Harnessing Whales: The Role Of Shadow Price Disclosure In Money Market Mutual Fund Reform

Larry G. Locke, University of Mary Hardin-Baylor, USA

Ethan Mitra, University of Mary Hardin-Baylor, USA

Virginia Locke, University of Mary Hardin-Baylor, USA

ABSTRACT

The money market mutual fund industry is experiencing a sea change. Thanks, in large part, to their role in the 2008 market break, U.S. securities regulators have targeted money market funds for a structural overhaul. Runs on money market funds by institutional investors in the wake of the Lehman Brothers bankruptcy weakened the short-term credit market to the point of collapse. The resulting intervention of the Federal Reserve and the Treasury may have saved the economy from further damage but came at such a perceived cost that legislation now forbids it. Both the Securities and Exchange Commission (SEC) and the Financial Stability Oversight Council (FSOC) believe restructuring is necessary. Their only question appears to be exactly what form the product will take.

One of the elements being considered in the reform effort will be increased disclosure of money market fund shadow prices. The regulators have posited that more frequent and more available disclosure of fund shadow prices will lead to more discipline being exerted on the fund industry, especially by the institutional market. A revamped disclosure regime, however, has been in effect since monthly shadow price disclosures were imposed by the SEC in December 2010.

This study looks at the impact of those 2010 disclosure regulations on different sectors of the market. It seeks to identify a correlation between shadow prices and changes in assets for both retail and institutional funds. The authors assess the findings of the study and discuss the implications of those findings for the impending regulatory restructuring.

Keywords: Money Market Mutual Funds; Shadow Price; Money Market Reform; Money Market Funds

INTRODUCTION

oney market mutual funds have been a favorite of both institutional and retail investors for decades. From their origins in the 1970's, money market funds grew to \$3.8 trillion in 2008 before declining to \$2.69 trillion as of year-end 2011 ("2012 Investment Company Fact Book", n.d.). They invest exclusively in short-term, highly rated securities, minimizing both interest rate risk and credit risk ("Frequently Asked Questions About Money Market Funds", n.d.). Money market funds are a peculiar form of mutual funds registered with the SEC under the Investment Company Act of 1940. While most open-ended registered investment companies sell and redeem their shares at the next determined net asset value, money market funds are permitted by Rule 2a-7 under the '40 Act to issue and redeem shares at the fixed price of \$1 per share.

Their substitutability for commercial bank checking accounts probably has contributed to their popularity. Unlike bank accounts, however, money market mutual funds are uninsured and investors in money funds are, in fact, exposed to the risk of the funds' underlying investments (Waddell, 2012). A money market fund is only permitted by Rule 2a-7 to sell and redeem shares at \$1 if it maintains a true net asset value per share (or shadow price) within one half of one cent of a dollar (Rule 2a-7(c)). If the shadow price deviates from \$1 by more than half a penny, the

fund is required to take immediate measures such as liquidating the fund or allowing its share price to float with the NAV (Rule 2a-7(c)(8)(ii)(B)). Only when a money fund “breaks the buck” will investors be exposed to losses imbedded in the fund. Fortunately for investors, breaking the buck has been a historically rare event. Between the 1970’s and 2008, only one money market fund had ever broken the buck (Mamudi, 2008). Investors may have understandably assumed that money funds were a safe and liquid place to invest short-term funds. This effect may have been exacerbated by the propensity of fund sponsors to bail out their money funds in times of trouble. Moody’s Investors Services estimates that at least 146 funds received sponsor support of one kind or another between 1972 and 2007 (Shilling, 2010). In 2008, however, another fund broke the buck and that event had a broader impact beyond the fate of its investors. When the Reserve Primary Fund’s share price dropped below \$0.995 in September 2008, due to its holdings in Lehman Brothers debt, the failure of the fund rippled through the entire short-term capital market. Money fund investors withdrew \$310 billion from the industry in seven days (“Report of the President’s Working Group on Financial Markets”, n.d.). The Reserve Primary Fund was closed and investors eventually received approximately \$0.99 per share as the fund was liquidated (Stempel, 2012).

