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Filed Electronically: rule-comments@sec.gov
Mr. Brent J. Fields
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, D.C. 20549

Re: *Open-End Fund Liquidity Risk Management Programs; Swing Pricing; Re-Opening of Comment Period for Investment Company Reporting Modernization Release (File Nos. S7-16-15 and S7-08-15)*

Dear Mr. Fields:

The Investment Company Institute[1] today is filing a comment letter ("main ICI comment letter") that broadly addresses the Securities and Exchange Commission ("SEC") proposal on Open-End Fund Liquidity Risk Management Programs ("Rule Proposal").[2] This companion letter will focus on the data, academic literature, and analysis the SEC cites in its Rule Proposal, including the Division of Economic and Risk Analysis study, "Liquidity and Flows of U.S. Mutual Funds."[3]

As detailed in our main comment letter, ICI supports the SEC's proposal to require open-end mutual funds and exchange-traded funds (ETFs)[4] to establish formal liquidity risk management programs, as well as several other aspects of the Rule Proposal. We agree that a formal program

[1] The Investment Company Institute (ICI) is a leading, global association of regulated funds, including mutual funds, exchange-traded funds (ETFs), closed-end funds, and unit investment trusts (UITs) in the United States, and similar funds offered to investors in jurisdictions worldwide. ICI seeks to encourage adherence to high ethical standards, promote public understanding, and otherwise advance the interests of funds, their shareholders, directors, and advisers. ICI's U.S. fund members manage total assets of $17.9 trillion and serve more than 90 million U.S. shareholders.

[2] See letter from David W. Blass, ICI, to Mr. Brent J. Fields, Secretary, SEC, dated January 13, 2016.

[3] Securities and Exchange Commission, *Liquidity and Flows of U.S. Mutual Funds*, September 2015 ("DERA study"), available at http://www.sec.gov/dera/staff-papers/white-papers/liquidity-white-paper-09-2015.pdf.

[4] This comment letter uses the term "funds" to mean open-end mutual funds or exchange-traded funds registered under the Investment Company Act.

requirement would strengthen investor protections and help the fund industry maintain its long and successful record of liquidity risk management.

The SEC can achieve its goal of ensuring even stronger liquidity risk management for all funds, however, without imposing certain highly prescriptive elements of the Rule Proposal, namely, without the "three-day liquid asset minimum" and the six-category liquidity classification scheme for portfolio assets ("six-bucket scheme"), both of which ICI opposes. These proposed requirements depart dramatically from the current regulatory approach, which has served investors well. Neither in the Rule Proposal itself nor in the DERA study does the SEC establish a reasonable basis for the level and type of regulatory intervention these proposed requirements represent.

For example, as discussed in this letter, we find no evidence of widespread problems (or the potential for widespread problems) with meeting investor redemptions. In fact, as we demonstrate, funds as a whole have been highly successful in meeting redemptions over market cycles since the passage of the Investment Company Act (ICA) 75 years ago. In addition, we find no evidence that either growth in fund assets or variability in fund flows—both of which the Rule Proposal highlights—provides cause for concern. Similarly, despite what the Rule Proposal appears to suggest, the SEC offers no clear evidence (nor are we aware of any) that fund managers have managed liquidity in ways that disadvantage long-term shareholders. Nor does the SEC in any way substantiate any claim that inadequate management of funds' portfolio liquidity could raise market-wide concerns.

The SEC's failure to establish a compelling need for the requirements to maintain a three-day liquid asset minimum and six-bucket scheme is especially noteworthy because these aspects of the Rule Proposal may create adverse outcomes. This companion comment letter provides data and economic analysis underscoring the concerns raised in our main comment letter. We also show that the DERA study provides little if any support for the SEC's proposed three-day liquid asset minimum and six-bucket approach. Finally, we discuss how these requirements could perhaps increase dislocations and volatility in financial markets by contributing to cliff events in liquidity—similar to those arising from credit rating agencies downgrading certain investments during the financial crisis.

Executive Summary

I. Introduction

Fund advisers ("advisers") have strong incentives to manage fund portfolios to provide favorable returns while balancing the need to maintain sufficient liquidity to meet shareholder redemptions. Funds have a long history of successfully balancing these goals. Against the compelling historical record, the Rule Proposal and the DERA study provide little if any analysis supporting the imposition of the proposed three-day liquid asset minimum or six-bucket scheme. We provide analysis showing that these aspects of the Rule Proposal could prove highly problematic, introducing problems where none currently exist, and potentially creating exactly the kinds of shareholder harm or market risks the Rule Proposal seeks to mitigate.

II. Funds Manage Shareholder Redemptions Very Effectively

A. Funds Have A Long History of Accommodating Shareholder Redemptions

- Funds have a 75-year history of accommodating investor redemptions. In the past 15 years alone, long-term mutual funds (bond, equity, and hybrid mutual funds) and ETFs have met tens of trillions of dollars of redemptions. Much evidence in the DERA study is consistent with the view that funds successfully meet shareholder redemptions.

B. Funds Already Face Strong Incentives to Meet Redemptions

- Fund advisers face strong legal and market incentives to manage portfolios to meet redemptions while minimizing the impact on remaining shareholders. Under the ICA, funds must meet redemptions within seven days.

- Market incentives arise because investors respond to fund returns. A fund's adviser therefore must balance adding to the fund's return by remaining as fully invested as possible (within the constraints of the fund's prospectus) against maintaining liquidity sufficient to meet redemptions because selling illiquid assets into a declining market can lower fund returns and disadvantage non-redeeming shareholders.

C. Funds Are Designed to Meet Redemptions

- A key feature that helps funds meet redemptions is that most funds continuously offer new fund shares for sale. A long-term fund often can accommodate the vast majority of its redemptions through sales of new fund shares to other investors.

- In addition, advisers manage funds' portfolios in order to meet shareholder redemptions. To that end, funds employ a wide range of successful strategies, including holding short-

term assets, holding securities that generate cash (e.g., through coupon payments), holding highly liquid common stocks, or using highly liquid derivatives. These strategies vary widely across the industry. There is no one-size-fits-all approach. Strategies can vary markedly even within particular fund categories. We illustrate this for high-yield bond funds. All of this suggests the SEC's proposal to force funds to categorize and manage liquidity in its six-bucket scheme is ill-advised because it is in essence a one-size-fits-all approach.

D. Variability of Fund Flows Should Not Raise Concerns

- The Rule Proposal notes that the flows of certain types of funds—high-yield bond funds, emerging market debt funds, and alternative strategy funds—are more variable than those of other funds. The Rule Proposal, pointing to evidence in the DERA study, argues that these funds have more unpredictable flows, which "could increase these funds' liquidity risk by making it more difficult to plan to meet fund redemptions."[5]

- We do not believe this conclusion can be sustained. One reason is obvious: whatever the variability of fund flows, funds successfully have accommodated vast amounts of redemptions. Also, if funds have more variable flows, advisers will manage their portfolios accordingly, such as by holding more liquidity. Consistent with this, the DERA study indicates that funds with more variable flows hold more short-term assets.

- The DERA study is circumspect about whether variability in fund flows presents concerns. As it shows, larger funds have less variable flows. On the other hand, smaller funds, though having more variable flows, may find it easier to sell securities with minimal price effects.

E. Growth in Fund Assets or Creation of New Fund Types Should Not Heighten Concerns About Funds' Ability to Meet Redemptions or to Treat Remaining Shareholders Fairly

- The Rule Proposal accepts that funds have a long history of successfully meeting redemptions but seems to question whether this consistent historical record will continue due to concerns about growth in fund assets, shifts in funds' assets toward bond funds, or development of new types of funds (such as ETFs and alternative funds). This section discusses why such concerns are not well founded.

- Growth in bond fund assets should not pose concerns. Despite recent growth, bond fund assets currently make up a smaller share of long-term fund assets than they did in the mid-1980s and their flows are less variable. Much of the growth in bond funds reflects secular trends: the aging of Baby Boomers and shifts from direct holdings of securities toward

[5] Rule Proposal at 298.

indirect holdings through funds. These trends reflect households' long-term planning decisions, which are unlikely to change abruptly as a result of market corrections.

- Concerns about growth in the assets of specific fund types, such as high-yield funds, are overstated. High-yield fund assets today make up a smaller share of the high-yield debt market than they did 15 years ago. Also, these funds hold liquid assets, such as common stock and short-term securities, to help meet redemptions. For similar reasons, concerns about growth in emerging market funds and alternative funds are overstated.

III. Evidence is Lacking that Funds Manage Liquidity in Ways Detrimental to Shareholders

A. Do Funds Sell Their Most Liquid Assets First to Meet Redemptions?

- The Rule Proposal posits that funds meet redemptions by selling their most liquid assets first, which could harm remaining shareholders. Contrary to the Rule Proposal's hypothesis, we show that funds' holdings of short-term assets as a percentage of their portfolios often *rise* when funds see large outflows.

- This is consistent with our understanding that funds meet redemptions using a nuanced approach, taking into account market conditions, expected investors flows, and other factors. Indeed, a fund may find it necessary and appropriate to meet redemptions by selling a range (or "slice") of the fund's portfolio securities to help it maintain its overall asset allocation.

B. Does the DERA Study Provide Evidence that Funds Manage Liquidity in Ways that Harm Non-Redeeming Shareholders?

- DERA's study of fund liquidity does not analyze the Rule Proposal's three-day liquid asset minimum or assess the six-bucket scheme. It assesses only a single "bottom-up" approach to fund liquidity (Amihud measure) and only for equity funds. It highlights the challenges that arise in seeking to assess bond fund liquidity using a bottom-up approach. In short, DERA's analysis offers no support for the Rule Proposal's three-day liquid asset minimum or six-bucket scheme.

- The Rule Proposal indicates that the DERA study supports the hypothesis that funds meet redemptions by selling their most liquid assets first. As we show, however, the DERA evidence on this point is indirect only, is mixed, and is in ways consistent with the alternative hypothesis that funds balance the interests of redeeming and remaining shareholders reasonably.

IV. Prescriptive SEC Proposal Will Distort Market Liquidity and Increase Systemic Risk

The SEC's liquidity proposal is intended to improve funds' ability to meet redemption requests and reduce any potential adverse effects on remaining shareholders. The SEC provides no evidence that the proposed three-day liquid asset minimum or six-bucket scheme would achieve this. In fact, there is a clear risk these requirements could be harmful.

A. Rule Proposal Creates a New, Problematic Standard for Assessing Fund Liquidity

- The Rule Proposal introduces a "liquidity risk" standard that will be highly problematic. Funds must assess at what future point a security can be sold for cash without materially affecting the security's price.

- This standard could undermine price discipline if investors interpret it as indicating that they can redeem out of long-term funds at a known or protected NAV.

- The standard is problematic because a fund will generally not know *today* at what price a security can be sold without moving the security's price at a *future* date. The problem is compounded by having to make this prediction security-by-security.

B. Three-day Liquid Asset Minimum Requirement Could Impair Liquidity

- The Rule Proposal requires each fund to specify the proportion of its portfolio it will hold in securities convertible to cash within three business days without materially affecting the value of those securities. The Rule Proposal gives funds some flexibility in restoring liquid assets if they fall below the specified minimum.

- Nevertheless, the three-day liquid asset minimum risks creating the exact scenario the Rule Proposal seeks to ameliorate. During a market downturn if a fund's liquid assets fall toward the established minimum, the fund's adviser may sell *less liquid* securities in order to remain above the minimum, potentially undermining liquidity in certain market segments, instead of bolstering it. Moreover, if the fund sells these less liquid securities at prices below fundamental value, fund investors could be harmed.

- Because cash is the only asset type that categorically would qualify as a "three-day liquid asset," funds may feel compelled to limit or restrict assets held in the three-day liquid minimum category. A three-day liquid asset is one that can be can be converted into cash "within three business days at a price that does not materially affect the value of that asset immediately prior to sale." This could leave in limbo securities (or at least large portions thereof) that are typically judged to be highly liquid (e.g., common stocks, S&P 500 futures,

perhaps even long-term Treasury and agency securities) because a fund sale of such securities could *potentially* move the future market price.

- The three-day liquid asset minimum may encroach on the ability of certain kinds of funds (e.g., index funds and target date funds) to achieve prospectus objectives set forth in the funds' prospectuses.

- Neither the Rule Proposal nor the DERA study considers these issues.

C. Six-Bucket Liquidity Classification Scheme Could Create the Kinds of Problems the SEC Seeks to Mitigate

- The six-bucket scheme could, if adopted, lead fund portfolios and trades to become more correlated or "crowded," especially among bond funds, which could increase risks to markets and fund shareholders.

- The Rule Proposal's six-bucket scheme is a "bottom-up" approach, seeking to assess a fund's liquidity by assessing the liquidity of each of the fund's individual securities. This would be a quite different approach from the "top-down" approach now used by many fund advisers.

- Many fixed-income securities (as identified by CUSIP) trade infrequently. Consequently, to assess fund liquidity using the SEC's proposed bottom-up approach, funds may well need to turn to model-based estimates, which would most likely be provided by a small number of third-party vendors.

- All else equal, funds will gravitate toward securities designated by third-party providers as "more liquid" and shun those deemed "less liquid." Thus, model-based classifications risk creating portfolios and trades that are more correlated across funds.

- During periods of market stress, funds' more correlated portfolios could create liquidity "cliff events" if third-party vendors "downgrade" the liquidity of a security or group of securities, causing a rush to sell the downgraded securities. This is similar to the "cliff events" that occurred during the financial crisis when credit-rating agencies downgraded issuers or groups of issuers.

- Neither the Rule Proposal nor the DERA study considers these adverse possibilities.

D. The Six-Bucket Liquidity Classification Scheme May Lead to Anomalous Results

- The Rule Proposal seeks to create a framework that will allow investors, analysts, and regulators to compare liquidity across funds on a consistent basis. As this section discusses, this is an extremely unlikely outcome. If funds do in fact report "consistently," it likely only

will be because they rely on model-based estimates provided by third-party vendors who all happen to use similar models.

- How the six-bucket scheme plays out in practice is difficult to foresee precisely, as it may depend critically on assumptions and models that third-party vendors use to assess liquidity of individual securities.

- Nevertheless, we show that the six-bucket scheme may create anomalous outcomes. We provide examples indicating that large funds could tend to be classified as highly illiquid, as would many "plain vanilla funds" that generally invest in only highly liquid securities (e.g., S&P 500 funds).

- Conversely, the liquidity buckets could be essentially meaningless for small funds. Virtually all of their assets could be classified as liquid within three days irrespective of their portfolio holdings and approaches to liquidity management.

I. Introduction

Fund advisers ("advisers") have strong incentives to offer investors favorable returns in accordance with funds' investment objectives, strategies, and policies. Advisers likewise have strong incentives to manage portfolios to meet shareholder redemptions. The Investment Company Act (ICA) of 1940 requires funds to meet redemptions within seven days.[6] This requirement, in the ICA since its inception, has fostered a market where investors expect to receive redemption proceeds promptly. That, in turn, imposes a strong market discipline on fund advisers to balance the need to manage fund portfolios to meet investment objectives against the need also to manage liquidity to meet redemptions while minimizing any negative effects of redemptions on remaining shareholders.

The SEC seeks to improve liquidity management not only to ensure that funds meet redemptions but also because "there can be significant adverse consequences to remaining in a fund when it fails to adequately manage liquidity." We do not find compelling evidence that advisers have managed fund liquidity to the detriment of long-term shareholders. In fact, the DERA study provides evidence to the contrary, showing, for example, that domestic equity funds with more variable flows maintain greater liquidity. It also shows that as market liquidity deteriorates, fund liquidity deteriorates by *less* than market liquidity, consistent with fund advisers managing liquidity dynamically according to market conditions.

Nevertheless, the Rule Proposal claims funds meet redemptions by managing liquidity in ways that may disadvantage remaining shareholders. Most notably, the Rule Proposal states that funds sell their more liquid assets first to meet redemptions.[7] We can find no explicit statement to this effect in the DERA study. As we discuss below, the DERA study does find that fund flows are positively correlated with fund liquidity. The Rule Proposal seems to take this as evidence that fund outflows cause fund liquidity to fall. Our analysis suggests the DERA correlation is consistent with an alternative explanation: fund outflows and any drop in fund liquidity are independent reactions to a third factor, namely the reaction of broad markets to macroeconomic news.

The academic studies cited in the Rule Proposal are in a number of instances primarily theoretical expositions about the potential for fire-sales, run-risk, and deteriorating fund liquidity under various scenarios. These models tend to ignore extremely important institutional details of funds and their investors.[8]

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[6] Section 22(e) of the ICA.

[7] Rule Proposal at 292.

[8] For example, the Rule Proposal at 22 argues that fund redemptions "can create incentives in times of liquidity stress." It cites Qi Chen, Itay Goldstein, and Wei Jiang, "Payoff Complementarities and Financial Fragility: Evidence from Mutual Fund Outflows," *Journal of Financial Economics*, 239, (2010). Chen, Goldstein, and Jiang (2010) build a game-theoretic model in which fund shareholders may have an incentive to redeem in the face of a market decline. The incentive stems from the desire to avoid the downward pressure on the fund's securities prices that could arise if other shareholders also are

To the extent that the academic studies cited in the Rule Proposal and DERA study are more empirical, they tend to focus on flows of *individual* equity funds or flows to some subset of equity funds. It is unclear how these studies relate to the Rule Proposal's concern that inadequate management of funds' portfolio liquidity could raise market-wide or fund-level concerns. As we show, individual fund outflows tend to be balanced by inflows to other funds, in many cases to other funds with similar or identical investment objectives. In fact, one academic study the Rule Proposal cites finds that the funds face "relatively trivial ex ante expected costs from the possibility of being forced by fund outflows to sell holdings at discounted prices."[9]

In short, a reasonable interpretation of the evidence, both in the DERA study and this comment letter, is that funds have met redemptions while balancing the interests of redeeming and non-redeeming investors.

As a general matter, a rule requiring funds to establish liquidity risk management programs would strengthen investor protections. But as we discuss in this comment letter, various aspects of the Rule Proposal—namely the three-day liquid asset minimum requirement and the classification of fund positions into six liquidity buckets—are problematic. These requirements may create problems—anomalous or adverse outcomes—where none previously existed.

Given the lack of compelling evidence that advisers are broadly mismanaging fund liquidity, a rule that may have adverse effects should be held to a high standard. The SEC should:

(a) establish a compelling need for the rule;

(b) demonstrate the need for the specific approach the Rule Proposal adopts; and

(c) prove that the rule's potential benefits clearly outweigh potential adverse outcomes.

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expected to redeem in light of the market decline. Chen, Goldstein, and Jiang (2010), however, assume that investors trade in funds for only two "dates," which seems to mean two days. Investors, though, have planning horizons that span years or even decades. Another important feature not reflected in their model is taxes. Taxes can create a disincentive to trade. An investor who trades today may incur a current capital gain tax liability.

[9] *See* Joshua Coval and Erik Stafford (2007), "Asset fire sales (and purchases) in equity markets," *Journal of Financial Economics*, 86, 479-512. For a number of reasons, the empirical results in Coval and Stafford (2007) should be interpreted cautiously. For example, Coval and Stafford (2007) conduct their analysis at the level of funds' holdings of individual securities. While they find sizable effects on the returns of the individual securities that a subset of funds are either selling or buying, it is an open question of whether these results translate to meaningful effects at the fund level, let alone at aggregate levels sufficient to influence market liquidity. Coval and Stafford (2007) themselves state that "considering that less than one percent of the stocks in our sample are subject to widespread flow-induced selling during a given quarter, *a fund faces relatively trivial ex ante expected costs from the possibility of being forced by fund outflows to sell holdings at discounted prices* [emphasis added]." This simply does not support the justifications offered in the Rule Proposal.

