funds voluntarily post more frequent portfolio information and, recently, have started to disclose their daily shadow price. This demonstrates the feasibility of increased disclosure. It also shows that shareholders have sufficient market power to obtain enhanced disclosure, which suggests that additional regulation may be unnecessary.

Cost/benefit considerations may also militate against further disclosure mandates. Those arguing for disclosure that is more frequent contend that shareholders may still be uncertain whether their fund acquired a problematic security since the last reported portfolio. This information can be provided more cheaply and effectively, however, by having the fund issue a statement immediately following an event, rather than making continuous disclosures. This occurred during August and September of 2007, when many funds issued statements or held open calls with shareholders regarding their exposures to problematic SIVs and subprime mortgages. This is another circumstance where market incentives appear strong enough to promote appropriate disclosure without regulatory intervention.

2. *Daily/Weekly Liquid Assets Requirements.* These controls do double duty by reducing stress on the market as well as protecting a fund's stable value. The weekly liquid asset floor assures that a fund can absorb, at a minimum, the redemption of up to 30% of its shares in the

course of a week without selling any portfolio securities. This gives managers the flexibility to sell portfolio securities only to the extent the market will bear, rather than being forced into an immediate "fire sale." The liquid asset floors provide the entire money market with a substantial liquidity buffer against widespread shareholder redemptions.

Assessments of Further Enhancements: Section II.C already assessed the possibility of increasing the floors for daily and weekly liquid assets. The utility of the floors as a market buffer should not be overlooked when assessing other reform proposals. For example, using weekly liquid asset levels as a key risk indicator requiring a significant response (such as mandatory redemption fees or holdbacks) may lead managers to sell assets regardless of market conditions to avoid dropping below the trigger level. This will decrease the effectiveness of the liquid asset floor as a buffer against selling pressure from redemptions.

3. *Liquidation.* The Board's ability to suspend redemptions while liquidating the fund prevents a fire sale of the portfolio if shareholders start redeeming shares in response to a fund breaking a dollar. If selling holdings to meet redemptions after breaking a dollar is likely to overwhelm the market, suspending redemptions allows the portfolio to run off while selling securities opportunistically.

Assessments of Further Enhancements: There is concern that the suspension of redemptions by one fund could lead to redemptions by shareholders of unaffiliated funds. The greater transparency of money market funds should also reduce this risk. It may be significant that the temporary Treasury guarantee program for money markets funds required a thirty-day suspension of redemptions while a fund was liquidated after a guarantee event. To the extent that this guarantee helped stem the run on prime money market funds after its announcement on September 19, 2008, this would suggest that the risk of breaking a dollar is a greater incentive for redemptions than the risk of a short-term loss of liquidity.

IV. CONCLUSION

Given the 30-year history of Rule 2a-7 and the extensive revisions to the rule during the intervening decades, we should not be surprised to find that many possible enhancements to the rule's risk controls have already been considered and rejected. Unless reformers are intent on subverting the essential nature of money market funds altogether, the avenues for further enhancements are limited. More significantly, the most promising enhancements relate primarily to controlling the consequences of breaking a dollar rather than to reducing the probability of breaking a dollar. This may explain why the industry continues to explore gating, redemption fees and similar reforms that would take effect only when a fund is already threatened with breaking a dollar.

What should also be clear from this review is that the proposals under consideration by FSOC all lead to dead ends. Floating the NAV would be the antithesis of reform; capital is uneconomical; and a minimum balance requirement offers no advantages to having a fund break a dollar. FSOC's attempts to interfere in the SEC's deliberations have, since the end of 2011, impeded the SEC's progress on reform proposals that might benefit shareholders, other money market funds and the money market generally. Therefore, it would be best for FSOC and its members to turn their attention to more pressing matters, such as belated adoption of regulations required by the Dodd-Frank Act, and drop money market funds from their agenda.