However, it was not necessarily the losses, or potential losses, that money fund investors would sustain that has led to the current wave of regulatory reform. During the 2008 financial crisis, money fund managers seemed reluctant to invest in private debt and purchases of commercial paper dropped off substantially (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.). This precipitous decline in demand for commercial paper may have cemented the U.S. Treasury and Federal Reserve’s decision to intervene in the markets at historic levels. The inability of major U.S. companies (reportedly, such as General Electric) to continue their commercial paper programs could threaten the ability of large employers to make payroll or purchase inventory due to a lack of liquidity (Gerth, 2013). An unwillingness to countenance the potential social unrest that kind of breakdown would create could have been the underlying cause of the Fed and Treasury’s intervention.

Money Market Reform

Following the 2008 market break, there have been multiple calls from regulators to change the way money market funds are structured in order to forestall a repeat of the financial crisis (“Report of the President’s Working Group on Financial Markets”, n.d; Schapiro, 2012). In the immediate aftermath of the crisis, the President’s Working Group suggested that the money market fund product be altered so as to make it less vulnerable to runs and to failure (“Report of the President’s Working Group on Financial Markets”, n.d.). Before those suggestions could evolve into regulatory proposals, however, the SEC promulgated a series of new rules designed to make money funds less susceptible to market stresses. The Commission imposed stricter credit, maturity and liquidity limitations on money market fund portfolios. They also instigated a new reporting regime (“U.S. SEC Adopts Amendments to Rule 2a-7 Affecting Money Market Funds”, 2010).

As of December 2010, all money market funds are required to file Form N-MFP with the SEC monthly. The form includes substantial information about the fund, including its current shadow price. (Money funds had previously disclosed their shadow prices to the SEC twice a year on Form N-SAR.) The SEC committed to publish the filed Forms N-MFP on its publicly available EDGAR database after a 60-day delay (“Securities And Exchange Commission 17 CFR Parts 270 and 274 [Release No. IC-29132; File Nos. S7-11-09, S7-20-09]”, 2010). The result is that all money market fund shadow prices are now available to the public two months in arrears.

The purpose of the new reporting regime is strategic. The SEC anticipated that money market funds would take fewer portfolio risks if the public were able to select funds on the basis of recent shadow price disclosures (“Securities And Exchange Commission 17 CFR Parts 270 and 274 [Release No. IC-29132; File Nos. S7-11-09, S7-20-09]”, 2010). The regulators expected that the investing public would discipline the money market industry by favoring funds with high shadow prices and avoiding or redeeming out of funds with low shadow prices. The fear of these market forces would, they presumed, compel money market fund advisors to manage the funds in such a way as to maintain higher shadow prices.

The initiative to alter the money fund landscape continued after the 2010 regulations. SEC Chairman Schapiro and others in the regulatory community believed that even though the 2010 regulations would make money market funds more robust, they were still structurally susceptible to runs (Schapiro, 2012). In the case of a fund

experiencing losses, investors who redeemed shares first would receive the standard \$1 per share while those who waited would be forced to redeem for less than \$1 as losses imbedded in the fund became increasingly concentrated by redemptions until the shadow price of the fund dropped below \$0.995. Subsequent research by the SEC staff suggests that the 2010 regulations would not have saved the Reserve Primary Fund if they had been in effect in 2008 (“Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher”, 2012).

To further insulate the economy from the behavior of money market funds, Chairman Schapiro proposed three alternative structural models for money market mutual fund products. The proposals were designed to remove the incentive that shareholders currently have to quickly withdraw money from their fund if they suspect it is in danger of suffering significant losses. This collective incentive is suspected to be behind the run on money market funds, in general, and on the Reserve Primary Fund, in particular, that was observed in 2008.

Initially, the other Commissioners were not uniformly responsive to Chairman Schapiro’s proposals. After an intensive lobbying effort from the mutual fund industry (Wyatt, 2012), Chairman Schapiro finally admitted, in August 2012, that she was unable to gain the required 3/5 vote to publish the proposals for public comment (“Statement of SEC Chairman Mary L. Schapiro on Money Market Fund Reform”, 2012). Undeterred, Chairman Schapiro suggested that the Financial Stability Oversight Council should take up the issue and either make a formal request to the SEC for rulemaking or declare various fund companies “systemically important” and therefore within its jurisdiction (Condon, 2012). Those fund companies could then be regulated directly by the FSOC without the need for SEC involvement. Treasury Secretary Geithner and the remainder of the Council picked up on Chairman Schapiro’s suggestion and, in their November meeting, passed a resolution instructing the SEC to adopt new regulations of money funds or provide an explanation as to why it would not. Since the FSOC’s proposal, Chairman Schapiro has resigned from the SEC and one of the commissioners who had refused to support her proposal has now agreed to go forward (Holzer, 2012). It would seem, at this stage, that money market funds are going to undergo substantial changes in the next several months.