With respect to the three-day liquid asset minimum, the Rule Proposal gives funds flexibility to set their minimums. But the requirement would still restrict advisers' ability to manage fund portfolios, which could have adverse consequences. For instance, it could forestall funds that are approaching their liquidity minimum or have fallen below it from purchasing "less liquid assets" whose prices have fallen during a market downturn and that now appear to be good value for fund shareholders. The rule could also have the perverse outcome of causing funds to sell less liquid securities when overall market liquidity declines in an attempt to stay above the minimum.

Neither the Rule Proposal nor the DERA study provides evidence that the requirement would improve shareholder outcomes. Neither discusses potential adverse outcomes of the Rule Proposal. It is incumbent on the SEC to do so, given the lack of evidence of any substantial problem with the way advisers as a whole are managing funds' liquidity.

The same high standard should apply when the SEC evaluates the six-bucket classification scheme. This scheme would require funds to classify the liquidity of every portfolio security into one of the six buckets (based on the time needed to sell the security without a material effect on its price) and report the classification to the SEC monthly. The SEC would make this information publicly available quarterly. One of the SEC's goals is to provide regulators, investors, and analysts with the ability to compare liquidity on a consistent basis across all funds.[10]

As we discuss, given the range of fund types, asset management approaches, and types of securities that funds hold, trying to achieve a meaningful degree of consistency in reporting (or "scoring") liquidity across funds is likely to be extremely difficult. Given the vast number of securities funds would need to evaluate, funds would almost surely turn to statistical model-based assessments, which would most likely be provided by third-parties.

Whether different funds report "consistent" measures for identical securities would depend on the models and assumptions third-parties use to assess liquidity. Models by design will depend heavily on particular assumptions and observable and measurable inputs such as trading volumes and size of a fund's position in a security. As we detail, such methodologies can produce anomalous results, like a large "plain vanilla (e.g., S&P 500 index funds) being classified as highly illiquid.

The DERA study itself underscores these issues. It does not attempt, for instance, to quantify funds' liquidity according to the six-bucket classification scheme. Instead, it assesses one particular concept of liquidity, the so-called Amihud illiquidity measure, perhaps because that concept was relatively straightforward to measure using a bottom-up approach for equity funds. The DERA study did not attempt to use this measure to examine bond fund liquidity. In fact, it noted in some detail the challenges of doing so, such as matching bond fund holdings on a security-by-security basis with

[10] *See* for example, Rule Proposal at 259 stating that public availability of securities' liquidity classifications "would provide a resource for fund managers to compare the liquidity classifications assigned to various portfolio assets, which in turn could result in making the liquidity classifications assigned to certain positions more consistent across the fund industry."

available measures of the liquidity of fixed-income securities. In our view, these same kinds of challenges are likely to arise for funds under the SEC's proposed classification scheme.

Finally, we are concerned that the proposed six-bucket classification could, if adopted as proposed, increase risks in funds and the market. If funds are required to report publicly their security-by-security measures of liquidity, funds may begin concentrating in securities judged under the SEC's framework to be "more liquid" and to avoid those judged as "less liquid." This could add to illiquidity in various market segments. This could also create "cliff events" in liquidity—similar to those that arose from credit agencies' downgrading of firms during the financial crisis—if the liquidity of particular issuers is "downgraded" by third-party vendors. Neither the Rule Proposal nor the DERA study consider these possibilities.

II. Funds Manage Shareholder Redemptions Very Effectively

A. Funds Have a Long History of Accommodating Shareholder Redemptions

For 75 years, through bull and bear markets, long-term mutual funds have met redemptions with great success. Since 1984, for example, mutual funds and ETFs have accommodated gross redemptions totaling some $54 trillion (Figure 1).[11] As the SEC acknowledges, only in rare instances has the Commission issued orders allowing a fund to suspend redemptions for periods of restricted trading or emergency circumstances.[12]

Fund industry growth has not altered this. Gross redemptions have varied over time reflecting market conditions. They have also varied over time by investment types (see Appendix Figure A1, which provides a breakdown of gross redemptions by equity, hybrid, and bond mutual funds and ETFs). But a key feature of Figure 1 is that as the fund industry has grown, funds have accommodated a vastly greater volume of redemptions.

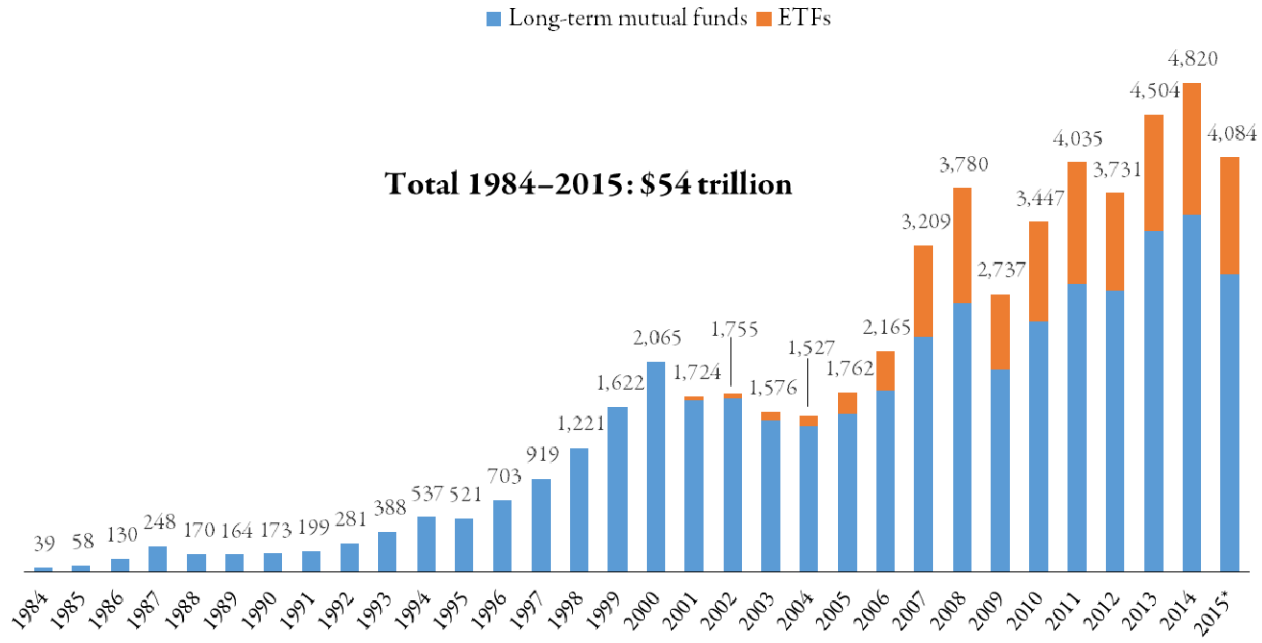
B. Funds Already Face Strong Incentives to Meet Redemptions

Fund advisers have strong incentives to manage portfolios to meet redemptions while minimizing the impact on remaining shareholders.

[11] The figure shows gross redemptions back to 1984, the earliest year for which ICI has such data on a consistent basis.

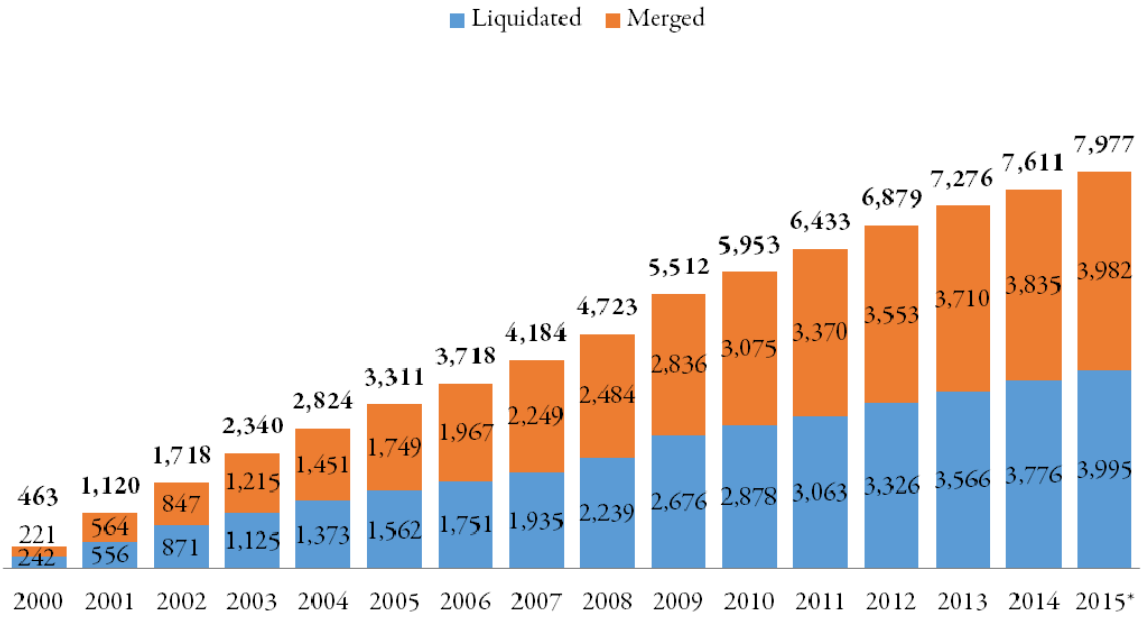
[12] Rule Proposal at 32, note 82.

Figure 1: Gross Redemptions of Shares of Long-Term Mutual Funds and ETFs
Billions of dollars, 1984-2015



* Data are as of October 2015.
Source: Investment Company Institute

Figure 2: Mergers and Liquidations of Long-Term Mutual Funds
*Cumulative, January 2000 – December 2015**



* Data are as of December 17, 2015.
Source: Investment Company Institute

One reason is that the ICA requires funds to meet redemptions within 7 days. That imposes a strong legal discipline on fund advisers. In turn, because of the legal requirement, shareholders have come to expect funds to meet redemptions promptly. That imposes strong market discipline on fund advisers.

Another reason is that investors respond to fund returns. This creates an incentive for funds to remain as fully invested as possible within the constraints of funds' prospectuses. But shareholder redemptions can reduce fund returns. Consequently, a fund's adviser must balance the desire to keep a fund as fully invested as possible against the need to manage liquidity to meet redemptions while minimizing the effects on remaining shareholders.

Evidence that fund advisers are highly cognizant of the need to balance these considerations and are subject to strong market discipline can be seen in fund mergers and liquidations. Mergers and liquidation of long-term funds are rather commonplace. Fund advisers merge funds to achieve economies of scale or liquidate funds that do not have a sufficiently large investor base and are uneconomic to operate. Figure 2 shows the cumulative number of mergers and liquidations of long-term funds since 2000. Over those nearly 16 years, almost 8,000 long-term funds have merged with other funds or have been liquidated; the split between mergers and liquidations has been about even

C. Funds Are Designed to Meet Redemptions

It is no accident that funds have a long record of meeting shareholder redemptions: funds are designed to meet daily redemptions. A key feature that helps funds meet redemptions is that most funds continuously offer new fund shares for sale. At almost any time, some investors will be redeeming out of a given long-term fund while others will be purchasing new funds shares. As a result, a long-term fund can often accommodate the vast majority of its redemptions through sales of new fund shares to other investors.

Beyond this, advisers manage funds' portfolios in order to meet shareholder redemptions. To that end, funds adopt strategies that vary widely across the industry. Fund advisers' practices may reflect, for example, a fund's investment objectives, its base of investors, its size, and other characteristics. Fund complexes that specialize in U.S. equity funds, especially those focusing on large-cap stocks, are likely to be able to meet redemptions with only modest holdings of cash or cash equivalents because the U.S. equity market is so liquid.

In contrast, fund complexes that specialize in bond funds, especially those with high-yield, municipal, or international bond funds, may choose to hold more short-term assets or other highly liquid securities (e.g., common stocks) to help meet redemptions. As Figure 3 shows, high-yield bond funds as a group recently have held 3.4 percent of their assets in short-term securities, 3.6 percent in stocks, and 7.4 percent in investment grade bonds. A high-yield fund that holds some fraction of its assets in stocks and investment grade bonds may reasonably elect to hold less in short-term securities.

Even within particular investment types, strategies for managing to meet redemptions can vary significantly by fund. For example, a bond fund that holds fixed-income securities that throw off large coupon payments may be able to reduce its holdings of short-term assets while still meeting redemptions. A fund that invests more heavily in mortgage-backed securities (which may receive prepayments of principal) also may be able to hold a smaller percentage of its assets in short-term or other highly liquid securities. Cash flows from fixed-income securities can vary over the business cycle; advisers monitor these variations to balance staying invested while meeting redemptions with minimal impact on remaining shareholders.

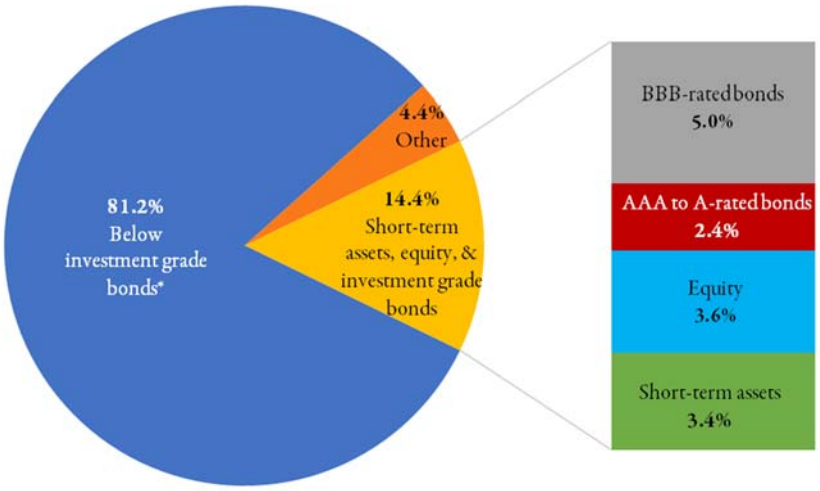
Thus, there is no one-size-fits-all approach to managing fund liquidity. As the DERA study shows, holdings of liquid assets can vary markedly even across funds with the same reported investment objective. To illustrate, Figure 4 shows the percentage of short-term assets and stocks held by the range of high-yield funds. The median high-yield fund recently held 5.2 percent of its assets in short-term assets and stocks. But many funds held considerably more than that. A few high-yield funds reported holdings of short-term assets and stocks in excess of 20 percent. These funds, although categorized as high-yield funds by Morningstar, ICI, and others, have prospectuses that allow significant holdings of short-term assets and stock; for example, "strategically managed" high-yield funds may have prospectuses that allow them to be 100 percent in high-yield bonds *or* 100 percent in cash depending on market conditions.

The lack of a one-size-fits-all approach is a strength promoting the ability of funds to meet redemptions. Because funds use a range of approaches to managing liquidity to meet redemptions (or for that matter, a given fund may vary its approaches depending on a range of factors), funds are less likely to be creating "crowded" or correlated trades. Suppose, for example, that two separate corporate bond funds must meet redemptions at the same moment. To do so, one sells some of its holdings of long-term Treasury bonds and the other unwinds some written credit default swap positions. To the extent these actions have any market impact, they are likely to be on two different segments of the bond market.

Funds also use derivatives to help manage flow variability. This is particularly relevant because funds that invest in fixed income markets often use derivatives to help manage their portfolios. Derivatives can be more liquid than their physical counterparts.[13] At the same time, the cash collateral that funds segregate to support their derivatives positions provides a ready source of liquidity to meet redemptions, should they occur. This is especially true for many so-called "liquid alternative funds," which are explicitly designed to allow frequent investor trading and do so in large measure through derivatives. The DERA study contains no analysis on how funds use derivatives to manage flow variability.

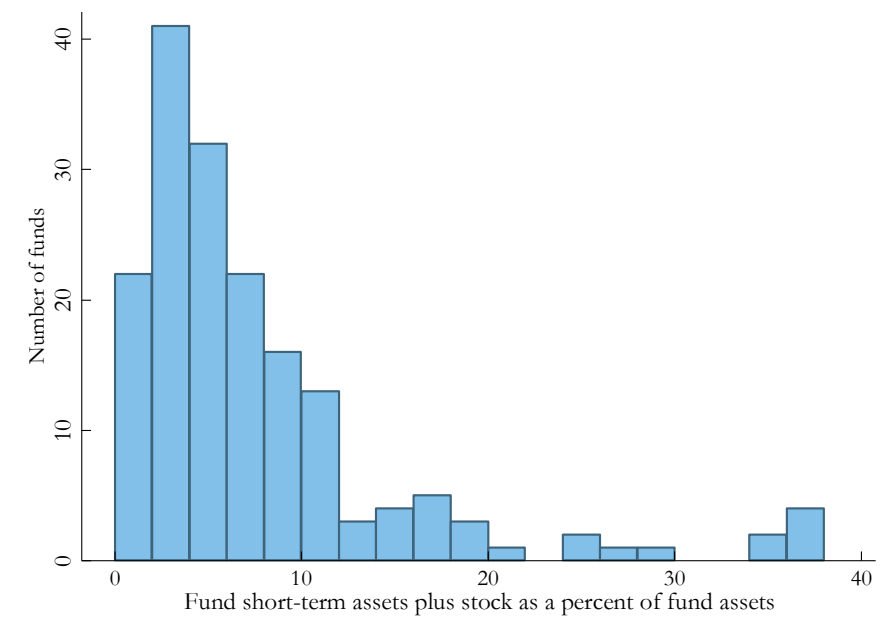
[13] *See* Gopa Biswas, Stanislava Nikolova and Christof W. Stahel, "The Transaction Costs of Trading Corporate Credit," working paper, August 2014, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2532805.

Figure 3: High-Yield Bond Mutual Fund Holdings, by Selected Categories
Percentage of all high-yield funds' assets, November 2015



* Includes unrated bonds.
Note: Includes funds Morningstar classifies as high-yield. Short-term securities are those classified by Morningstar as "cash."
Source: Investment Company Institute tabulations of Morningstar data

Figure 4: High-Yield Bond Mutual Fund Holdings of Short-Term Assets and Stocks
Number of funds, November 2015



Note: Excludes funds designated as floating rate high-yield funds; excludes a few outliers
Source: Investment Company Institute tabulations of Morningstar data

D. Should Variability of Fund Flows Be Cause for Concern?

The Rule Proposal points out that the flows of certain types of funds—high-yield bond funds, emerging market debt funds, and alternative strategy funds—are more variable than those of other funds. Based on its reading of the DERA study, the Rule Proposal concludes that these funds have more unpredictable flows, which "could increase these funds' liquidity risk by making it more difficult to plan to meet fund redemptions."[14] We do not believe that this conclusion can be sustained.

One reason is obvious: whatever variability in fund flows the DERA study documents, those funds have successfully accommodated the associated redemptions. For example, the DERA study reports that flows to foreign bond funds from 1999 to 2014 varied on average by 8.2 percent per month (Figure 5). This is at the upper end of the range of flow variability statistics for the fund categories DERA analyzed.[15] According to ICI data, over roughly the same period (January 2000 to October 2015), international bond funds (ICI's comparable fund category) accommodated $41 billion in net outflows and $322 billion in gross redemptions. This demonstrates that variability in fund flows, even when quite sizable at the individual fund level, is not in and of itself a cause for concern.

Another reason that flow variability should not cause concerns *per se* is that fund advisers manage portfolios to accommodate more variable flows. When a fund's adviser expects the fund to have more variable flows, the fund is likely to hold more cash or other liquid assets, hold more securities that throw off cash, use highly liquid derivatives, and take other steps to manage for greater variability. Indeed, the DERA study points out that funds with greater flow variability tend to have greater liquidity.[16] This is reflected in Figure 5. For instance, DERA reports that the monthly variability of flows to alternative strategy funds averaged 13.6 percent from 1999 to 2014, the highest of any category DERA considered. DERA also reported that these funds on average held 22.9 percent of their portfolios in cash, well above the level reported by any other category. These funds also held other highly liquid securities: 30.5 percent in common stocks and 11.1 percent in government bonds.