There are three proposals currently on the table, any of which may be adopted in whole, in part, or in some combination with others. The first proposal is to remove the ability of money market funds to fix their share price at a dollar. Money funds’ shares would float at their NAV, the same as other mutual funds. To make the floating NAV more obvious to investors, money funds would be compelled to increase their share price from \$1 to \$100 (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.). Repricing the shares at \$100 would cause even small variations in the value of the underlying securities to be reflected in the share price.

The second proposal is for each money market fund to maintain some form of equity buffer of up to 1% of the fund’s assets, depending on the makeup of those assets (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.). The purpose of the buffer is to absorb small, daily fluctuations in the value of the fund’s portfolio so that the regular shares of the fund may maintain a constant price of \$1. In addition to the buffer, shareholders investing more than \$100,000 in a single money market fund would be subject to a 30-day delay of 3% of their holdings upon redemption. If the fund suffered losses in excess of its buffer during the 30-days after a large shareholder redeemed, the 3% holdback would absorb those losses. This second proposal (both the NAV buffer and the 3% minimum balance at risk requirements) would not apply to money market funds that invest exclusively in U.S. Treasury securities.

The third proposal would also allow money funds to continue to sell and redeem their regular shares at \$1 but would require an equity buffer equal to 3% of fund assets, combined with more stringent investment restrictions designed to reduce the risk of a fund sustaining losses in excess of its 3% buffer (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.). Again, Treasury money market funds would not be subject to the 3% buffer requirement.

A theme that is clearly emerging from the reform proposals as they move forward is the focus on institutional money market investors. Both the SEC and the FSOC see the potential for destabilizing runs on money market funds as the root of the problem and the ability (and proclivity) of institutional investors to cause those runs as what must now be circumscribed. The FSOC notes that institutional money market funds now make up 2/3 of total industry assets compared to only 1/3 in 1996 (“Proposed Recommendations Regarding Money Market Mutual

Fund Reform”, n.d.). It also states that institutional holders, because of their sophistication and the amounts they have at risk, are quicker to redeem shares if they see potential problems arising with a fund (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.). The facts would seem to bear out the FSOC’s concerns in that 95% of the prime money fund redemptions seen in the wake of the Lehman Brothers bankruptcy were experienced by institutional funds (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.).

Not surprisingly, in one of their proposals, regulators are willing to force the greater share of the burden for rendering money market funds less systemically risky on those same institutional investors. Proposal #2 places redeeming institutional investors squarely in line to absorb losses for the entire fund after the 1% equity buffer is exhausted. Many institutional investors invest in money funds that are exclusively designed for institutions (with minimum investment requirements of \$1 million, for instance), but others may invest in funds that contain both institutional and retail investors. In those cases, losses incurred by the fund greater than the 1% buffer would be concentrated on the institutional investors.

The regulators are willing to place more of the burden on institutional investors not only because they see them as the source of the problem but also because they believe institutional investors are more easily coopted into providing the market discipline the regulators see as presently lacking. The FSOC discussed this in their proposal #2:

The MBR may also enhance market discipline by causing MMF investors to monitor carefully MMF operations and risk-taking and redeem shares from a poorly run MMF well in advance of any specific problems developing in the fund’s portfolio because investors would be unable to redeem quickly during a crisis to avoid losses. (“Proposed Recommendations Regarding Money Market Mutual Fund Reform” p 43, n.d.)

Clearly, the regulators are still looking to the market, specifically the institutional market, to provide discipline to money fund managers.

They also continue to suggest that shadow price publication may be an effective means to stimulate institutional investors to provide that discipline. In its release describing the three alternative reform approaches, the FSOC specifically sought comment on the effectiveness of shadow price disclosure to control risk-taking by money fund managers. The proposal suggested that more frequent or more available disclosures might have the desired effect (“Proposed Recommendations Regarding Money Market Mutual Fund Reform”, n.d.).