The Rule Proposal raises the possibility that more variable flows are more unpredictable, making it more challenging for an adviser to plan for redemptions. The DERA study does find that funds with more variable flows also have more variable "unexpected flows." But the DERA study is circumspect about this. It states that "Our estimates of unexpected flows are imprecise … It is very unlikely that funds forecast their own flows with the model we use. Fund managers have significantly

[14] Rule Proposal at 298.

[15] DERA study at 17. For foreign bond funds, 8.2 percent per month represents the standard deviation of monthly flows as a percent of assets in this sample of funds.

[16] DERA study at 2.

more quantitative and qualitative information available … [T]he large amount of information available to funds that is missing from the [DERA] model leads us to believe we underestimate predictability."[17]

Moreover, if a fund's flows are truly less predictable, the fund's adviser will manage to that by holding a more liquid portfolio. The DERA statistics reported in Figure 5 are consistent with that hypothesis: among the fund categories DERA considered, Alternative Strategy funds have the highest unexpected fund flow variability (10.0 percent per month) but hold far and away the highest percentage of portfolio assets in cash.

Another reason the Rule Proposal's concerns about flow variability are overstated is that flow variability tends to fall as funds grow. Put differently, flows become more predictable as funds get larger.[18] Figure 6 shows the estimated relationship between variability of fund flows and fund size for U.S. domestic equity funds and investment grade bond funds.[19] For both fund categories, expected flow variability is relatively modest even for the smallest funds. In addition, flow variability tends to decline as funds get larger. For example, an investment grade bond fund with assets of $500 million has expected flow variability of 4 percent per month (about 0.20 percent per day). An investment grade bond fund with assets of about $50 billion to $100 billion would be expected to have flow variability about half that (2 percent per month or 0.10 percent per day).

This is significant because much of the variation in fund flows that DERA reports arises from small funds. The flow variability statistics DERA reports (i.e., those repeated in Figure 5) are simple averages of cross-sectional variability in fund flows and thus are heavily influenced by small funds. This can be seen by considering fund flows on a dollar-weighted basis (final column in Figure 5). Dollar-weighted flows are more heavily influenced by large funds, which also have less variable flows. As a result, fund flow variability is much lower in dollar-weighted terms, for example 2.7 percent per month for Alternative Strategy funds (see right-most column of Figure 5) compared to the 13.6 percent per month DERA reports. Although flow variability is typically higher, and thus perhaps "less predictable," for small funds, small funds can still manage this variability by holding a higher percentage of their assets in more liquid securities, relying on liquid derivatives, or using other approaches. Also, if a smaller fund does, in fact, need to sell securities to meet redemptions, it can generally accomplish that with limited effect on market prices and liquidity.

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[17] DERA study at 22.

[18] For example, the DERA study (page 17) states that "variation in flows within a fund generally decreases as fund size increases."

[19] Figure 6 uses monthly flow data for all U.S. domestic equity and investment grade corporate bond funds and the average total net assets for each fund over the last five years, and then estimates the relationship using natural logs of both variables. Large U.S. domestic equity funds of $100 billion or larger in assets have expected standard deviations around 1 percent a month (0.05 percent per day on average).

Figure 5: Variability of Fund Flows and Funds' Holdings of Selected Types of Assets

Percent; monthly, 1999-2014

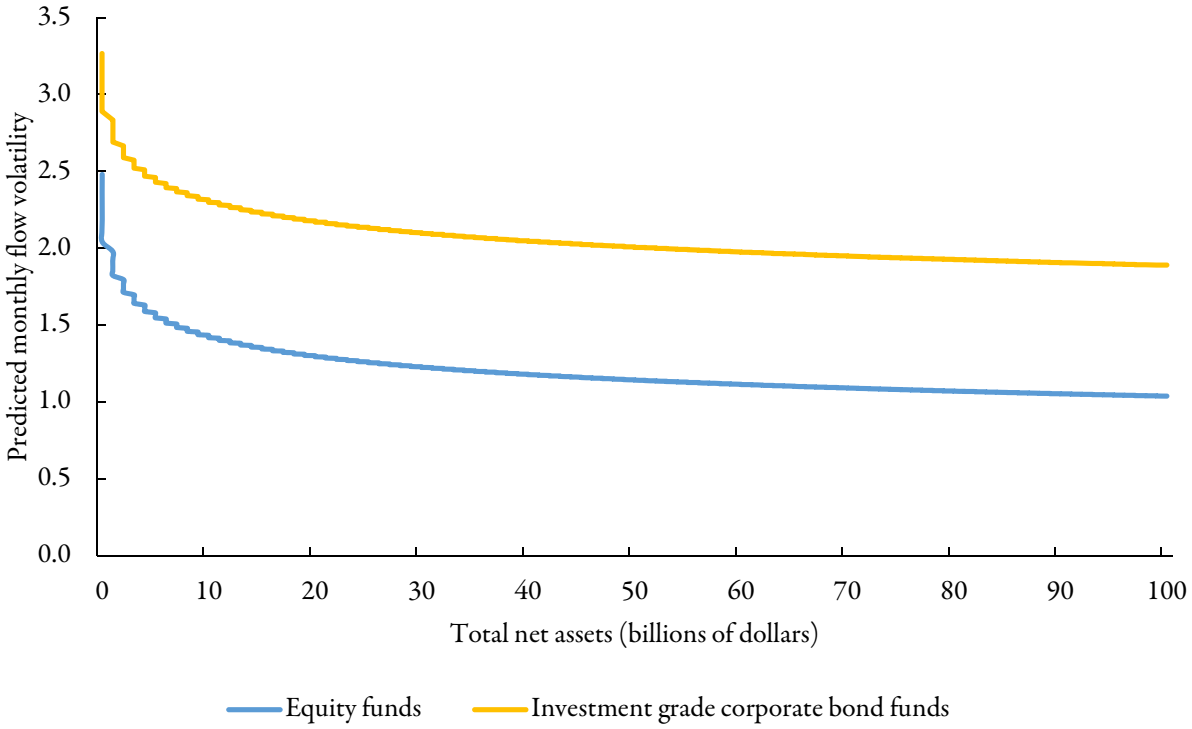
	DERA Study					ICI
	Variability of Fund Flows (percent per month)*		Selected Portfolio Holdings (percent of fund assets)			Variability of Fund Flows (percent per month)*
Investment category	Total Flows	Unexpected Flows	Cash	Common Stock	Government Bonds	*memo: dollar-weighted*
All	**5.9**	**4.1**	**4.1**	**55.3**	**8.0**	**0.3**
Alternative strategy	13.6	10.0	22.9	30.5	11.1	2.7
Foreign bond	8.2	5.8	5.1	0.3	58.0	1.6
Foreign equity	6.3	4.5	2.6	82.6	0.8	0.8
General bond	6.6	4.8	2.9	0.5	16.1	0.8
Mixed strategy	5.3	3.3	5.9	45.3	13.6	0.6
Mortgage-backed	6.3	4.3	-1.6	0.1	2.8	1.8
U.S. corporate bond	4.9	4.0	2.5	0.5	14.6	0.9
U.S. equity	5.8	4.1	3.1	85.3	2.3	0.4
U.S. gov't bond	6.5	4.7	2.8	0.4	70.1	1.5
U.S. municipal bond	2.7	2.0	1.9	0.0	0.1	0.9
Investment subcategory						
Emerging mkt. debt	9.4	7.6	7.6	0.3	49.6	3.2
Emerging mkt. equity	6.7	5.0	2.8	75.8	1.8	1.5
High-yield bond	5.3	4.2	2.4	0.3	14.0	1.5

Note: ICI's data runs from January 2000 to October 2015.

* Variability is measured using standard deviation.

Sources: DERA study and Investment Company Institute

Figure 6: Predicted Monthly Flow Variability Falls as Fund Size Increases
Standard deviation of monthly flow as percent of fund assets versus fund size, $ billions



Source: Investment Company Institute

E. Growth in Fund Assets or Creation of New Fund Types Should Not Heighten Concerns about Funds' Ability to Meet Redemptions or to Treat Remaining Shareholders Fairly

The Rule Proposal seems to accept that funds have a long history of successfully meeting redemptions. But it seems to question whether this consistent historical record will continue in light of the overall growth in fund assets, shifts in funds' assets (such as toward bond funds), or the development of new types of funds (such as ETFs and alternative funds). This section discusses why such concerns are not well founded.

a. Growth in Bond Fund Assets Should Not Pose Concerns

The Rule Proposal, like the DERA study, highlights the growth in bond fund assets over recent years, apparently implying that growth in such funds, *per se*, raises new liquidity concerns or heightens any difficulty such funds might have in meeting redemptions. Bond fund assets have grown substantially over the past 15 years and represent 27.3 percent of long-term mutual fund assets as of September 2015, up from 16.0 percent in January 2000. For a number of reasons, however, we do not believe the growth in bond fund assets poses liquidity or redemption concerns.

One reason is that the behavior of fund shareholders will remain consistent, as it has for many years.[20] The great majority of the assets in long-term mutual funds are held by households, hence retail investors. These investors generally are saving to meet long-term goals, such as preparing for retirement, or saving for the purchase of a home or planning for their childrens' college expenses.[21] ICI data indicate that 95 percent of the assets in long-term mutual funds are attributable to households. Likewise, an estimated 52 percent of the assets in long-term mutual funds are in retirement-related accounts, either through defined contribution ("DC") plans or via individual retirement accounts ("IRAs"). The percentage is even higher when looking only at mutual funds with assets greater than $100 billion. Sixty-two percent of the assets of those funds are attributable either to defined contribution plans or IRAs.

Evidence indicates that fund shareholders tend to make long-term investment decisions and stick to them. In many cases, retirement savers, such as those investing through 401(k) plans, contribute month-in and month-out. Investors tend to diversify their fund holdings across an array of asset categories. When they rebalance, they tend to make marginal changes, such as by reducing their contributions to a given category, rather than completely eliminating a particular asset class from their holdings. Evidence indicates that few such investors sell shares or reallocate assets during periods of financial stress.[22] For example, during the market turmoil of 2008, fewer than 15 percent of DC plan participants reallocated their DC plan investments, compared with around 10 percent of participants in each year between 2010 and 2014. In addition, only 1.4 percent of 401(k) plan participants, on net, changed to a zero equities allocation between 2007 and 2013.

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[20] *See* Sean Collins, "Why Long-Term Fund Flows Aren't a Systemic Risk: Past Is Prologue," *ICI Viewpoints*, February 18, 2015, available at https://www.ici.org/viewpoints/view_15_fund_flow_01; Sean Collins, "Why Long-Term Fund Flows Aren't a Systemic Risk: Plus Ça Change, Plus C'est La Même Chose," *ICI Viewpoints*, February 19, 2015, at https://www.ici.org/viewpoints/view_15_fund_flow_02; See also, Sean Collins and L. Christopher Plantier, "Are Bond Mutual Fund Flows Destabilizing?: Examining the Evidence from the 'Taper Tantrum'," working paper, September 2014, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2510666.

[21] For example, surveys indicate that virtually all individual mutual fund investors cite saving for retirement as one of their goals, and about three-quarters of fund owners indicate that retirement saving is their primary goal. Dan Schrass, Michael Bogdan, and Sarah Holden, "Characteristics of Mutual Fund Investors, 2012," *ICI Research Perspective*, Vol. 18, no. 7 (November 2012). Available at http://www.ici.org/pdf/per18-07.pdf.

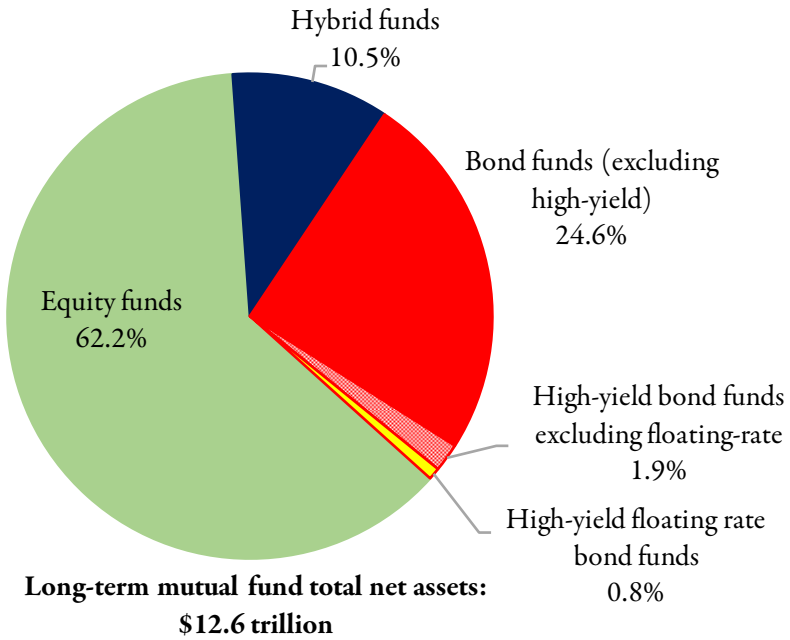
[22] Sarah Holden and Daniel Schrass, "Defined Contribution Plan Participants' Activities, 2014," *ICI Research Report*, April 2015, available at https://www.ici.org/pdf/ppr_14_rec_survey.pdf. Sarah Holden, Jack VanDerhei, Luis Alonso, and Steven Bass, "What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Account Balances, 2007–2013," *ICI Research Perspective* 21, no. 4, September 2015, available at https://www.ici.org/pdf/per21-04.pdf. Sarah Holden and Steven Bass, "The IRA Investor Profile: Traditional IRA Investors' Activity, 2007–2013," *ICI Research Report*, July 2015, available at https://www.ici.org/pdf/rpt_15_ira_traditional.pdf..

Another factor promoting consistent behavior on the part of fund shareholders is that most individuals who invest in mutual funds outside an employer-based retirement plan rely on the advice and assistance of financial professionals.[23] Financial advice and assistance helps investors remain focused on an asset allocation mix to help them achieve their investment goals rather than seeking to time the markets.

Taxes also play a role in promoting consistent fund shareholder actions. For balances held outside tax-deferred accounts, households must carefully consider the tax consequences of redeeming fund shares that may have embedded capital gains. A shareholder who redeems fund shares held outside of a tax-deferred account may incur a current tax liability on embedded gains. If the shares have been held less than one year, the shareholder would in addition have to pay the higher tax rate on ordinary income.

A second reason growth in bond fund assets should not pose concerns is that equity funds still dominate. As Figure 7 shows, equity funds constitute 62.2 percent of the assets of long-term mutual fund. Hybrid funds, which invest in mix of stocks and bonds, account for 10.5 percent of assets of long-term funds. Although the assets in bond funds have grown substantially in the past several years, they still constitute only about one-fourth of the assets of long-term funds.

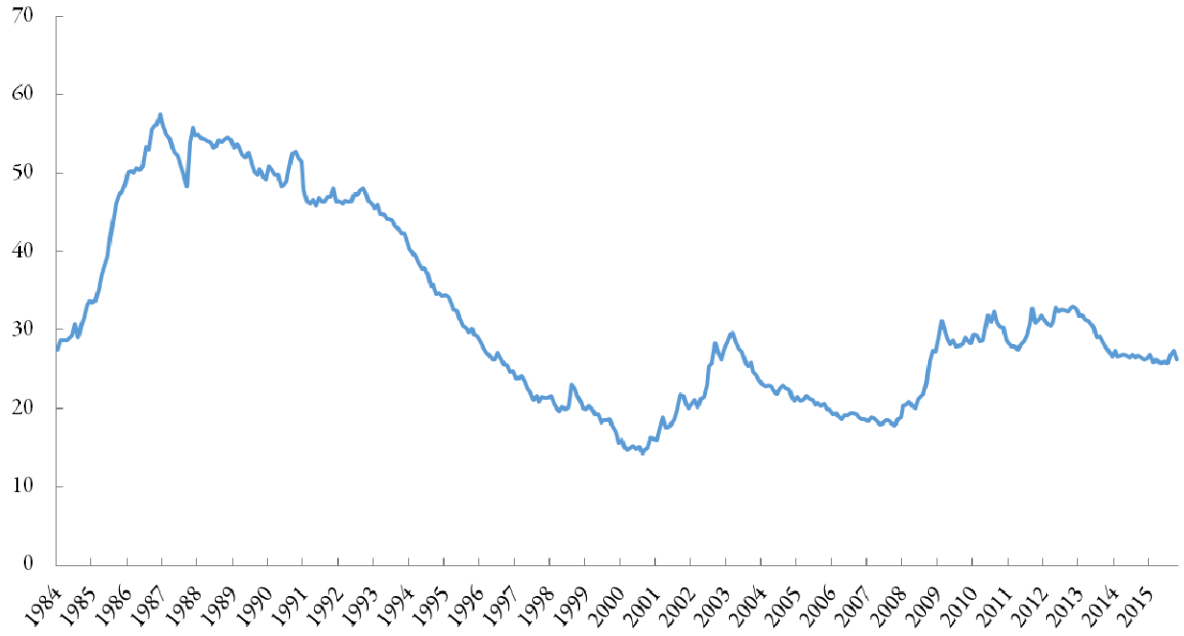
Figure 7: Equity Funds Still Dominate Long-Term Mutual Fund Market
Percentage of long-term fund assets, September 2015



Source: Investment Company Institute

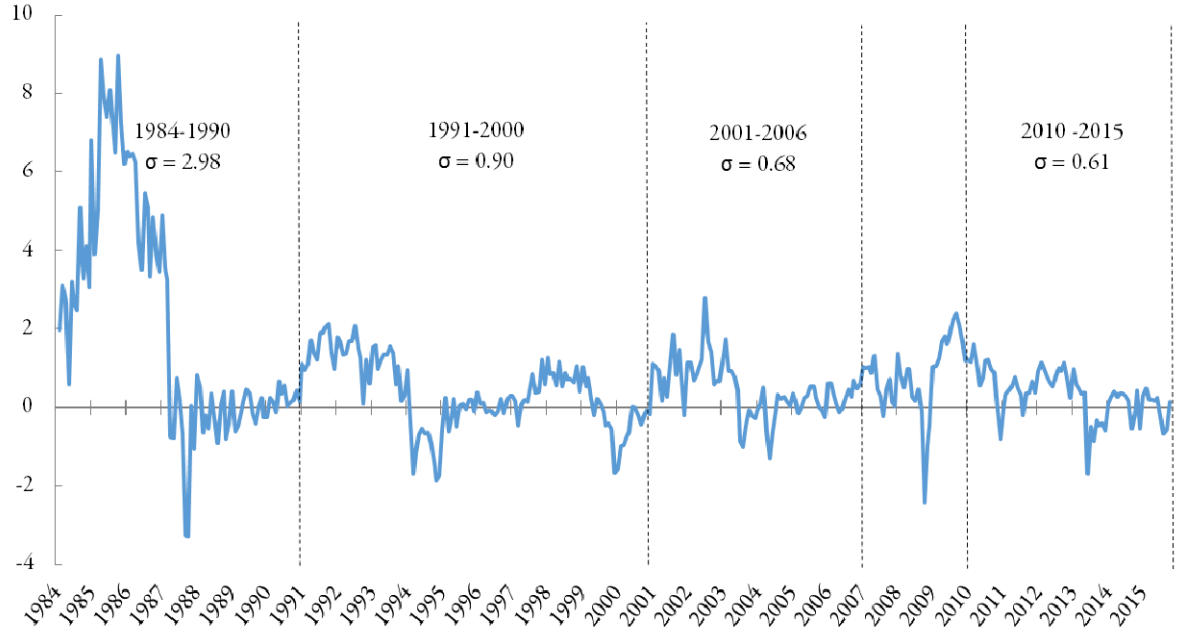
[23] Dan Schrass, Michael Bogdan, and Sarah Holden, "Characteristics of Mutual Fund Investors, 2012," *ICI Research Perspective*, Vol. 18, no. 7 (November 2012). Available at http://www.ici.org/pdf/per18-07.pdf.

Figure 8: Assets in Bond Mutual Funds as a Share of the Assets of Long-Term Mutual Funds
Percentage; monthly, January 1984-October 2015



Source: Investment Company Institute

Figure 9: Flows to Bond Mutual Funds
Percentage of previous month's assets; monthly, January 1984-October 2015



Note: Fund flow variability is measured as standard deviation (σ) of monthly fund flows for indicated sub-periods.
Source: Investment Company Institute

In addition, as bond assets have grown, flows to these funds have, if anything, become less variable (Figure 9). For example, monthly variability in bond fund flows, as measured by standard deviation, was 2.98 percent from 1984-1990, 0.90 percent from 1991-2000, 0.68 percent in the pre-crisis period 2001-2006, and 0.61 percent during the post-crisis period 2010-October 2015.[24]

Yet another reason recent growth in bond fund assets need not raise concerns is that much of that growth reflects secular trends. One such long-term trend is the shift of investors from direct holdings of securities to indirect holdings through mutual funds. Figure 10 shows that from 2005 to 2014, households' direct holdings of stocks and bonds declined, which has in part been offset by an increase in holdings of mutual funds. In addition, the recent shift toward bond funds reflects U.S. demographics: as Baby Boomers age, they can be expected to shift toward less volatile assets, such as bond mutual funds. These trends reflect investors' long-term planning decisions, which are unlikely to change abruptly as a result of market corrections. The DERA study does not examine these secular influences.

Figure 10: Household Net Investments in Funds, Bonds, and Equities
Billions of dollars, 2005–2014

	Long-term funds*	Securities held directly	
	Total	Bonds	Equities
2005	335	33	-461
2006	392	-107	-654
2007	470	497	-1,159
2008	-46	687	-348
2009	595	60	-84
2010	455	-82	-281
2011	257	-210	-364
2012	481	-230	-335
2013	431	-533	-144
2014	416	-455	-156

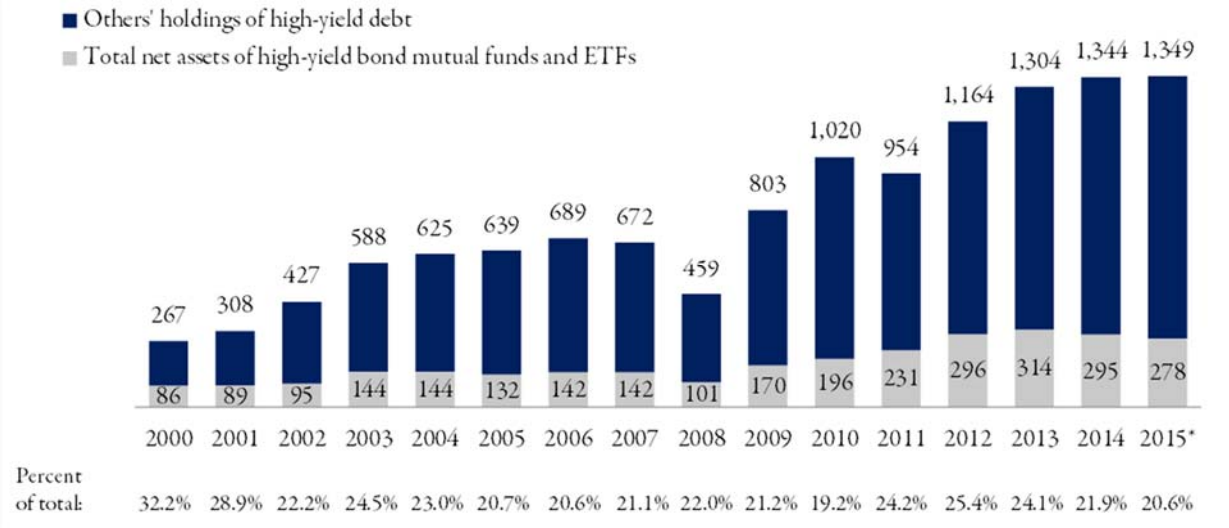
*Data for long-term registered investment companies include mutual funds, variable annuities, ETFs, and closed-end funds.
Note: Household net investments include net new cash flow and reinvested dividends.
Sources: Investment Company Institute and Federal Reserve Board

Many of these points are illustrated by the experience of bond funds during the financial crisis. From August to December of 2008, spreads between yields on lower-rated (Baa) bonds and Treasury securities widened by nearly 300 basis points, reflecting the weakening economy and immense stresses on the financial markets and the banking system. This, in turn, significantly depressed returns on corporate bonds. Reflecting both the falling returns on corporate bonds and, importantly, a shift by

[24] In Figure 9, standard deviation is denoted as σ.

some investors to the safety and liquidity of the Treasury market, bond mutual funds experienced net outflows totaling $65 billion from September to December 2008.[25] This amounted to only 3.6 percent of bond mutual funds' assets as of August 2008. Moreover, in none of these individual months did net outflows exceed more than 2.5 percent of bond fund assets (outflows were $41 billion in October 2008, which was 2.4 percent of bond mutual fund assets as of September 2008). In short, during the worst part of the worst financial crisis since the Great Depression, bond mutual fund investors remained calm and did not redeem precipitously.

Figure 11: High-Yield Bond Mutual Funds' and ETFs' Share of Outstanding High-Yield Bonds
*Billions of dollars; year-end, 2000–2015**



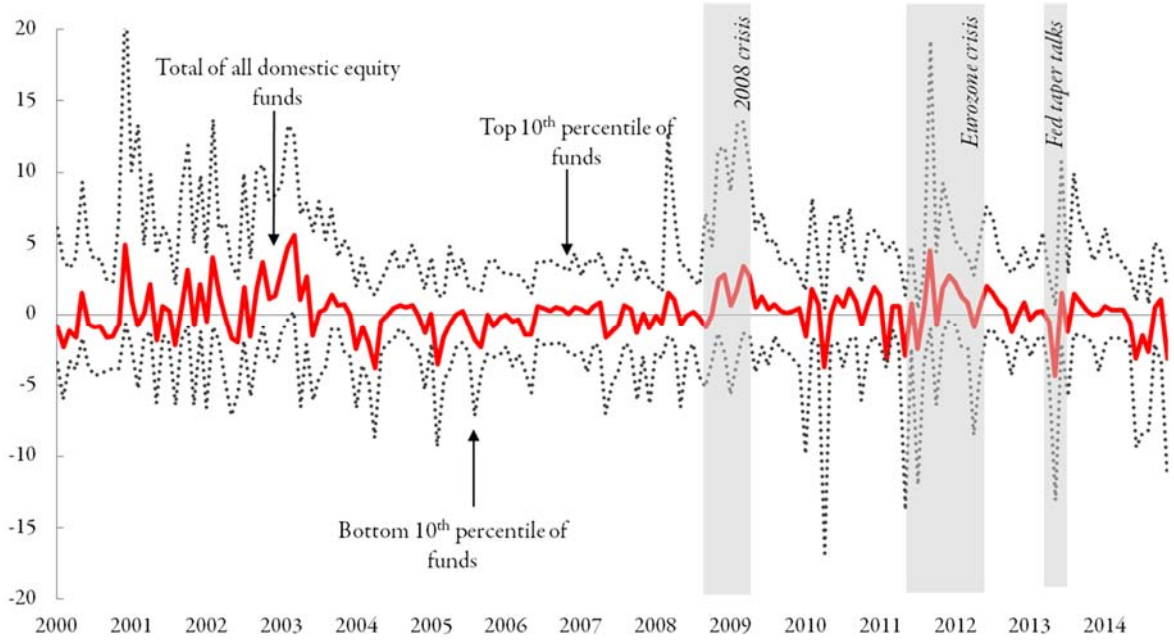
*Data are as of September 30, 2015.
Note: Data include ETFs but exclude high-yield funds designated as floating rate funds. Outstanding high-yield bonds measured as the market value of the bonds in the BofA Merrill Lynch US High Yield Index. Data exclude funds that invest primarily in other funds.

Sources: Investment Company Institute and Bloomberg

The Rule Proposal also suggests the SEC has concerns about growth in certain types of bond funds, notably high-yield bond funds. It is unclear, however, why the growth in the assets of high-yield funds should pose any greater concerns about redemptions now than 15 years ago. The assets of high-yield bond funds certainly have grown in the past several years, rising from $86 billion in 2000 to a peak of $314 billion in 2013, before receding a bit in 2014 and 2015. Concerns that growth in high-yield bond fund assets could make it harder for funds to meet redemptions overlooks the fact that high-yield bond funds actually account for a *smaller* share of the high-yield market than they did in 2000. This is the result of growth in total high-yield debt outstanding, from $267 billion 2000 to $1,349 billion 2015 (Figure 11).

[25] From September to December 2008, investment grade bond funds experienced net outflows of $38.3 billion. Over the same period, net outflows from high yield bond funds totaled just $1.1 billion.

Figure 12: Modest Outflows from High-Yield Bond Funds Even During Times of Market Stress
Net new cash flow as a percentage of assets; monthly, February 2000–December 2014

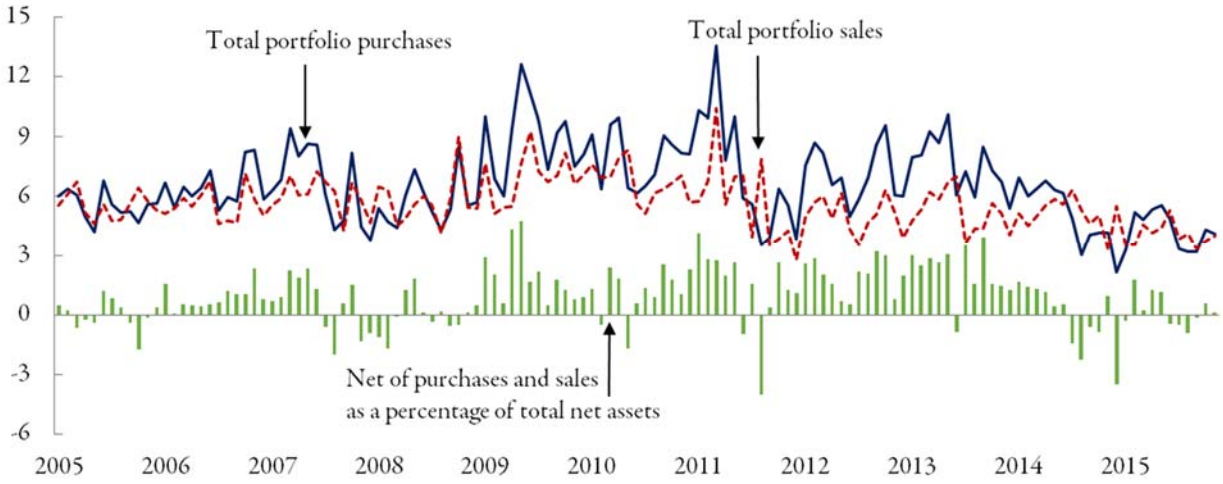


Note: Data exclude high-yield funds designated as floating rate funds. Data also exclude funds with less than $10 million in total net assets over the February 2000–December 2014 period, mutual funds that invest primarily in other mutual funds; and funds in any fund-month where a merger or liquidation takes place. One observation for the top 10th percentile of funds in January 2001 is hidden to preserve the scale.
Source: Investment Company Institute

Also, growth in the assets of high-yield bond funds has not led to greater flow variability (Figure 12). Overall flows to high-yield funds have remained moderate; while some funds at times have had substantial outflows, at almost all points other high-yield funds have had inflows. Thus, outflows at one fund, even substantial outflows that the fund must meet by selling securities, are not an issue if other high-yield funds are at the same time buying the same or similar securities.

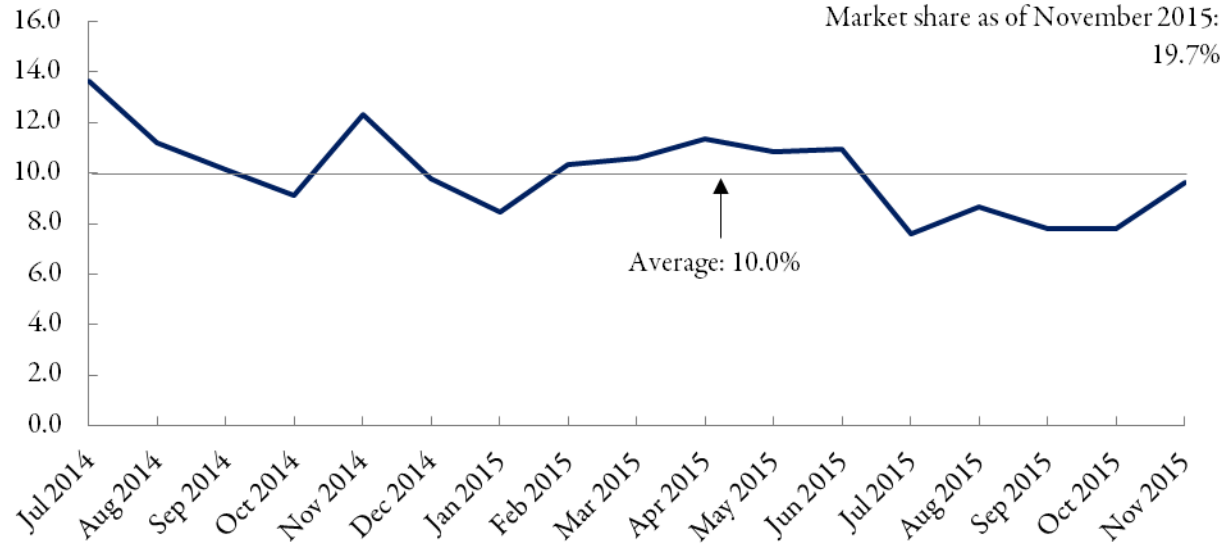
In addition, concerns about high-yield bond funds may reflect a misimpression that these funds trade monolithically, all selling or buying high-yield bonds in the same direction at the same time. Figure 13 shows that that is not the case. The figure shows high-yield bonds funds' gross purchases and gross sales of securities on a monthly basis from 2005 to 2015. As seen, in all months, some of these funds are purchasing securities while others are selling (or, the same funds may be both purchasing and selling within a given month).

Figure 13: High-Yield Bond Mutual Funds Trade Bonds Each Month but Not in One Direction
Percentage of 12-month average total net assets; monthly, January 2005–November 2015



Source: Investment Company Institute

Figure 14: U.S. High-Yield Mutual Funds' Corporate Bond Trading As Share of All High-Yield Transactions
Percentage; monthly, July 2014–November 2015



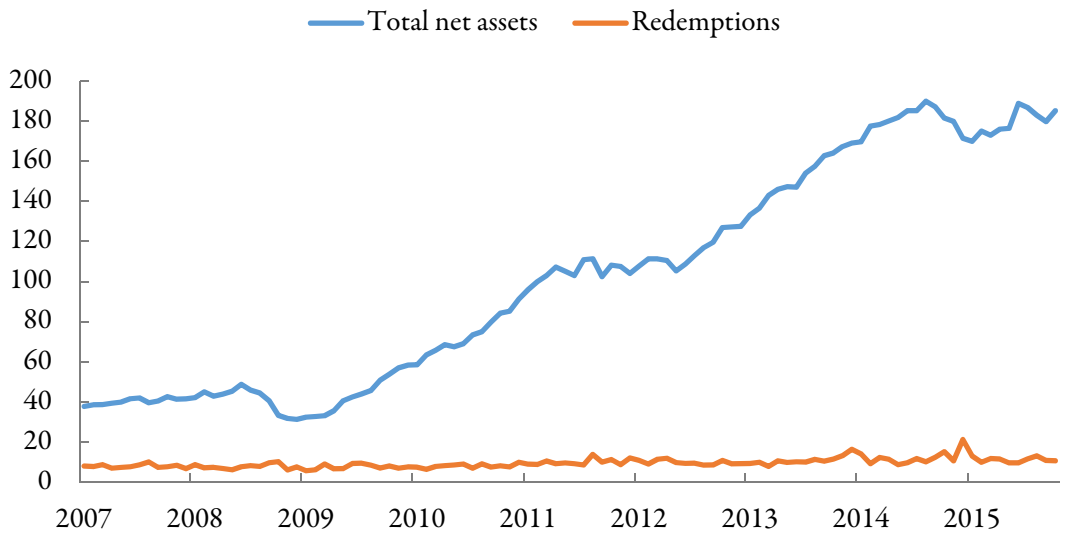
Note: Data exclude high-yield funds designated as floating rate funds. Aggregate data for high-yield 144A transactions are only publicly available starting July 2014.
Sources: Investment Company Institute and FINRA TRACE

Finally, concerns that outflows from high-yield funds could create difficulties are less apparent when set against the backdrop of these funds' share of market trading. High-yield funds' aggregate trading volume as a share of total high-yield bond market trading volume averaged 10 percent from the second half of 2014 to 2015 (Figure 14). Although the high-yield market has declined over the past few months and high-yield mutual funds have seen outflows, trading by high-yield funds has not been particularly elevated relative to market trading volume, rising only a bit in November 2015. Moreover, high-yield funds trade less than in proportion to their share of total high-yield bonds outstanding. For instance, in November 2015, high-yield funds in aggregate accounted for only 9.6 percent of the volume of high-yield trades even though these funds held 19.7 percent of high-yield debt outstanding.

b. Does the SEC Provide Evidence that Alternative Funds Pose Concerns?

In a number of instances the Rule Proposal and the DERA study highlight the recent strong growth of "alternative funds."[26] To be sure, the assets of alternative funds have grown in recent years. According to ICI's classification, the assets in alternative funds grew from about $40 billion in 2008 to almost $200 billion by 2015 (Figure 15).

Figure 15: Assets and Gross Redemptions in Alternative Funds
Billions of dollars; monthly, January 2010–October 2015



Source: Investment Company Institute

The proposal suggests that these funds may be investing in more illiquid assets and facing greater redemption risk, especially since they lack the tools that hedge funds may have to restrict redemptions (e.g., lock-up periods or side pockets). It is certainly true, as the DERA study notes, that

[26] *See,* for instance, Rule Proposal at 27 and DERA study at 1.