In 2012, two of the authors published a study showing that there was no statistical correlation between published money fund shadow prices and investor activity with respect to aggregate buying or selling of shares of those funds (Locke, 2012). The lack of correlation found by the study was significant because, as discussed above, the SEC’s stated purpose for the new requirement that funds disclose their shadow prices monthly was to encourage the market to discipline fund managers. The 2012 study indicated that investors generally were not responding to the published shadow prices and, therefore, the SEC’s regulatory purpose was not being fulfilled, despite the industry’s compliance.

Two questions that arose after the 2012 study was published were whether the sample in the 2012 study was sufficient and whether institutional investors might behave differently than the market overall. The sample for the 2012 study was necessarily small because the funds had only begun to report their shadow prices monthly in December 2010. Although the sample for the 2012 study amounted to approximately 30% of the industry’s total assets, the study could only measure activity through August 2011 (Locke, 2012). Industry observers also suggested that the overall lack of correlation between shadow price performance and investor activity might have been masking a potentially significant correlation between shadow prices and institutional investor behavior. Because the 2012 study did not differentiate between retail and institutional funds, the behavior of institutional investors was indistinguishable from the behavior of the market overall.

The current study has sought to answer both of these open questions. The database has been extended to capture shadow prices and investor behavior through August 2012. It is impossible to separate net investment or

redemption activity by institutional investors versus retail investors in a fund that contains both. It is possible, however, to identify certain funds as being utilized by institutional investors based on minimum investment size. The current study includes that designation in the database so that institutional investor behavior can be isolated for analysis.

DATA, ANALYSIS, AND RESULTS

The data for this study were taken directly from the SEC's EDGAR database of financial statements. One hundred one funds of various sizes and categories were selected for analysis and the data were collected from Forms N-MFP for each of the funds in each of the months they were available from December 2010 (when reporting began) to August 2012. When a fund reported for some months during the timeframe of the study, but not others, the authors included the months for which information was available in order to avoid the potential for survivor bias. Funds included in the study range from over \$100 billion to less than \$12 million in total assets. The data set includes 83 retail and 18 institutional funds categorized according to their minimum initial investment (\$100,000 and above for institutional). The total assets of the data set are approximately \$900 billion, representing roughly 33% of total industry assets. The median fund assets were approximately \$1.64 billion. Observed shadow prices ranged from \$0.9956 to \$1.0091. The data is assumed to be reliable without verification as it is reported directly to the SEC by the fund companies and is presumably published by the SEC without substantive modification.

The authors ran a series of linear regression analyses comparing changes in total assets with previously established shadow prices for the fund. Utilizing the longer term data now available, the authors first replicated the analyses of the 2012 study with respect to the effect of shadow prices on changes in net assets over three different periods for the market overall. The authors examined the effect of a fund's shadow price on changes in its net assets that occurred in the first 30 days after the shadow price was established, the first 30 days after the shadow price was published by the SEC (60 days after the price was established), and for 90 days after the price was established. The second of those three analyses is designed to capture the effect of the SEC's reporting regime. If investors react to a fund's shadow price upon its disclosure via the EDGAR system, that reaction would be reflected in the difference in the fund's net assets between 60 and 90 days after the shadow price's establishment. However, some shareholders, particularly institutional shareholders, may have information with respect to a fund's shadow price well in advance of the SEC's disclosure. The authors have hypothesized that those investors could react to the shadow price immediately upon its establishment and their reaction would be reflected in changes in net assets over the first 30 days after the shadow price is established. The authors also examined the relationship between a fund's shadow price and any change in net assets over the first 90 days after its shadow price is established in order to capture both effects.

The authors further differentiated between funds reporting shadow prices equal to or greater than \$1 and funds reporting shadow prices under \$1. Investors should have less incentive to react to higher shadow prices. Their share value normally will be limited on the upside to \$1. Purchasing a fund with a higher shadow price, if a reaction to shadow price at all, would most likely be seen as capturing added downside protection, not upside potential. On the other hand, as a fund's shadow price drops below \$1, the potential incentive for shareholders to react to the shadow price increases. Presumably, the closer the shadow price moves towards \$0.995, the more incentive shareholders have to react to that shadow price because of the increased likelihood of the fund breaking the buck and the increased potential of the shareholders experiencing a loss. Regression analyses were run separately on funds with shadow prices at or above \$1 and below \$1 in an attempt to recognize the effect of declining shadow prices on investor activity. Table 1 sets forth the results of the regression analyses for all funds in the data set, regardless of target market.