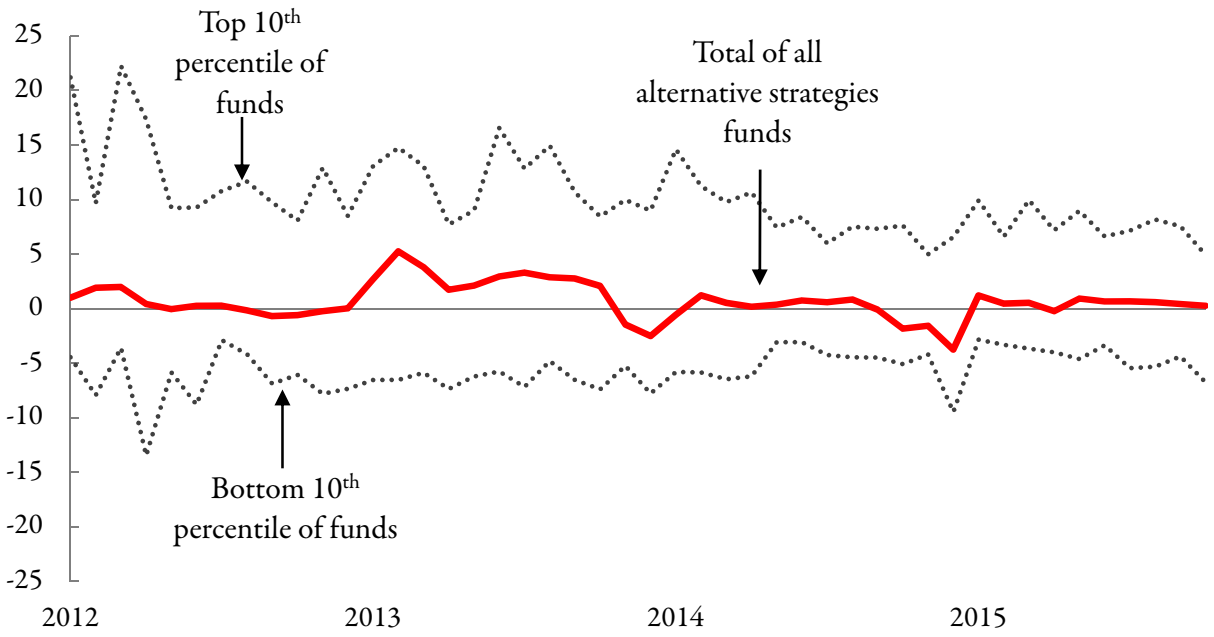
alternative funds have historically experienced greater flow variability than other, more mature fund types. For instance, Figure 5 shows that the monthly flow variability of alternative funds was 2.7 percent over 2000 to 2014, compared to 0.3 percent for all mutual funds.

As indicated earlier, though, funds with greater flow volatility manage to that. The DERA study, for instance, indicates that in 2014 alternative funds held 30.5 percent of their assets in equities, 11.1 percent in government bonds, and another 22.9 percent in cash.

In addition, as noted earlier, as funds grow, their flows tend to become less variable as a percent of fund assets. This holds for alternative funds. As shown in Figure 15, gross redemptions in alternative funds have risen little despite the substantial growth in such funds' assets since 2007. Put differently, gross redemption rates on these funds have fallen sharply. Consequently, growth in fund assets does not necessarily imply any greater difficulty in predicting fund flows. In fact, the reverse is more likely. Figure 16 suggests that flow variability across alternative funds has perhaps narrowed modestly since 2012.

Figure 16: Flow to Alternative Strategy Funds

Net new cash flow as a percentage of assets; monthly, January 2012–October 2015



Note: The figure excludes data for funds with less than $10 million in total net assets over the January 2012 to October 2015 period, data for mutual funds that invest primarily in other mutual funds, and data for funds in any fund-month where a merger or liquidation takes place.
Source: Investment Company Institute

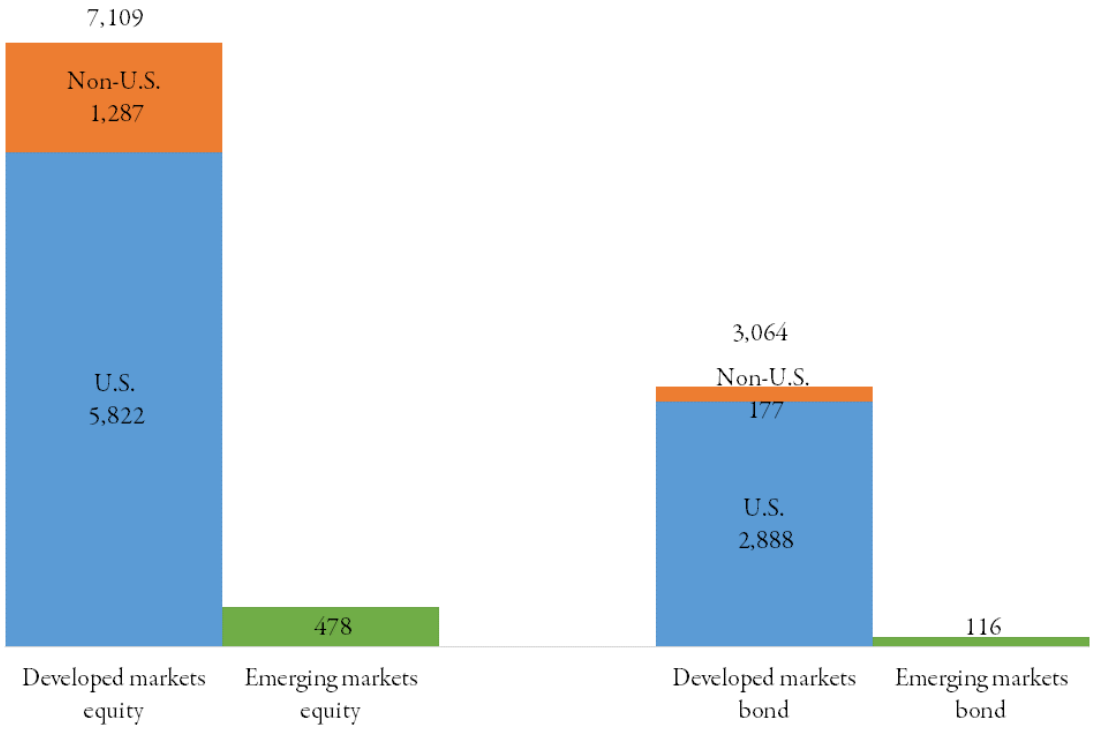
c. Does Growth in the Assets of Emerging Market Funds Pose Liquidity Concerns?

The Rule Proposal highlights the growth in emerging market equity and bond funds and that these trends "may entail increased liquidity risk … [and that] Commission staff economists have found

that … foreign bond funds (including emerging market debt funds) … have historically experienced relatively more volatile and unpredictable flows that the average mutual fund, which could increase these funds' liquidity risk.

There is scant evidence supporting this hypothesis. The DERA study itself provides no evidence that such funds, as a result of their greater assets under management, have had difficulty meeting investor redemptions.

Figure 17: U.S. Mutual Fund Investment in Developed and Emerging Market Securities
Billions of dollars, December 2014



Source: EPFR Global

Significantly, most of the foreign equities and bonds held by U.S. domiciled funds are issued by developed economies in Europe and Asia. The financial markets in these countries are generally much deeper and more liquid than those in emerging economies. In 2014, U.S. domiciled mutual funds held an estimated $1.3 trillion in developed foreign equity markets compared with $478 billion in emerging foreign equity markets (Figure 17). U.S. domiciled mutual funds held an estimated $177 billion in debt issued in developed foreign markets and $116 billion in debt issued in emerging foreign markets.

As with high-yield funds, it is not at all clear that emerging market funds will harm remaining shareholders by selling securities to meet redemptions. Emerging market funds remain proportionately small relative to the markets in which they invest. Thus, it is not obvious that an emerging market fund

which is selling securities will depress the prices of its remaining holdings to the detriment of remaining shareholders. According to ICI calculations, in 2013 regulated funds domiciled primarily in the U.S. and Europe held just 8.5 percent of emerging market equity capitalization. In 2014, such funds held less than 15 percent of the dollar value of tradable (i.e. "free-float") emerging market debt.

In sum, funds have a long history of meeting redemptions. There is little evidence to support the hypothesis that variability of fund flows, growth in fund assets, or development of new types of funds should pose concerns in and of themselves, much less concerns of a nature that justifies the Commission's prescriptive liquidity management proposals. Funds manage their assets in accordance with their obligations, which includes the obligation to meet shareholder redemptions. Further, they do so in a manner that is fair to remaining shareholders, as we discuss in the next section.

III. There Is No Evidence that Funds Manage Liquidity and Redemptions in Ways Detrimental to Shareholders

As discussed in the previous section, long-term funds have through history accommodated trillions of dollars in shareholder redemptions. Nevertheless, the Rule Proposal suggests that funds meet redemptions in ways that may disadvantage non-redeeming shareholders. Notably, it posits that funds meet redemptions by selling their most liquid assets first, which may harm the interests of remaining shareholders.[27]

To support its hypothesis that funds meet redemptions by selling their most liquid assets first, the Rule Proposal points to the DERA study. As far as we can tell, the DERA study never states directly that funds sell their most liquid assets first to meet redemptions. The study provides indirect evidence on this issue, but the evidence is at best mixed and in important aspects supports the conclusion that funds balance the interests of redeeming and remaining shareholders reasonably.[28]

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[27] Rule Proposal at 18; Rule Proposal at 292 referencing DERA study at 43-46 and stating that "Staff analysis of the impact of large redemptions on portfolio liquidity suggests that the typical U.S. equity fund … [appears] to disproportionately sell the more liquid portion of its portfolio for this purpose."

[28] The Rule Proposal at 305-306 cites a study by Greene and Hodges (2002) as indicating that there can be "significant adverse consequences to remaining investors in a fund when it fails to adequately manage liquidity." But the Greene and Hodges (2010) study offers no support for a three-day liquid asset minimum or six-bucket scheme. That study analyzed the dilutive effects of frequent and possibly large net cash flows (both positive and negative) on the returns of long-term investors in international equity funds nearly 15 years ago. Greene and Hodges proposed solutions to limit the effects on funds' remaining shareholders: (a) limiting the number of monthly exchanges; (b) improving a fund's fair-valuation techniques. See Jason Greene and Charles Hodges (2002), "The Dilution Impact of Daily Fund Flows on Open-end Mutual Funds," *Journal of Financial Economics*, 65, 131-158.

A. Do Funds Sell Their Most Liquid Assets First to Meet Redemptions?

The Rule Proposal in a number of places suggests that to meet redemptions funds sell their most liquid assets first.[29] If so, that could harm the interests of remaining shareholders. Our understanding, however, is that funds use a much more nuanced approach to meeting redemptions, with their actions guided by market conditions, expected investor flows, and other factors. For example, during a market downturn, a given fund might determine that it can add shareholder value by buying some illiquid securities—with liquidity at a premium, the fund might judge that the prices of such securities are depressed relative to their fundamental values and thus represent a buying opportunity. On the other hand, the fund might seek to add shareholder value by selling some of its more liquid securities (which, being in high demand, are trading at a premium to fundamental value). If a fund experiences outflows, but expects that in the near-term those outflows will be offset by inflows from other investors (such as from periodic investments made through 401(k) plans), a fund might elect to meet those redemptions by drawing on its short-term assets.

Funds may in fact feel that it is necessary and appropriate to meet outflows by selling a range of the fund's assets, a "slice" of the portfolio, rather than using up the fund's most liquid assets to the detriment of remaining shareholders.[30] Selling a slice of the portfolio will help preserve the fund's asset allocation and adherence to its investment goals. For index funds (including the vast majority of U.S.-registered ETFs), this is true essentially by definition: an index fund that does not sell a portfolio slice when meeting redemptions invariably will create tracking error.

There is also a countervailing effect. During a market downturn, all else equal, a fund's short-term asset ratio may *rise*. When the market declines, the value of a fund's longer-term securities may fall. In contrast, the fund's short-term assets (such as cash) will maintain their value. This will raise the ratio of the fund's short-term assets as a percent of its total assets. Thus, if a fund does not experience outflows, it may need to rebalance its portfolio by using some of its short-term assets to purchase stocks or bonds. If, on the other hand, the fund does experience outflows, it can seek to keep it short-term asset ratio in balance by using short-term assets to meet redemptions.

All of this suggests that if funds are managing their short-term assets effectively in light of the countervailing forces—a drop in the market, redemptions, a decline in market prices, and increases in

[29] Rule Proposal at 18; Rule Proposal at 292 referencing DERA study at 43-46.

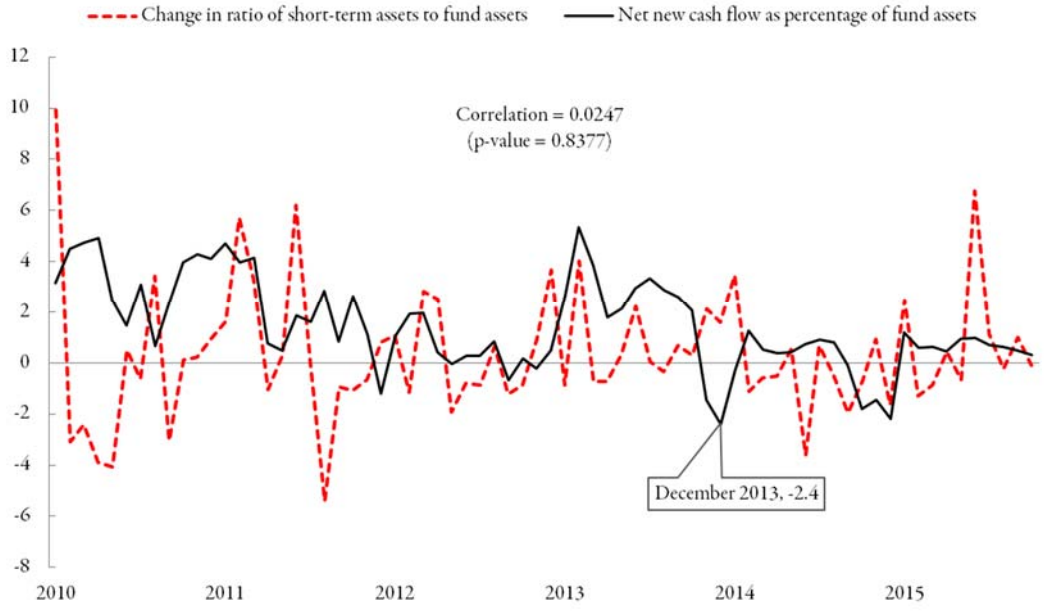
[30] The Rule Proposal cites one academic study that might be interpreted as supporting this contention: Joshua Coval and Erik Stafford (2007), "Asset fire sales (and purchases) in equity markets," *Journal of Financial Economics*, 86, 479-512. For example, Coval and Stafford (2007) state that "Funds experiencing extreme inflows or outflows do not appear to transact with any greater frequency in larger, more liquid … holdings than funds that are subject to moderate flows. This suggests that funds experiencing extreme inflows or outflows do not mitigate the costs of their liquidity demands by transacting selectively in holdings." In other words, those authors find no evidence that funds consistently use their most liquid assets first to meet redemptions.

funds' short-term assets as a portion of their portfolios—funds short-term asset ratios may simply remain about unchanged, or at least be uncorrelated with fund flows.

There is clear evidence of this. Short-term asset ratios, even among funds typically thought of as holding less liquid assets, do not deteriorate much, if at all, in response to net cash outflows. For example, Figure 18 shows flows to all alternative strategy mutual funds as a percentage of their assets (black line). The figure also plots the one-month change in the short-term asset ratio of those funds (red dashed line).

Figure 18: Alternative Strategy Fund Flows Uncorrelated with Changes in Short-Term Asset Ratio

Percentage; monthly, January 2010-October 2015



Source: Investment Company Institute

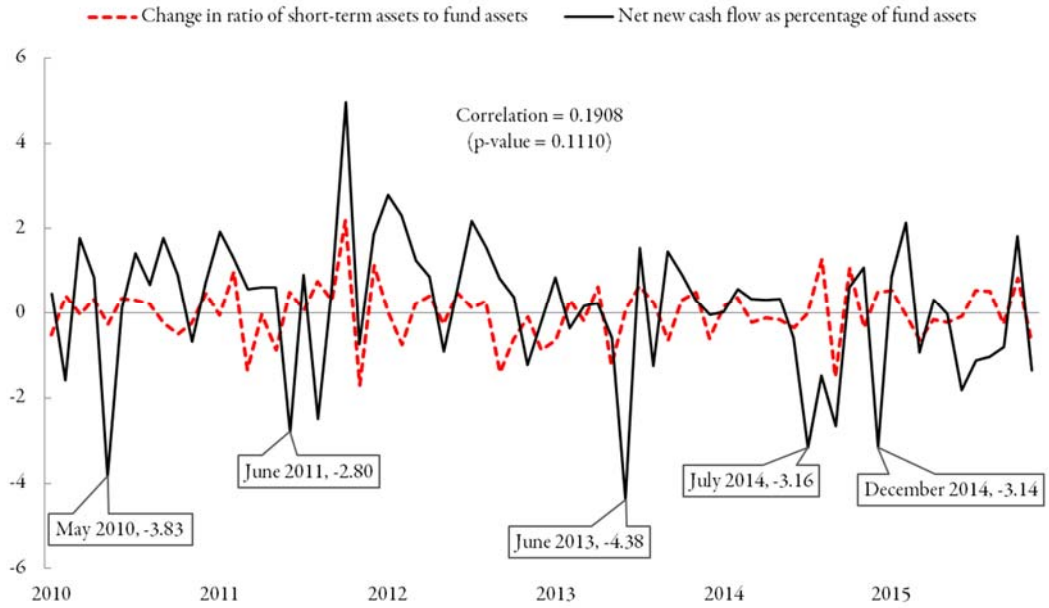
As the figure shows, there is virtually no relationship between the two lines. The correlation between the two lines, though positive, is small (0.0247) and statistically insignificant. In fact, even during periods when these funds experienced their largest outflows, short-term asset ratios of alternative strategy funds did not fall. For example, in December 2013, alternative strategy funds saw outflows of 2.4 percent of their assets. The short-term asset ratio of these funds, however, did not decline but instead *rose*. This is evidence that funds are managing their short-term assets effectively as they meet redemptions.

The same is true for high-yield funds. Figure 19 shows flows to all high-yield mutual funds as a percentage of their assets (black line) along with the one-month change in the short-term asset ratio of those funds (red dashed line). As with alternative strategy funds, the correlation between the two lines is small and insignificant. Even during months when high-yield funds experience larger outflows, there

is little evidence that funds meet those redemptions by reducing the ratio of short-term assets to fund assets. The figure highlights five months since 2010 when high-yield funds experienced relatively large outflows. In each of these months, their short-term asset ratios fell only a little or even rose. For example, in December 2014, high-yield funds saw outflows of 3.14 percent of their assets. However, the short-term asset ratio of these funds did not decline but instead *rose*. In sum, high-yield funds also appear to be managing their short-term assets quite effectively in the face of redemptions.[31]

Evidence of effective management of fund liquidity is apparent among individual funds. Presumably, if funds meet redemptions effectively, their short-term asset ratios may remain fairly stable even when facing large redemptions. Thus, during months when funds are in aggregate experiencing outflows, in cross-sectional data there should be little correlation between fund flows and changes in funds' short-term asset ratios.

Figure 19: High-Yield Bond Funds' Flows Uncorrelated with Changes in Short-Term Asset Ratio
Percentage; monthly, January 2010-November 2015



Note: Data exclude funds designated as floating rate high-yield funds. Net new cash flow calculated as a percentage of previous-month total net assets.
Source: Investment Company Institute

Figure 20 searches for a cross-sectional relationship using regressions for the each of the five individual months in Figure 19 (i.e., May 2010, June 2011, June 2013, July 2014, and December 2014)

[31] The last data point shown in Figure 19 is for November 2015, when high-yields experienced outflows of 1.36 percent of their assets. ICI monthly data are not yet available for December 2015. ICI weekly flow estimates—which, in contrast with the data in Figure 19, include funds designated as floating rate high-yield funds—suggest that high-yield funds saw outflows of about 4.1 percent of their assets in December 2015.

that high-yield funds experienced their largest outflows over the past several years. There is no obvious relationship: for four of the five individual months, the β coefficient is small and statistically insignificant. For two of the months (June 2011, June 2013), the coefficient is negative, which if taken at face value indicates that during those two months funds with outflows tended to *increase* their holdings of short-term assets as a percentage of their portfolios. In only one month (December 2014) is the coefficient positive and statistically significant, which if taken at face value would indicate that as funds experienced redemptions, their short-term assets fell as a percentage of their portfolios. Even in that case, however, the relationship is statistically weak (it explains only 7.5 percent of the variation in changes in funds' short-term asset ratios) and is economically small (in December 2014, the median fund in Figure 20 had outflows of 2.2 percent of its assets, implying an expected drop in its ratio of short-term assets of 0.37 percent; this was much smaller than the short-term asset ratio of 4.5 percent for the median high-yield fund in November 2014).