Table 1: All Funds in Data Set

Timeframe for Change in Total Assets	R-squared Values		
	All Fund Months	\$1 and Above	Under \$1
0-30 days from SP establishment	8.42E-05	0.000111	0.0047
60-90 days from SP establishment	0.000116	0.00015	0.000839
0-90 days from SP establishment	0.000277	0.000360	0.005604

The outcome of this analysis verified the conclusions of the 2012 study. There appears to be no statistically significant correlation between shadow prices and investor activity in money market funds overall. Although the R-squared values for funds reporting shadow prices under \$1 are higher in all cases than the R-squared values for all fund months and for funds in months reporting shadow prices \$1 and above, the values are so small as to make conclusions on that basis impossible. The fact that the results of the longer term study mirror those of the 2012 study may indicate that even as the regulatory reform efforts move forward, with all the associated media coverage and investor attention, the behavior of investors overall has not changed.

Using the same methods, the authors also analyzed the correlation between shadow prices and investor activity separately for retail funds and institutional funds. When the funds were broken down according to target market (retail versus institutional), similar results were found. Table 2 sets forth the results of the regression analyses for the funds in the data set that are designated as retail investor funds and Table 3 sets forth the results for the funds designated as institutional investor funds.

Table 2: Retail Funds Only

Timeframe for Change in Total Assets	R-squared Values		
	All Fund Months	\$1 and Above	Under \$1
0-30 days from SP establishment	3.62E-05	3.49E-07	0.007322
60-90 days from SP establishment	1.96E-05	9.95E-06	0.002051
0-90 days from SP establishment	3.22657E-05	2.62652E-05	0.011830

Table 3: Institutional Funds Only

Timeframe for Change in Total Assets	R-squared Values		
	All Fund Months	\$1 and Above	Under \$1
0-30 days from SP establishment	0.001163	0.003772	0.003652
60-90 days from SP establishment	0.002508	0.007115	0.000701
0-90 days from SP establishment	0.006059	0.017873	0.008911

The study indicates that there is no significant difference between the performance of retail investors and institutional investors in terms of their reaction to shadow price publication. Funds with high investment minimums, presumably populated exclusively by institutional investors, did not perform statistically different than funds with low investment minimums that are designed for retail customers. The highest R-squared value reported by the study overall was for institutional funds in months with shadow prices of \$1 and above and allowing 90 days for investors to react. However, with an R-squared value of only 1.78%, no conclusions could be drawn from this result.

Policy Implications

The study indicates that the SEC's and FSOC's plan to use investor activity to discipline money market fund advisors may be a matter requiring some finesse. As in the 2012 study of the market overall, investors - including institutional investors - showed no statistical correlation between the shadow price of money market funds and their investment activity. As was anticipated in the 2012 study, however, the regulators are considering increasing the transparency and frequency of fund information reporting so as to provide a greater reward for investors to monitor their funds and respond to fund activity (Locke, 2012; "Proposed Recommendations Regarding Money Market Mutual Fund Reform", n.d.). The study cannot predict the effect of these changes if they were to be implemented, but presumably the increased disclosure would have to be sufficiently dramatic to differentiate it from the current regime. The study also cannot predict the impact of the more severe financial incentives for institutional holders that are proposed as structural options going forward, such as targeting a portion of their investment for risk absorption.

The relationship between institutional investor behavior and fund performance appears to be on a spectrum with data only available at either extreme. On the one hand, it is established that in the face of severe market trauma, such as that surrounding the failure of the Reserve Primary Fund, the institutional market will react quickly and in substantial numbers (Dolan, 2008). At the other extreme, the present study indicates that on a day-to-day basis, the institutional market does not reward funds for maintaining higher shadow prices or punish them for maintaining lower ones. It is possible that there are one or more market structures and conditions in which

institutional investors would provide ongoing discipline to the market without causing destabilizing runs on money market funds. Whether any of the FSOC's proposals would produce that "just right" level of investor oversight and discipline is unknowable from the study.

A related fact that may be demonstrated by the study is that the ability of the regulatory community to predict the reaction of the market to a particular regulatory structure is imperfect. The SEC's 2010 reporting regime was designed to engender an appropriate level of discipline. It could be argued that the reporting requirements and other elements of the 2010 reforms were substantially effective (ICI Research Perspective, 2013) and that the lack of correlation currently seen between shadow prices and investor behavior are a result of money fund managers adjusting their management activity so as to render investor oversight not meaningful. In support of that argument, the study did reveal a lower percentage of observations of shadow prices below \$1 for institutional funds than for retail funds (25% of total observations for institutional funds versus 34% for retail funds). It is impossible, however, to extend the study longitudinally into the past because funds were not required to report shadow prices on a monthly basis prior to 2010. The SEC's own study only reports that the range of shadow prices has "contracted" since 2010 ("Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher", 2012). It would seem reasonable to suggest that the shadow price reporting experience should engender caution on the part of any regulator in this market seeking to harness the activity of the investor community to provide market discipline.

The recent activity of the regulators may, however, have created a market change more dramatic than they had expected. Perhaps in anticipation of incipient regulatory requirements, a handful of funds (although representing a significant percentage of the industry) voluntarily began reporting shadow prices daily to the public in January 2013 (Paskin, 2013). The first fund sponsor to announce the new reporting approach was Goldman Sachs, traditionally seen as an institutionally oriented firm. Other firms followed, such as JPMorgan Chase & Co. and Fidelity Investments, presumably out of competitive pressure. However, Vanguard, a traditionally retail firm, stated that it does not intend to post its daily shadow prices to the public (Kerber, 2013). This new development by the industry may obviate the entire shadow price disclosure regime if it becomes an industry norm. Whether that is good, from a regulatory or systemic risk perspective, is another question. Immediately available public information on money fund health could induce market stress in times of rising interest rates or credit events that erode money fund share values. Although the SEC is reportedly pleased with the move by the major fund companies (Kerber, 2013), it could conceivably find itself backtracking and seeking to restrict shadow price information flow if the reporting itself increases short-term credit market volatility.

CONCLUSIONS

There appears to be various levels of disconnect in the relationship between shadow price reporting and the current regulatory reform efforts. In 2010, the SEC created a new reporting regime designed to impose discipline on money fund managers. The study indicates that imposition is not currently effective for either retail or institutional funds. Securities regulators have the option to either accept that lack of correlation as a reality of investor behavior or they can seek to increase the disclosure, or impose other financial incentives, in order to achieve the level of market discipline they seek. Current indications are a preference for the latter. At the same time that regulators are discussing the options, major market players have moved forward offering the most extreme level of shadow price reporting that either the FSOC or the SEC has considered. It is a surprising move on their part and seemingly out of sync with the past negotiations between the industry and the regulatory community over the future of the product ("ICI and Money Market Working Group Statements on FSOC Action on Money Market Fund Regulation", 2012).

Another disconnect in the current situation may be one of the underlying premises of the regulatory effort. The focus of regulatory thinking has been on restructuring money funds so that investors would not have an incentive to "run" on money funds because of the disruption and potential risks funds face when assets decline precipitously (Patterson, 2012). That focus could be subject to question as it was arguably not the run on the funds that ultimately required government intervention, but rather the funds' own retreat from the commercial paper market. In 2008, the Treasury had already committed to allow Lehman Brothers to fail and did not determine to save the Reserve Primary Fund when it was forced to close and liquidate. If the 2008 crisis had been relegated to money funds and the risk of loss concentrated on money fund shareholders, it is entirely possible that the Treasury would not have intervened as it did. At the same time, if institutional money fund shareholders had not reacted to

the crisis, money funds conceivably might have still redirected funds from the commercial paper market to the Treasury market because of their low tolerance for loss and the unknowable, but expanding, scope of the contagion instigated by the Lehman failure. The funds' own liquidity crisis caused by institutional investor redemptions only exacerbated a problem that already existed by nature of the funds' low loss tolerance. Once Lehman's failure triggered the domino effect in the financial markets, money funds had a natural incentive to retreat to the safety of the Treasury market, to some degree, which may ultimately have been the breakdown that forced the Treasury and the Fed to act. In other words, one could argue that it is the systemic power that money funds now hold to freeze the short-term credit market, rather than their own vulnerability, that must be addressed.