Figure 20: High-yield Fund Flows Unrelated to Changes in Short-Term Asset Ratios
Change in fund's short-term asset ratio = α + β net new cash flow to fund; selected months

	Regression results		
Period	**α (Std. error)**	**β (Std. error)**	**R^2**
May 2010	0.49 (0.37)	0.11 (0.08)	0.056
June 2011	0.46 (0.33)	-0.01 (0.08)	0.000
June 2013	0.21 (0.26)	-0.02 (0.04)	0.005
July 2014	-0.12 (0.21)	0.01 (0.06)	0.001
Dec 2014	0.59 (0.36)	**0.17** (0.05)	0.075

Note: Data exclude mutual funds that invest in other mutual funds, variable annuities, any fund with less than $10 million in total net assets, funds specifically designed for frequent trading, funds designated as floating rate funds, and any fund-month where a merger or liquidation takes place for a fund. **Bolded** coefficient represents statistical significance at the 5 percent level.
Source: Investment Company Institute

In sum, the evidence indicates that high-yield funds have managed their portfolios effectively by meeting redemptions without impairing their holdings of short-term assets.

B. Does The DERA Study Provide Evidence that Funds Manage Liquidity in Ways that Harm Non-redeeming Shareholders?

The previous subsection argued that funds manage their portfolios by balancing the interests of redeeming and remaining shareholders. We presented evidence for high-yield funds that this is in fact the case. The Rule Proposal, however, suggests that the DERA study reaches a different conclusion, namely that funds "sell relatively more liquid assets (as opposed to a strip [i.e., a "slice"] of the fund's portfolio) to meet redemptions, and that as the fund's liquidity decreases, a fund will become even more

likely to sell its relatively more liquid assets (rather than a strip of its portfolio) to meet redemptions (thus resulting in decreased liquidity in the fund's portfolio)."[32]

In this subsection, we examine this contention. We can find no direct statement in the DERA study that funds sell their most liquid assets first. The DERA study offers indirect evidence on this issue, but it is at best mixed. Some evidence in the DERA study supports the hypothesis that funds balance the interests of redeeming and remaining shareholders reasonably. For example, the study finds that as market liquidity declines, fund liquidity declines proportionately less. This may be indirect evidence that fund advisers manage fund portfolios to mitigate the effects on non-redeeming fund shareholders.

a. DERA's Assessment of U.S. Domestic Equity Fund Portfolio Liquidity

The DERA study finds that large-cap U.S. equity funds have more liquid portfolios, that larger funds hold more liquid portfolios, and that equity funds seem to insulate fund investors from changes in market liquidity. A one percent drop in equity market liquidity is associated with a 0.82 percent decline in liquidity of the average U.S. equity fund. This means that a drop in overall market liquidity does not translate fully into a decline in a fund's liquidity. The study does not interpret this result. It could mean that U.S. equity funds tend to hold equities that are more liquid than the overall equity market.[33] Or it could be that equity funds take steps to enhance portfolio liquidity when it begins to dry up, such as during periods of financial stress. Whatever the case, the DERA finding does not appear to be reflective of funds managing portfolios and redemptions in ways that harm the interests of non-redeeming shareholders.

b. DERA's Assessment of Municipal Fund Portfolio Liquidity

For bond funds, the DERA study provides only a very limited assessment of fund liquidity, and then only for municipal bond funds.

In particular, the DERA study examines how municipal bond funds alter their overall holdings of municipal securities and "cash" (i.e., short-term assets) in response to investor flows. DERA finds that a "1% outflow results in a 0.05% increase in the percentage of the fund held in municipal bonds

[32] Rule Proposal at 19.

[33] See Agarwal, V., Mullally, K. A., Tang, Y. and Yang, B. (2015), "Mandatory Portfolio Disclosure, Stock Liquidity, and Mutual Fund Performance," *Journal of Finance*, vol. 70, 2733–2776. The paper finds that liquidity improves for securities that 'informed' mutual funds hold. Specifically, the authors conclude that "more frequent mandatory portfolio disclosure by informed funds improves the liquidity of the disclosed stocks. However, increasing the disclosure frequency can hurt these funds' ability to capitalize on their information and thus can reduce their incentives to collect and process information. Therefore, policymakers should weigh the benefits of disclosure to capital markets against the costs borne by informed funds."

and a 0.05% decrease in the percentage of the fund held in cash." The DERA study indicates that the average municipal bond fund holds nearly 2 percent of its assets in cash.[34]

Accordingly, the DERA results indicate that it would take a very large outflow (40 percent at a quarterly rate) to reduce the average municipal bond fund's short-term assets to zero. This supports the hypothesis that municipal bond funds are generally managing their short-term assets sufficiently to meet even large redemptions.

c. Does the DERA Study Provide Evidence That Funds Sell Their More Liquid Assets First?

The Rule Proposal suggests that funds "sell their more liquid assets (as opposed to a strip of the fund's portfolio) to meet redemptions (thus resulting in decreased liquidity in the fund's portfolio."[35] As support, it points to pages 43-46 in the DERA study.[36] The results on those pages in the DERA study, however, are much less definitive than the Rule Proposal suggests.[37]

The DERA study does a bottom-up examination of liquidity only for U.S. domestic equity funds. The study provides a limited analysis of municipal bond fund portfolios but does not assess their liquidity *per se*, and does not otherwise consider the liquidity of either bond mutual funds or bond ETFs. It measured liquidity of domestic equity funds using a modified version of the "Amihud" measure.[38] This measure assesses "illiquidity" of a given equity security as the absolute value of the daily return on the equity divided by its trading volume on the same day.

Based on the Amihud illiquidity measure for U.S. domestic equity funds, the DERA study concludes that a "10% outflow increases the impact of selling $10 million of the asset-weighted average equity portfolio holding by 11 basis points." This is a key result and one that the Rule Proposal cites as support for its hypothesis that funds sell their most liquid assets first to meet redemptions.

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[34] DERA study at 11, table 3.

[35] Rule Proposal at 19.

[36] Rule Proposal at 292.

[37] We can find no explicit statement in the DERA proposal that funds sell their most liquid assets first to meet redemptions. The Rule Proposal makes this claim based on results in pages 43-46 of the DERA study. The closest statement we can find to this effect is on page 46, where the DERA study states "we find that equity portfolio liquidity decreases for U.S. equity funds that experience outflows." This is quite different from stating that funds use their most liquid assets first to meet redemptions. For example, as we show later, this statement in the DERA study is consistent with fund flows and fund liquidity being driven *independently* by a third factor: overall market conditions.

[38] DERA study at 25-26 defines the Amihud illiquidity measure.

It is far from clear whether or how this result supports the Rule Proposal's hypothesis. First, the Amihud illiquidity measure is just one measure of market liquidity. There are a range of other measures, such as bid-ask spread, market volume, number of trades, quotes, active market participants, and so on. It would be incautious to reach the Rule Proposal's sweeping conclusion that funds generally meet redemptions by using their most liquid assets first on the basis of a single liquidity measure.

Second, it remains unclear whether this result would apply to larger funds. As the DERA study notes, larger equity funds tend to have less variable flows. An unexpected outflow of 10 percent would be highly unusual for a large U.S. equity fund.

Third, proof that funds sell their most liquid assets first to meet redemptions should rest upon a direct test that looks for a link between funds' sales of portfolio securities and controls for changes in overall market liquidity. The DERA analysis does not do that. Instead, it studies the correlation between fund flows and changes in the measured liquidity of fund portfolios. The difficulty with DERA's approach is that fund flows and changes in fund liquidity can be correlated with one another, but could both be caused by a third factor: overall market conditions.

The DERA analysis does not control for this possibility. For example, when market liquidity declines, fund liquidity, as indicated by the Amihud measure, will almost certainly decline even if fund advisers and shareholders take no action. Figure 21 shows the monthly average of the Amihud illiquidity measure for the S&P 500 from January 2000 to December 2014.[39] As the figure shows, stock market liquidity fell (it became more expensive to sell $10 million in S&P 500 stocks) during the second half of 2008 and remained poor into early 2009.[40] Thus, according to the Amihud measure, as the stock market declined during the crisis, it became more illiquid.

This is significant because funds often see outflows during market downturns. For example, Figure 22 shows that equity mutual funds experienced modest monthly outflows during late 2008 to early 2009, precisely the same time that overall stock market liquidity as measured by the Amihud measure was declining.

Thus, although the Rule Proposal interprets the DERA result as indicating that funds meet redemptions by using their most liquid assets first, there is a more compelling and more benign hypothesis: (a) macroeconomic developments (such as a weak U.S. employment report or a slowdown in the Chinese economy) set off a general decline in the stock market; (b) the drop in the market is accompanied by a drop in market liquidity; (c) as the market declines, fund returns fall; (d) investors react to the drop in fund returns by selling modest amounts of fund shares.

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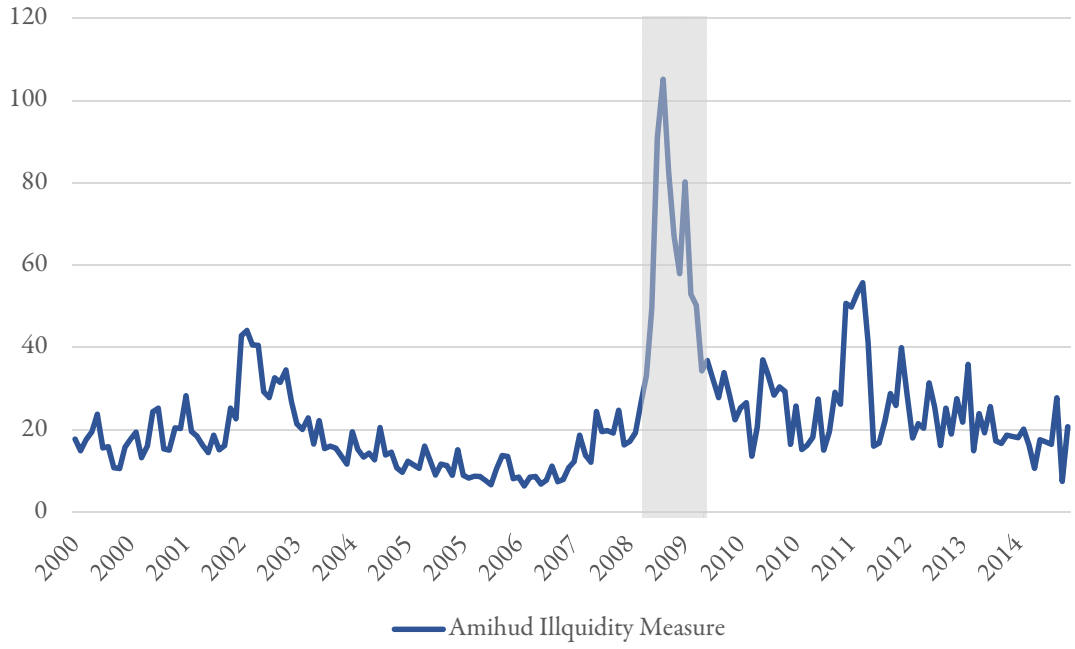
[39] This measure estimates the potential impact of selling $10 million of the S&P 500.

[40] The Amihud illiquidity measure rises in terms of basis points it takes to sell $10 million of the S&P 500, so a rise in illiquidity is the same as a fall in liquidity.

Figure 21: Amihud Measure of Illiquidity for S&P 500 Index

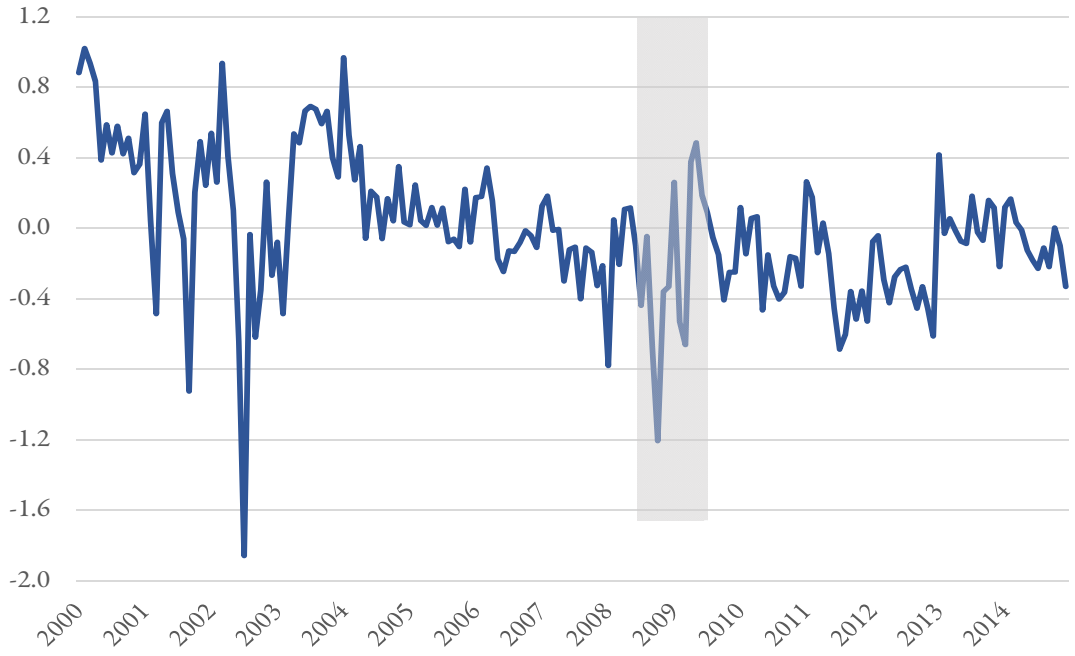
Basis points per $10 million sold, January 2000-December 2014



Sources: Investment Company Institute and Bloomberg

Figure 22: Monthly Flows to Domestic Equity Mutual Funds

Percentage of previous month's assets; monthly, January 2000-December 2014



Source: Investment Company Institute

This hypothesis is consistent with the DERA study's empirical findings. Under this alternative hypothesis, however, the drop in fund liquidity arises from the market, not fund or shareholder actions. The drop in liquidity passes through to funds' holdings regardless of whether fund advisers or shareholders respond to the market downturn. Coincidentally, fund investors do respond to the market decline by selling modestly. The key is that macroeconomic events drive this chain of events, not fund or shareholder actions.

To assess this alternative hypothesis, we use a statistical approach that controls for the inherent endogeneity between fund returns (a proxy for market returns), market liquidity, and fund flows. This approach uses a three-variable "vector autoregression" (VAR). The three variables are the weighted average monthly return on U.S. domestic equity funds, the Amihud illiquidity measure for the S&P 500, and aggregate monthly percentage flows to U.S. domestic equity funds (relative to their assets).[41]

One way to summarize the results is through "impulse response functions." These show the responses of the return on domestic equity funds, the Amihud illiquidity measure for the S&P 500, and aggregate fund flows to a shock to each of those variables (Figure 23). In the figure, the expected outcome is shown as a blue line and 95 percent confidence bands are shown as dashed red lines.

The results are consistent with our alternative hypothesis. The middle column in the figure shows how equity fund flows or market liquidity respond to stock market returns. The effects are one way: stock market returns drive market liquidity and fund flows, not the reverse. An increase (decrease) in market returns causes fund flows to rise (fall), as seen in the yellow-shaded panel of the top row. An increase (decrease) in market returns causes the Amihud illiquidity measure to fall (rise), as depicted in the yellow-shaded box in the middle of the bottom row. In other words, as the stock market falls, markets also tend to become less liquid. Most importantly, neither market returns nor market liquidity appear to be "caused" by fund flows (grey shaded boxes). We believe that the Commission and staff should examine carefully this alternative hypothesis, and reconsider the contention that funds use their most liquid assets first to meet redemptions.

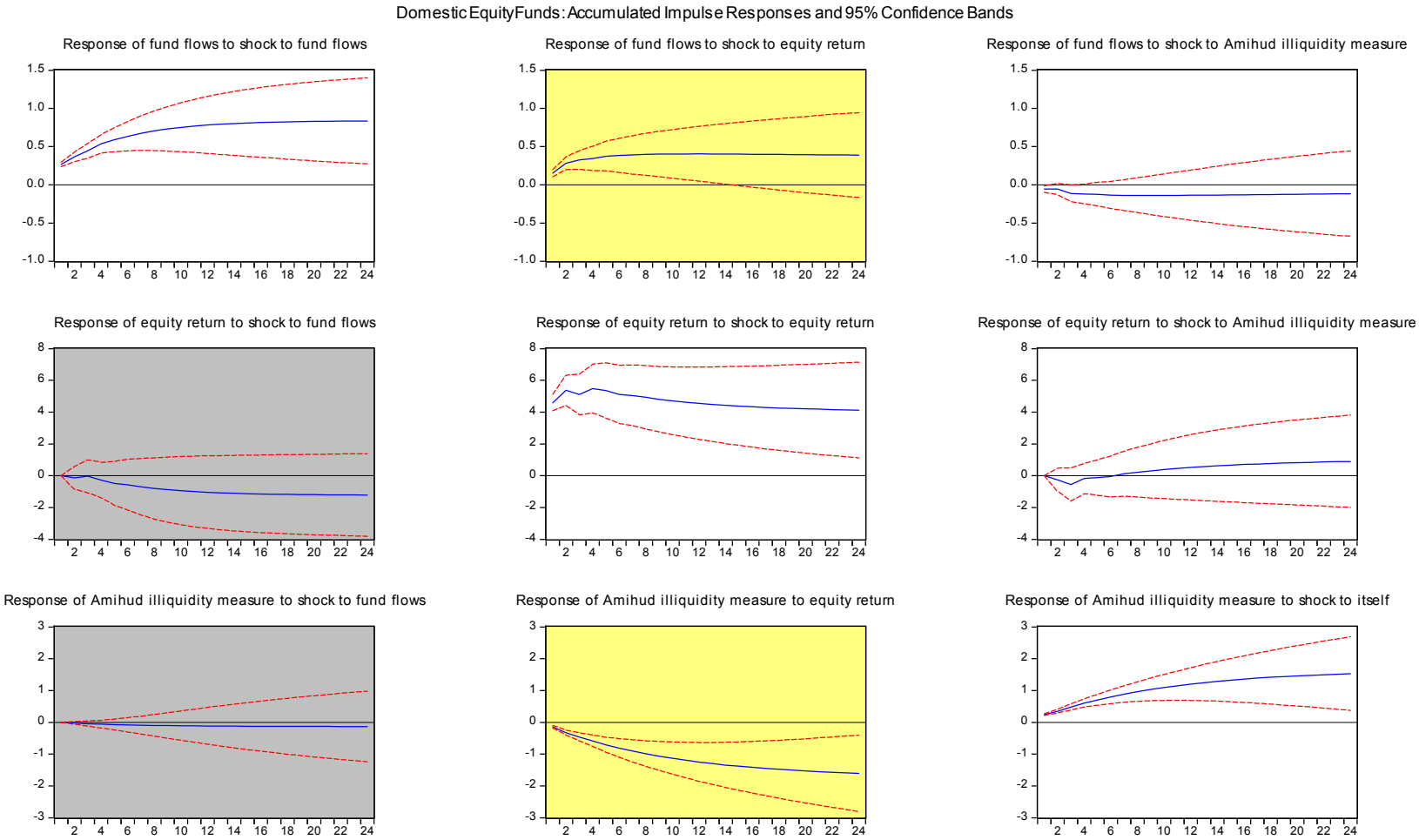
In sum, the Rule Proposal contends that there is evidence that funds may meet redemptions by managing portfolio liquidity in ways that harm non-redeeming shareholders. It asserts that funds may be meeting redemptions by using their most liquid assets first, which could be detrimental to non-

[41] Below, we assess whether fund flows influence equity market liquidity using "impulse responses" from this three-equation VAR. Impulse responses are calculated by "ordering" U.S. domestic equity fund returns first, the natural log of the Amihud illiquidity measure for the S&P 500 second, and U.S. domestic equity fund flows last. This necessarily imposes an identification assumption on the VAR, namely that market returns drive ("cause") fund returns and market liquidity, both of which may drive fund flows. Impulse responses are sensitive to this ordering. The point of this exercise, however, is to demonstrate the Rule Proposal cannot conclude from the DERA study that funds meet redemptions by using their most liquid asset first because the DERA study does not control for the inherent endogeneity between stock market returns, market liquidity, and equity fund flows. In other words, although the DERA study results may be consistent with the Rule Proposal's interpretation, the DERA study results are also consistent with plausible alternative interpretations.

redeeming shareholders. ICI's data, however, do not support this hypothesis. For example, as this section has shown, when funds experience redemptions, even relatively heavy redemptions, their short-term assets (as a percent of the fund's portfolio) often rise. The Rule Proposal claims that the DERA study supports the idea that funds use their most liquid assets first to meet shareholder redemptions. In our view, DERA's evidence on this issue is actually quite mixed. In some cases it clearly supports a view that fund manage redemptions and liquidity appropriately, such as when it provides evidence that funds with more variable flows also hold more liquidity. In addition, we have considered the Rule Proposal's interpretation of the DERA study as providing support for the hypothesis that funds meet redemptions by selling their most liquid assets first. The DERA evidence is indirect only, and, as we show, is consistent with a quite different hypothesis, namely that fund flows and fund liquidity are both independently influenced by market factors. This alternative hypothesis, if correct, provides no basis for the prescriptive aspects of the Rule Proposal.