A final disconnect that may have added to the difficulty in the market reform efforts is the unusual role the regulators have been called upon to play. The SEC's historical role of protecting investors has been exercised through its disclosure regime ("How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation", n.d.). As long as purchasers of securities receive sufficient risk information to make investment decisions, the SEC need not concern itself with the overall level of risk in any security – that is simply a matter of investor appetite. In the money market reform situation, the effort is not intended to directly benefit money fund investors. Institutional investors may even be disadvantaged. The proposed industry models are also not designed to benefit issuers of money funds or their advisors. Both have the potential for increased costs in the new regulatory regime. The effort to reform money market funds seems designed to address systemic risk, generally, and the vulnerability of the commercial paper market, in particular. We saw this disconnect personified when a majority of SEC Commissioners were reluctant to move forward with money fund reform at the same time that the FSOC (a group more focused on systemic risk) was demanding that it advance (Lynch, 2012). Further clarification of the roles of the different regulatory bodies and the competing goals of investor protection and systemic security may be in order.

The lack of correlation that continues to be found between shadow price reporting and investor activity highlights the complexity of the relationship between this market and its regulatory superstructure. As those responsible for regulatory policy, and those responsible for directing the industry, continue to seek a new model for the money market mutual fund product, they would be well served to consider the effects on the investor community, the market overall, and an industry that has served both with distinction for the last four decades.

AUTHOR INFORMATION

Professor Larry Locke holds a JD from Harvard Law School, an MBA from Harvard Business School, and a MATH from Gordon-Conwell Theological Seminary. He worked for 14 years in the financial services industry, including seven years at Fidelity Investments during part of which he represented the Money Market Trading Desk. Professor Locke currently teaches at the University of Mary Hardin-Baylor College of Business. His research interests include strategic responses to regulatory environments and the ethical integration of faith and business. E-mail: llocke@umhb.edu (Corresponding author)

Mr. Ethan Mitra is a Junior Economics and Journalism major at the University of Mary Hardin-Baylor.

Miss Virginia Locke holds a BS in Economics from the University of Mary Hardin-Baylor.

REFERENCES

1. 17 CFR § 270.2a–7. (n.d.). gpo.gov. Retrieved February 6, 2013, from <http://www.gpo.gov/fdsys/pkg/CFR-2010-title17-vol3/pdf/CFR-2010-title17-vol3-sec270-2a-7-id1094.pdf>
2. 2012 Investment Company Fact Book. (n.d.). ICI. Retrieved January 22, 2013, from www.ici.org/pdf/2012_factbook.pdf
3. Condon, C. (2012, August 24). Money Funds Test Geithner, Bernanke as Schapiro Defeated. *Bloomberg*. Retrieved February 9, 2013, from <http://www.bloomberg.com/news/2012-08-23/money-funds-test-geithner-bernanke-resolve-as-schapiro-defeated.html>
4. Dolan, K. (2017, September 8). A Large Money Market Fund Breaks the Buck. *morningstar.com*. Retrieved January 24, 2013, from news.morningstar.com/articlenet/article.aspx?id=253485