Figure 23: Response of Fund Flows to Market Liquidity and Returns

VAR ordering: domestic equity returns, Amihud illiquidity measure, domestic equity fund flows; responses in weeks 1 to 24



Source: Investment Company Institute, Morningstar, and Bloomberg

IV. Prescriptive Features of the SEC Proposal Might Lower Market Liquidity and Increase Systemic Risk

The SEC's liquidity proposal is intended to improve funds' ability to meet redemption requests and reduce any potential adverse effects on remaining shareholders. But there is a clear risk that the proposal, notably the three-day liquid asset minimum requirement and six-bucket scheme could be harmful.

As detailed below, the three-day liquid asset minimum requirement is overly restrictive and has the potential to reduce liquidity in certain market segments. The six-bucket scheme could result in a number of anomalous results, such as making the most straightforward kinds of funds (e.g., S&P 500 index funds) look highly illiquid. Given the vast number of CUSIPs trading in the fixed income market, it would be difficult for funds to classify securities according to the six buckets. For this reason, and because the SEC is contemplating requiring funds to publicly report the liquidity measures, in order to achieve consistency across funds and fund complexes, it is foreseeable that fund advisers may have to resort to third-party vendors who offer to provide "liquidity ratings."

That could be especially problematic during stress periods if funds seek to avoid securities that are assessed as becoming less liquid, or whose liquidity is "downgraded" by third-party vendors, perhaps creating cliff events in liquidity similar to those arising when credit agencies downgraded firms during the financial crisis.

A. Rule Proposal Creates a New, Problematic Standard for Assessing Fund Liquidity

The SEC's liquidity rule proposal aims to help ensure that funds are able meet redemption requests, an objective we certainly share. But the Rule Proposal introduces a new and exceptionally problematic standard when it proposes to link regulatory liquidity to the sales of securities at prices not materially affecting their values immediately prior to sale.[42]

This standard appears to introduce a number of new dimensions into how funds must assess the degree of liquidity in their holdings for regulatory purposes. First, under this standard, funds must base their liquidity assessments on when they expect to be able to settle a securities transaction, rather than when they expect to be able to execute a securities trade. Second, under this standard, funds must be able to anticipate the prices at which they will settle transactions. Third, funds must predict security-by-security the prices at which settlement may occur, apparently perhaps even to the degree of having to split up a fund's position in a particular security into various tranches, for each of which the fund must

[42] Rule Proposal at 402.

predict a future settlement price.[43] These features are likely to raise a number of new and problematic concerns.

In our view, one significant concern is that this new standard could suggest to shareholders that they can redeem out of the fund at an NAV that is protected or supported. We doubt the Commission intends that, but by adding the "without materially affecting the fund's net assets value" clause to its definition of "liquidity risk," the Rule Proposal implies the contrary. This could weaken price discipline. A key feature of open-end mutual funds is that investors do not know what NAV they will receive if they redeem tomorrow or at any future day. Even if a shareholder places a redemption order today, he or she will not know until after the market close at what price the order was executed (because fund NAVs are not generally calculated and published until after the market closes at 4:00 Eastern Time).

This NAV uncertainty reflects the fundamental principle that shareholders, like other capital market investors, bear investment risks, which in the case of funds are mirrored in the prices at which fund shares are purchased or redeemed. The Commission should be very cautious about adopting any rule that shareholders might interpret as indicating that long-term funds have an obligation to protect the NAV at which shareholders can redeem out of the fund in the future, which could in fact create exactly among long-term funds the kind of "first-mover" scenarios about which the Rule Proposal expresses concerns.

Figure 24: Distribution of Three-Month Change in Funds' Holdings of Apple Stock
Thousands of shares; reported change in holdings from first quarter to second quarter of 2015

Number of shares bought:		Percentiles of number of shares bought:								
Mean	Standard deviation	1	5	10	25	50	75	90	95	99
-25	550	-938	-198	-87	-13	-1	10	70	159	853

Source: Morningstar

Problems will also stem from the fact that the Rule Proposal, in essence, requires a fund to assess the price *today* at which a security can be sold at a *future* date without moving its future price. Even when markets are calm, it can be difficult to gauge whether the sale of a security will affect its future price. One reason is that other funds might at the same time be *buying* that security. For example, during the second quarter of 2015, some mutual funds bought shares of Apple stock while others sold. Figure 24 shows the distribution of the reported change in fund holdings of shares of Apple stock over the quarter. Some funds sold more than 938,000 shares. Others bought more than 853,000 shares. On net, funds sold an estimated 18 million shares over the quarter, but in the first six months of

[43] We recognize that the Rule Proposal does not explicitly require a fund to predict the future prices at which it could sell and settle portfolio securities. But it does so implicitly by requiring a fund to predict the dollar volume (i.e., the quantity) of securities that it could sell in the future without materially affecting the future price. Since quantity is simply the flip-side of the demand curve for a security, this is tantamount to requiring the fund to make a prediction about a security's price.

2015, Apple's share price outperformed the S&P 500. Thus, even ex-post, it is unclear how funds' purchases and sales affected Apple's share price. Under the Rule Proposal, a fund must make this kind of assessment ex-ante, which is even more difficult.

When markets are under stress, this calculus becomes still more difficult. The proposed definition of "liquidity risk" states that funds must account for "reasonably foreseeable stressed conditions," considering a host of factors such as the size of a position relative to market trading, bid-ask spreads, quality of market participants, and so on. These kinds of factors can change dramatically over the business cycle (especially during periods of market stress) in ways that are very difficult to anticipate. The concept of "reasonably foreseeable" is slippery at best and will be open to wide interpretation and second-guessing. Should funds in June 2007 have "reasonably foreseen" the stressed conditions that would emerge in the asset-backed market a few weeks later? Should they reasonably have foreseen in August 2008 the stressed conditions that would emerge in September 2008 following the collapse of Lehman Brothers?

B. Three-day Liquid Asset Minimum

The Rule Proposal defines the three-day liquid asset minimum as the minimum percentage of the fund's net assets to be invested in three-day liquid assets, which it defines as "any cash held by a fund and any position of a fund in an asset (or portion of the fund's position in an asset) that the fund believes is convertible into cash within three business days at a price that does not materially affect the value of that asset immediately prior to sale."[44]

We recognize that the Rule Proposal seeks to give funds some flexibility in restoring liquid assets if they fall below the minimum. But we are concerned that the three-day liquid asset minimum, as proposed, may nevertheless risk setting up exactly the kind of scenario the Rule Proposal seeks to avoid. For example, suppose during a market downturn that a particular fund's (or group of funds') liquid assets begin falling toward the established minimum. The fund's adviser may seek to avoid having the fund's liquid assets fall below the minimum (in order to appear remaining "liquid" to both the public and regulators), causing the fund to sell securities that by definition are less liquid. Consequently, during periods of stress, it is possible that the three-day liquid asset minimum may in fact lead funds to sell their less liquid assets first. This could disadvantage fund shareholders. For example, if the fund must sell the less liquid securities at distressed prices, it may simply lock in capital losses for existing

[44] Proposed rule 22e-4(a)(8) defines "Three-Day Liquid Asset" to mean "any cash held by a fund and any position of a fund in an asset (or portion of the fund's position in an asset) that the fund believes is convertible into cash within three business days at a price that does not materially affect the value of that asset immediately prior to sale. In determining whether a position or portion of a position in an asset is a three-day liquid asset, a fund must take into account the factors set forth in paragraph (b)(2)(ii) of this section, to the extent applicable." Proposed rule 22e-4(a)(9) defines "Three-Day Liquid Asset Minimum" to mean "the percentage of the fund's net assets to be invested in three-day liquid assets," in accordance with rule 22e-4(b)(2)(iv)(A) and (C).

shareholders. Also, by selling less liquid securities, the fund may perhaps undermine, rather than bolster, liquidity in the markets where it is transacting.

These kinds of effects could be exacerbated by the actions of other market participants. Events in the past few years have made clear that institutional investors seek to anticipate, and act in advance of, portfolio sales by mutual funds, such as by taking short positions in securities a mutual fund holds. Requiring funds to adhere to a three-day liquid asset minimum may create an incentive for institutional investors to front-run mutual funds that face the prospect of having to sell less liquid securities to adhere to a liquid asset minimum.

To help avoid second-guessing, funds may be compelled to restrict assets held in the three-day liquid minimum category to cash and cash equivalents. Other kinds of securities, even though generally accounted to be highly liquid, may have questionable status. For example, it unclear whether funds would feel the regulation offered sufficient latitude to include certain highly liquid derivatives positions, such as S&P 500 futures. Could funds reasonably treat medium- to long-term agency securities as liquid? What about off-the-run Treasury bonds?

We are also concerned that the three-day liquid asset minimum may encroach on the ability of some fund advisers to achieve objectives set forth in the funds' prospectuses. For some funds, the three-day liquid asset requirement will serve as little more than regulatorily-imposed tracking error (index funds) or arbitrarily limit their ability to meet their stated objectives (target-date and target-risk funds).

Significantly, the Rule Proposal does not examine these issues.

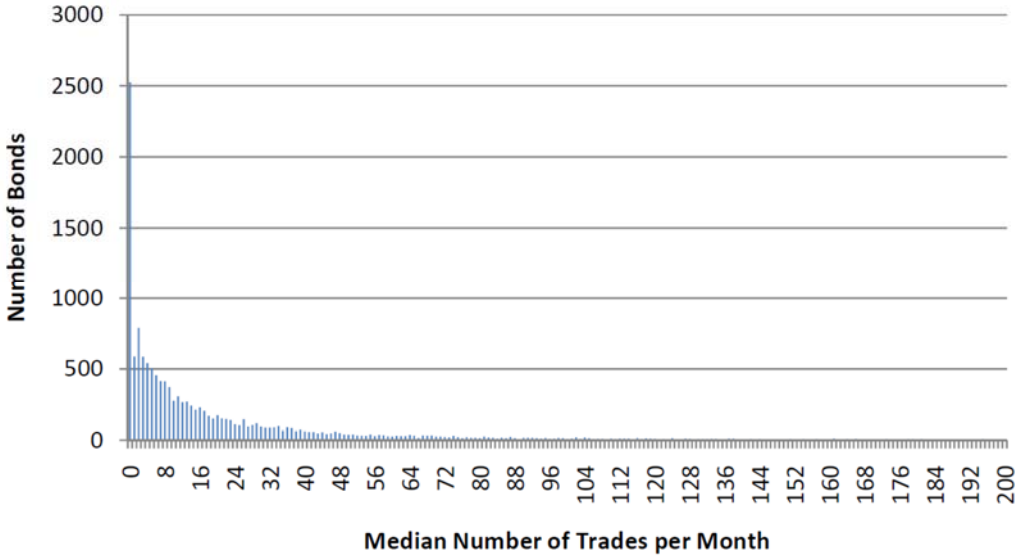
C. Six-Bucket Scheme Could Create the Kinds of Problems the SEC Seeks to Mitigate

There is a very real possibility that the proposed six-bucket scheme could, if adopted as proposed, lead funds to undertake more correlated or "crowded" trades, thus increasing risks, especially among bond funds.

In the fixed-income market, there are a vast number of CUSIPs, most of which trade infrequently (Figure 25). For instance, the median number of trades per month is zero for 17.5 percent of corporate bonds. Twenty seven percent of corporate bonds trade fewer than three times per month. Over half (51.6%) trade ten times or fewer per month.[45]

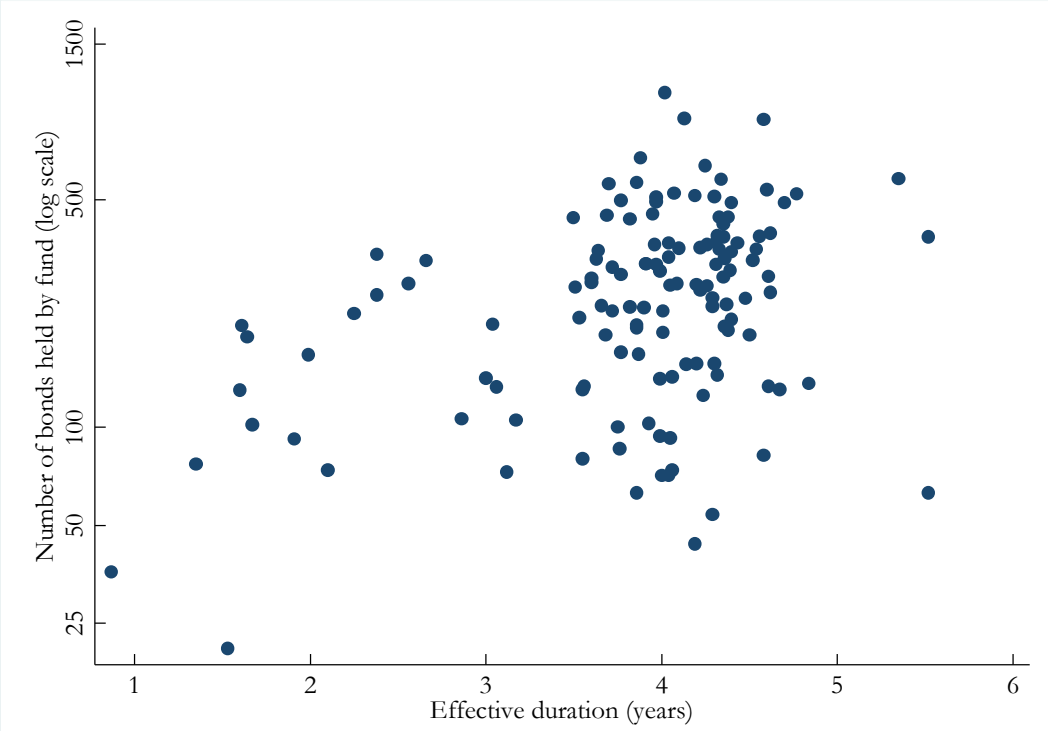
[45] *See* Michael A. Goldstein and Edith S. Hotchkiss, "Dealer Behavior in Highly Illiquid Risky Assets," September 15, 2015, https://custom.cvent.com/09056B0B33C34EC2BECC8C4A235B766F/files/acde951ea43944378c87d4034fe82d20.pdf.

Figure 25: Median Corporate Bond Trades per Month by CUSIP



Source: Goldstein and Hotchkiss (2015)

Figure 26: Duration and Number of Bonds Held by High-Yield Funds



Source: Investment Company Institute tabulations of Morningstar data

As a result, it will be difficult to create "liquidity scores" for individual bonds (or over-the-counter instruments in general). The DERA study itself acknowledges this. It does not assess for equity funds, bond funds, or ETFs the envisioned six-bucket scheme. It undertakes the kind of bottom-up approach to assessing liquidity but *only* for equity funds, and only then for the "Amihud" measure of liquidity. For bond funds, the DERA study does not attempt any kind of bottom-up approach. In fact, DERA describes many of the challenges one would face in doing so.[46] DERA's discussion underscores the challenges funds themselves are likely to have in undertaking a bottom approach bucketing approach, especially for fixed-income securities.

Consequently, if funds are required to report security-by-security measures of liquidity, for many securities (especially fixed-income securities) they will likely be forced to turn to model-based estimates. Because of practical considerations, funds likely would accomplish this operationally by turning to model-based liquidity estimates or "liquidity ratings" obtained from third-party vendors, much as was the case across the financial markets with credit risk and credit rating agencies. Indeed, in light of the SEC's Rule Proposal, third-party vendors already are ramping up such services. This could have a number of unintended and unfavorable consequences.

One is that funds' portfolios may become more correlated. Currently, funds, even funds within a given investment objective, hold diverse portfolios. Figure 26 plots for all high-yield bond mutual funds the number of bonds each fund holds versus the fund's effective duration. Most high-yield funds have an effective duration of about four years. A significant fraction, though, have lower durations, roughly 18 months to three years. The number of individual bonds that high-yield funds hold varies widely. Generally speaking, although not shown in the figure, larger funds hold a wider variety of individual bonds. Thus, as funds grow, they spread risks across a wider set of holdings. Also, as can be seen in the chart, the number of holdings is mildly correlated with effective duration.

This kind of diversification could decline under the new regime. In order to appear "more liquid" both to the public and regulators, funds may seek to avoid securities scored as "less liquid" by third-party vendors in favor of those deemed "more liquid." If so, funds' portfolios, especially portfolios of bond funds, are likely to become more homogenous. This risks creating more correlated risks in bond funds' portfolios. For example, high-yield funds, seeking to report greater "liquidity" might shorten their portfolio durations. The data in Figure 26, however, suggest that those funds then might hold fewer individual bonds or, in other words, more concentrated portfolios.

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[46] *See* DERA study at 31-32, which notes that "The Amihud liquidity measure [i.e., the bottom-up measure DERA uses to assess liquidity for equity funds] works well for U.S. equity funds because it only requires data on daily prices and trading volume, which is readily available for nearly all U.S. equities, and U.S. equity funds hold few assets other than U.S. equities." It continues by noting that "liquidity measures for fixed-income securities are typically more complex and tailored to the data available for each class. Further, if the liquidity measure we use varies between fixed-income classes, then it is not possible to calculate average portfolio liquidity for funds that invest in multiple fixed-income classes. In addition, the infrequent trading of many fixed-income securities can introduce both stale and inaccurate measures of liquidity into the calculation of a fund's bottom-up liquidity."