5. Frequently Asked Questions About Money Market Funds. (n.d.). *ICI* Retrieved February 9, 2013, from http://www.ici.org/mmfs/basics/faqs_money_funds
6. Gerth, J., & Nguyen, D. (2010, February 6). Timeline: Paulson “Alarmed” by GE Exec’s Disclosures *ProPublica*. Retrieved January 22, 2013, from <http://www.propublica.org/special/paulson-ge-timeline>
7. Holzer, Jessica. (2012, December 7) SEC’s Aguilar Warms Up To Money-Fund Overhauls. *WSJ* Retrieved February 9, 2013 <http://online.wsj.com/article/SB10001424127887324640104578165590981680774.html>
8. How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation (Securities and Exchange Commission). (n.d.). U.S. Securities and Exchange Commission. Retrieved February 9, 2013, from <http://www.sec.gov/about/whatwedo.shtml>
9. ICI and Money Market Working Group Statements on FSOC Action on Money Market Fund Regulation. (2012, November 13). *ICI*. Retrieved February 9, 2013, from http://www.ici.org/pressroom/news/12_news_fsoc_action
10. ICI Research Perspective; Money Market Mutual Funds, Risk, and Financial. (2013, January). *ICI*. Retrieved February 8, 2013, from www.ici.org/pdf/per19-01.pdf
11. Kerber, R., & Pressman, A. (2013, January 9). Big asset managers plan to post money fund values daily. *Reuters.com*. Retrieved January 22, 2013, from <http://www.reuters.com/article/2013/01/09/us-goldman-funds-idUSBRE9080KT20130109>
12. Locke, L., & Locke, V. (2012). The SEC’s Attempted Use Of Money Market Mutual Fund Shadow Prices To Control Risk Taking By Money Market Mutual Funds. *The Clute Institute Journal Of Business & Economics Research*, 10, 345-354. Retrieved January 22, 2013, from <http://journals.cluteonline.com/index.php/JBER/article/view/7025/7099>
13. Lynch, S. N. (2012, December 7). SEC's Aguilar says could support money market proposal. *Reuters.com*. Retrieved February 9, 2013, from <http://www.reuters.com/article/2012/12/07/us-moneyfunds-aguilar-idUSBRE8B60T920121207>
14. Mamudi, S., & Burton, J. (2008, September 17). Money market breaks the buck, freezes redemptions. *The MarketWatch*. Retrieved February 9, 2013, from http://articles.marketwatch.com/2008-09-17/finance/30738259_1_peter-crane-reserve-primary-fund-money-market
15. Paskin, J. (2013, January 9). Goldman Sachs Adopts a Money-Market Reform. *Businessweek*. Retrieved January 22, 2013, from <http://www.businessweek.com/articles/2013-01-09/goldman-sachs-adopts-a-money-market-reform>
16. Patterson, Scott. (2012, November 14). 2: Watchdogs vs. Money Funds. *WSJ* C2.
17. Proposed Recommendations Regarding Money Market Mutual Fund Reform.(n.d.). *treasury.gov*. Retrieved January 22, 2013, from www.treasury.gov/initiatives/fsoc/Documents/Proposed%20Recommendations%20Regarding%20Money%20Market%20Mutual%20Fund%20Reform%20-%20November%2013,%202012.pdf
18. Report of the President’s Working Group on Financial Markets. (n.d.). *treasury.gov*. Retrieved January 22, 2013, from www.treasury.gov/press-center/press-releases/Documents/10.21%20PWG%20Report%20Final.pdf
19. Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher. (2012, November 30). U.S. Securities and Exchange Commission. Retrieved January 22, 2013, from www.sec.gov/news/studies/2012/money-market-funds-memo-2012.pdf
20. Schapiro, M. L., (2012, June 21). Testimony on “Perspectives on Money Market Mutual Fund Reforms”. U.S. Securities and Exchange Commission. Retrieved February 9, 2013, from <http://www.sec.gov/news/testimony/2012/ts062112mls.htm>
21. Securities And Exchange Commission 17 CFR Parts 270 and 274 [Release No. IC-29132; File Nos. S7-11-09, S7-20-09]. (2010, February 23). U.S. Securities and Exchange Commission. Retrieved February 6, 2013, from <http://www.sec.gov/rules/final/2010/ic-29132.pdf>
22. Shilling, H. (2010, August 9). Sponsor Support Key to Money Market Funds.*alston.com*. Retrieved January 22, 2013, from www.alston.com/files/docs/Moody's_Report.pdf
23. Statement of SEC Chairman Mary L. Schapiro on Money Market Fund Reform; 2012-166; August 22, 2012. (2012, August 22). U.S. Securities and Exchange Commission. Retrieved January 22, 2013, from <http://www.sec.gov/news/press/2012/2012-166.htm>

24. Stempel, J. (2012, March 29). Reserve Primary Fund founder fails to end SEC fraud case. *Reuters.com*. Retrieved January 22, 2013, from <http://www.reuters.com/article/2012/03/29/reserve-sec-idUSL2E8ETAM120120329>
25. US SEC Adopts Amendments to Rule 2a-7 Affecting Money Market Funds.(2010, April 7). Mayer Brown . Retrieved February 9, 2013, from <http://www.mayerbrown.com/publications/US-SEC-Adopts-Amendments-to-Rule-2a-7-Affecting-Money-Market-Funds-04-07-2010/>
26. Waddell, M. (2012, March 16). SEC's Schapiro Opposes Stopping Money Market Reforms. AdvisorOne: Investment News and Analysis for Financial Advisors. Retrieved February 9, 2013, from <http://www.advisorone.com/2012/03/16/secs-schapiro-opposes-stopping-money-market-reform>
27. Wyatt, E. (2012, November 13). Top Financial Council Pushes for Stronger Money Fund Rules. *The New York Times*. Retrieved January 22, 2013, from <http://www.nytimes.com/2012/11/14/business/panel-pushes-for-stronger-money-fund-rules.html?ref=edwardwyatt&r=0>