Greater portfolio homogeneity might also raise the probability of "cliff events" in liquidity during stress periods, similar to those arising from credit agencies' downgrading of firms during the financial crisis. If third-party vendors were to "downgrade" the liquidity of a security or group of securities, bond funds seeking to prevent deterioration in their *reported* liquidity might all rush to sell the downgraded securities, putting even greater downward pressure on securities prices and potentially exacerbating illiquidity in particular market segments. To this point, some researchers have suggested that the Basel III liquidity coverage ratio (LCR) may create significant problems. For example, in a recent assessment of the LCR, Hong, Huang, and Wu (2013)[47] suggest that the LCR may lead to "liquidity hoarding" among banks, especially during periods of market stress, creating an externality across financial markets that imperils liquidity, rather than buffering it. Hartlage (2012) makes a similar point, discussing how the imposition by regulators of an LCR-like requirement on South Korean banks in 1998 created market distortions and reduced stability.[48]

When third-party vendors "downgrade" the liquidity of given securities (if, for example, a particular issuer becomes financially distressed), larger funds could be forced to sell the downgraded security to maintain or restore their three-day liquidity minimum. The dynamics could prove similar to those seen when insurance companies, when nearing the regulatory minimum capital ratio, must sell bonds that are downgraded to non-investment grade status in order to meet minimum capital requirements.

Beyond this, the SEC's proposed six-bucket scheme could create an artificial sense of precision about fund liquidity. The liquidity estimates from third-party vendors would only be as good as the models (or other analytical approaches) on which they are based. A misleading picture of fund liquidity could arise in a number of ways:

- Measuring liquidity is highly dependent on assumptions and measurable inputs and there is no one single agreed upon measure of "liquidity." In fact, there are many different measures.[49] For example, liquidity can be defined in terms of transactions costs, market volume, number of days to sell or add a position, or market impact. Although economists have proposed many different specific measures for each of these different concepts, the various measures can produce widely

[47] *See* Han Hong, Jingzhi Huang, and Deming Wu, "The Information Content of Basel III Liquidity Risk Measures," working paper, October 2013, available at http://devel.aifirm..it/wp-content/uploads/2013/11/SSRN-id2344944.pdf.

[48] Andrew W. Hartlage, "The Basel III Liquidity Coverage Ratio and Financial Stability," *Michigan Law Review,* 2012, vol. III, no. 12, 453-484.

[49] For a comparison of an array of the possible measures of liquidity, see Ruslan Y. Goyenko, Craig W. Holden, and Charles A. Trzcinka, "Do Liquidity Measures Measure Liquidity," *Journal of Financial Economics*, 92, 2009, 153-181.

disparate assessments of liquidity.[50] In some cases, notably and importantly for measures of "market impact," it has been noted that liquidity measures may produce the "wrong sign," for example indicating that larger-sized (by dollars) sales of corporate bonds result in smaller market impacts than smaller-sized sales, indicating that "price impact measures should be employed with great caution."[51] Moreover, evidence indicates that model-based estimates of liquidity vary widely over the business cycle; various measures may differ considerably from one another at a given point in time and a particular measure may behave quite differently in calm markets than in volatile markets.

- Statistical models, as the DERA study suggests, may greatly under-represent the amount and variety of information fund advisers currently use with demonstrated success to evaluate funds' portfolio liquidity. Model-based estimates of liquidity will of necessity be based on backward-looking data. Although it is completely appropriate to assess liquidity at some level based on historical data, doing so exclusively risks ignoring the specific market intelligence and expertise that fund advisers can bring to bear in order to assess in real-time the liquidity of markets or individual securities. This kind of real-time, expert analysis will be quite difficult, if not impossible, to capture in models.

- Model (or expert-based) liquidity assessment systems pose administrative risks. Models can be quite complicated and data-intensive. If funds are forced in practice to rely on third-parties for liquidity assessments, they may need considerable additional staff to monitor liquidity estimates and to explain various approaches and estimates to fund boards. Moreover, there is a risk that these kinds of model-based systems could be put on "auto-pilot." Model-based systems will be costly to design and implement, and market participants may be slow to address weaknesses because changes will be costly and time-intensive.[52]

- Models (and similar expert frameworks) necessarily involve measurement and statistical error, and structural uncertainty, features that could be masked by the apparent precision of the six-bucket approach. This, in general, is a problem of "model risk," an issue banking regulators have become extremely cognizant of in light of the poor performance of risk models (such as value at risk models) during the financial crisis.[53] To the extent that liquidity models become fairly

[50] *See* Jens Dick-Nielsen, Peter Feldhutter, and David Lando, "Corporate bond liquidity before and after the onset of the subprime crisis," *Journal of Financial Economics*, 103, 2012, 471-492.

[51] *See*, for instance, Raphael Schestag, Phillip Schuster, Marliese Uhrig-Homburg, "Measuring Liquidity in Bond Markets," working paper, August 2015, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2328370.

[52] *See* Brown, McGourty, and Schuermann (2015) at footnote 48.

[53] *See* Jeffrey A. Brown, Brad McGourty, and Til Schuermann, "Model Risk and the Great Financial Crisis: The Rise of Modern Model Risk Management," working paper, January 2015, available at

standardized, that could increase risks because all funds will be using essentially the same models; if the models turn out to be wrong, the risk is increased that all funds are wrong together.

- The six-bucket approach could also tend to distort funds' portfolio management. As discussed in the next section, larger funds are likely to be seen as having lower three-day liquidity levels, even if they hold securities similar to those held by smaller funds. This could incent larger bond funds, for example, to concentrate their portfolios in CUSIPs that third-parties classify as more liquid and avoid those classified as less liquid, perhaps degrading liquidity in certain market segments.

D. The Six-bucket Liquidity Classification Scheme May Lead to Anomalous Results

The usefulness of the proposed six-bucket liquidity classification scheme will depend importantly on how funds bucket assets. Given the uncertainties, it is difficult, if not impossible, to analyze precisely how the proposed six-bucket approach will play out in practice.

Nonetheless, it is possible at least to illustrate the range of outcomes that might be expected under some broad but reasonable assumptions. The SEC proposal provides no specific guidance as to how to assess the effect a fund's portfolio purchases or sales might have in the future under stressed market conditions. For illustrative purposes, we adopt a guideline that market participants sometimes use: we assume that a fund can sell up to 20 percent of the daily trading volume in a particular security without materially affecting the value of the underlying security. Under this assumption, we consider the liquidity buckets that various types of funds might report.[54]

As we show, the SEC's proposed bucketing approach may lead to anomalous outcomes, such as classifying rather plain vanilla equity funds (e.g., S&P 500 index funds) as illiquid. We also show that the proposed bucketing approach could, almost mechanically, disadvantage large funds and create the impression that small funds are highly liquid regardless of their holdings.

We illustrate these points using hypothetical examples for three types of funds: S&P 500 index funds, investment grade bond funds, and high-yield bond funds.

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http://fic.wharton.upenn.edu/fic/papers/15/15-01.pdf, who state that "with complex models comes model risk, and, as with any risk, model risk needs to be managed … [M]odels, or rather the blind faith in poorly specified models, were a significant contributor to the financial crisis itself."

[54] Of course, this assumption probably significantly understates how the six-bucket scheme actually will depict the liquidity of funds. On any given day, a single fund liquidating a position will not be the only seller in the market. Thus, in practice, the percentages of a fund's portfolios that it would assign to later-dated buckets (i.e., greater than 7 days) could be higher than those reflected in our analysis.

a. S&P 500 Index (and Large-cap Equity) Funds

S&P 500 index funds are among the most straightforward of mutual funds. Their portfolios are all essentially identical. These funds typically hold relatively little cash, in part to reduce the potential for "cash drag" to create tracking error. Also investors in these funds tend to be oriented heavily toward retirement saving and consequently flows to such funds tend to be rather stable, even among smaller mutual funds. In addition, these funds are able to accommodate net cash flows by taking temporary positions in S&P 500 futures, which are among the most liquid of all financial market instruments.

Notwithstanding consistent and compelling historical data about funds' actual redemptions experiences and the behavior of fund shareholders, the Rule Proposal proceeds from the premise that a fund must determine and disclose the period over which it might expect to be able to liquidate progressively its entire portfolio (i.e., meet gross redemptions equal to 100 percent of the fund's assets) without materially impacting its NAV or the market price of its individual underlying portfolio securities.

Figure 27 provides a plausible outlook for the liquidity buckets that S&P 500 funds of various sizes might report if the Rule Proposal is adopted as is. The total daily trading volume in S&P 500 stocks currently averages about $30 billion. An S&P 500 fund that can sell up to 20 percent of market volume per day without materially affecting its NAV can in dollar terms sell up to $6 billion a day. Figure 27 further assumes that an S&P 500 index fund holds 1 percent of its assets in cash or cash equivalents.

Under these assumptions, the Rule Proposal's six-bucket scheme will convey to investors a false impression that any mid- to large-sized S&P 500 index fund is a virtual illiquidity trap and risks being unable to meet its redemptions. For example, an S&P 500 fund with assets of $200 billion or more would likely report being unable to convert the great majority of its assets (89.9 percent) to cash in seven calendar days or less. Even a fund with assets of about $40 billion could be faced with the prospect of having to categorize the majority of its assets as "illiquid" within seven calendar days. There are currently three S&P 500 index funds whose assets exceed $40 billion, another seven equity index funds using other indexes whose assets exceed $40 billion, and another 11 actively-managed domestic equity funds whose assets exceed $40 billion.

On the other hand, the six-bucket scheme will convey to investors the impression that smaller S&P 500 funds are far less risky, and would likely be able to meet any level of redemptions irrespective of any other factors. Figure 27 indicates that an S&P 500 index fund with assets of $4 billion or less would appear able to convert everything to cash within three business days, regardless of the fund's specific holdings, its cash management strategies, and other factors. Given these results, it follows that the SEC's proposed liquidity bucket approach is unlikely to affect how small funds manage liquidity.

Figure 27: Possible Outcomes for SEC-Proposed Liquidity Buckets of S&P 500 Index Funds
Selected fund sizes

	Percent of fund portfolio convertible to cash within:						
Fund size	Business days		Calendar days				
$ billions	0-1	2-3	4-7	8-15	16-30	> 30	> 7
1	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	1.0%	75.8%	23.2%	0.0%	0.0%	0.0%	0.0%
10	1.0%	60.6%	38.4%	0.0%	0.0%	0.0%	0.0%
20	1.0%	30.3%	60.6%	8.1%	0.0%	0.0%	8.1%
30	1.0%	20.2%	40.4%	38.4%	0.0%	0.0%	38.4%
40	1.0%	15.2%	30.3%	53.5%	0.0%	0.0%	53.5%
50	1.0%	12.1%	24.2%	60.6%	2.0%	0.0%	62.6%
60	1.0%	10.1%	20.2%	50.5%	18.2%	0.0%	68.7%
80	1.0%	7.6%	15.2%	37.9%	38.4%	0.0%	76.3%
100	1.0%	6.1%	12.1%	30.3%	50.5%	0.0%	80.8%
150	1.0%	4.0%	8.1%	20.2%	40.4%	26.3%	86.9%
200	1.0%	3.0%	6.1%	15.2%	30.3%	44.5%	89.9%

We strongly question whether these kinds of outcomes are likely to have value for either investors or the SEC. We know of no empirical evidence or public policy rationale to support treating large funds as always illiquid. In fact, the DERA study provides evidence of the reverse. The study indicates that large funds that invest in large-cap equities are among the most liquid and have the most stable flows of funds it examined.

b. Investment Grade Bond Funds

We next consider the potential effect of the proposed liquidity buckets on investment grade bond funds.

How the assets of investment grade bond funds will be distributed among the six-buckets will hinge on a number of factors, none of which can be thoroughly evaluated at this point, including how fund advisers, third-party vendors, fund boards, and the SEC interpret the list of "factors" that funds should take into account in classifying the liquidity of a fund's portfolio.

Nevertheless, as with S&P 500 equity funds, likely outcomes can be gauged by making some plausible assumptions. As indicated earlier, many corporate bonds trade infrequently. We gauge the

liquidity in the corporate bond market in general via the average daily trading volume in all investment grade corporate bonds.

In 2014, daily trading volume for investment grade bond funds typically averaged about $15 billion a day. Thus, we assume that a bond fund could sell up to $3 billion a day (i.e., 20 percent of daily trading volume) in investment grade corporate bonds without materially affecting its NAV. In this example, however, we increase the level of securities redeemable within 1 business day to 5 percent. This is broadly consistent with results in the DERA study. The study reports that general bond funds hold 2.9 percent of their assets in "cash." But general bond funds hold a considerably larger proportion of their portfolios in government bonds (16.1 percent); we assume that a significant proportion of these would be considered redeemable within 1 day (especially if that "government bonds" category reported in the DERA study captures repurchase agreements).

Figure 28: Possible Outcomes for SEC-Proposed Liquidity Buckets for Investment Grade Bond Funds

Selected fund sizes

	Percent of fund portfolio convertible to cash within:						
Fund size	Business days		Calendar days				
$ billions	0-1	2-3	4-7	8-15	16-30	> 30	> 7
1	5.0%	95.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	5.0%	95.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	5.0%	78.9%	16.1%	0.0%	0.0%	0.0%	0.0%
8	5.0%	39.5%	55.5%	0.0%	0.0%	0.0%	0.0%
10	5.0%	31.6%	63.2%	0.3%	0.0%	0.0%	0.3%
20	5.0%	15.8%	31.6%	47.6%	0.0%	0.0%	47.6%
30	5.0%	10.5%	21.1%	52.6%	10.8%	0.0%	63.4%
40	5.0%	7.9%	15.8%	39.5%	31.8%	0.0%	71.3%
50	5.0%	6.3%	12.6%	31.6%	44.5%	0.0%	76.1%
60	5.0%	5.3%	10.5%	26.3%	52.6%	0.3%	79.2%
80	5.0%	3.9%	7.9%	19.7%	39.5%	23.9%	83.2%
100	5.0%	3.2%	6.3%	15.8%	31.6%	38.2%	85.5%
150	5.0%	2.1%	4.2%	10.5%	21.1%	57.1%	88.7%
200	5.0%	1.6%	3.2%	7.9%	15.8%	66.6%	90.3%

Based on these assumptions, Figure 28 shows likely outcomes. Per-day trading volume is lower in investment grade corporate bonds than in U.S. equities. As a result, funds begin to look "highly illiquid" at lower levels of assets. For example, an investment grade bond fund with just $20 billion in assets might have to classify nearly half of its assets as being inconvertible to cash within seven days. ICI

data indicate that there are currently 624 investment grade bond funds; of these 14 have assets greater than $20 billion.[55]

c. High-Yield Bond Funds

High-yield bond funds are generally smaller than investment grade bond funds. The largest high-yield fund has assets of about $20 billion. By itself, this would mean high-yield funds have smaller market impacts. On the other hand, the daily trading volume of high-yield bonds is lower than that of investment grade corporate bonds. In 2014, daily trading volume for high-yield bonds typically averaged less than $8 billion a day. Here, rather than assuming a fund can sell 20 percent of the daily market volume without affecting its NAV, we use a more conservative 10 percent assumption. In other words, we are assuming that funds cannot sell as much in high-yield bonds as a share of daily trading volume, or in other words that the high-yield market is less liquid. This means a fund could sell $800 million per day in high-yield bonds without materially affecting its NAV. As with investment grade bond funds, we assume that high-yield funds hold 5 percent of their assets in securities that are liquid within one business day.

Figure 29: Possible Outcomes for SEC-Proposed Liquidity Buckets of High-Yield Bond Funds
Selected fund sizes

	Percent of fund portfolio convertible to cash within:						
Fund size	Business days		Calendar days				
$ billions	0-1	2-3	4-7	8-15	16-30	> 30	> 7
1	5.0%	84.2%	10.8%	0.0%	0.0%	0.0%	0.0%
2	5.0%	42.1%	52.9%	0.0%	0.0%	0.0%	0.0%
3	5.0%	28.1%	56.1%	10.8%	0.0%	0.0%	10.8%
4	5.0%	21.1%	42.1%	31.8%	0.0%	0.0%	31.8%
6	5.0%	14.0%	28.1%	52.9%	0.0%	0.0%	52.9%
8	5.0%	10.5%	21.1%	52.6%	10.8%	0.0%	63.4%
10	5.0%	8.4%	16.8%	42.1%	27.6%	0.0%	69.7%
15	5.0%	5.6%	11.2%	28.1%	50.1%	0.0%	78.2%
20	5.0%	4.2%	8.4%	21.1%	42.1%	19.2%	82.4%
25	5.0%	3.4%	6.7%	16.8%	33.7%	34.4%	84.9%

Figure 29 shows the estimated liquidity buckets for high-yield funds of various sizes. Any high-yield bond fund with assets of more than $6 billion in assets might have to classify the majority of its assets as being inconvertible to cash within seven days. As of October 2015, there were 185 high-yield

[55] There are also 12 funds of funds that are investment grade bond funds. Of these, one has assets greater than $20 billion.

bond funds; nine of them had assets greater than $6 billion.[56] In addition, the classification scheme could result in almost a "knife-edge" among high-yield funds. While high-yield funds with assets of $6 billion might be viewed as largely illiquid, high-yield funds with assets of $3 billion might be seen as almost entirely liquid (almost 90 percent of their assets deemed convertible to cash within seven business days).

* * *

We appreciate the opportunity to comment on the Commission's Liquidity Risk Management Rule Proposal and the related DERA study. If you have any questions regarding our comments or would like additional information, please contact me at [redacted] ([redacted]), or Sean Collins, Senior Director of Industry and Financial Analysis at [redacted]).

Sincerely,

/s/ Brian K. Reid

Brian K. Reid
Chief Economist,
Investment Company Institute

cc:

The Honorable Mary Jo White
The Honorable Kara M. Stein
The Honorable Michael S. Piwowar

Mark Flannery, Chief Economist, Division of Economic and Risk Analysis

David W. Grim, Director, Division of Investment Management
Diane C. Blizzard, Associate Director, Division of Investment Management
Sarah G. ten Siethoff, Assistant Director, Division of Investment Management

[56] This excludes floating rate funds that invest in high-yield assets.

Appendix

Figure A1: Gross Redemptions of Shares of Long-Term Mutual Funds and ETFs
*Selected investment objectives, billions of dollars; annual, 1984-2015**

Year	Total	Long-Term Funds				ETFs
		Total	Equity	Hybrid	Bond	
1984	39	39	24	2	12	N/A
1985	58	58	34	4	20	N/A
1986	130	130	68	7	56	N/A
1987	248	248	120	11	117	N/A
1988	170	170	84	10	77	N/A
1989	164	164	83	8	73	N/A
1990	173	173	91	8	74	N/A
1991	199	199	107	10	82	N/A
1992	281	281	123	11	147	N/A
1993	388	388	180	18	190	N/A
1994	537	537	252	37	248	N/A
1995	521	521	309	39	172	N/A
1996	703	703	457	45	200	N/A
1997	919	919	653	53	213	N/A
1998	1,221	1,221	908	72	240	N/A
1999	1,622	1,622	1,223	95	304	N/A
2000	2,065	2,065	1,656	107	301	N/A
2001	1,724	1,678	1,296	76	306	45
2002	1,755	1,702	1,243	86	373	52
2003	1,576	1,495	930	77	488	81
2004	1,527	1,426	925	90	411	102
2005	1,762	1,548	1,069	102	377	214
2006	2,165	1,782	1,269	126	387	383
2007	3,209	2,304	1,656	166	482	905
2008	3,780	2,639	1,753	207	680	1,141
2009	2,737	1,985	1,196	154	635	752
2010	3,447	2,459	1,431	170	857	988
2011	4,035	2,832	1,622	224	986	1,203
2012	3,731	2,762	1,602	220	940	969
2013	4,504	3,348	1,705	264	1,379	1,156
2014	4,820	3,510	1,984	292	1,235	1,309
2015	4,084	2,929	1,691	248	990	1,155
Total	**54,294**	**43,838**	**27,746**	**3,039**	**13,053**	**10,456**

* Data are through October 2015.
Source: ICI