Fall 2014

Money Market Funds: Analyzing Reform

Paige M. Brooks

University of New Hampshire - Main Campus

Paige Brooks
University of New Hampshire
Senior Thesis
ADMN 799H
December 11, 2014

Money Market Funds: Analyzing Reform

Table of Contents

I. INTRODUCTION

Money market funds consistently prove to be instrumental investment vehicles in the U.S. Economy and abroad. Their performance is a strong indicator of economic performance and investor activity. While being among the safest investments available, they are influential in tracking economic progress and investor confidence. They are virtually the only investment vehicles where investor confidence is the driving force of performance. "Money-market funds depend on the faith of their investors and are different than normal market products," said Mercer Bullard, a professor at the University of Mississippi School of Law who has advised the SEC on regulatory matters. "They need constant reassurance that the system is working" (Hilensrath). In this paper, the performance of money market funds is examined pre and post 2008 financial crisis specifically in terms of reform. Being that money market funds failed to perform as intended in 2008, the SEC has been working since to change the structure of the funds to prevent this from happening again.

The most recent reform was announced in July 2014 effectively changing the underlying structure of money market funds pursuant SEC Rule 2a-7. History can provide an enormous amount of insight into how this reform will affect money market funds in the future. This paper serves to analyze if the reform in 2014 will be successful in preventing another crisis. With changes being implemented within the next two years, this issue is extremely current and an analysis of the reform will drive how portfolio managers seek to manage money market funds in the future.

Steps taken by the SEC are examined in terms of how they attempt to engineer investor confidence and prevent an economic collapse. However, some suggest this is insufficient in addressing the cause of potential trouble that lie with money market funds. A timeline of events is provided for reference as Appendix A.

II. MONEY MARKET MUTUAL FUNDS

a. *The U.S. Money Market*

The money market refers to the market for debt securities which have a maturity of one year or less. This provides an effective way for investors to finance short-term positions. In order to borrow in the money market, an institution would issue short-term debt securities, and therefore would be an issuer. The main issuers in the money market are the U.S. Treasury, U.S. government agencies, state and local governments, and financial institutions. A government may have a very different reason for becoming an issuer in the money market than a corporation. For example, a mortgage-related government agency would become a borrower in order to manage interest rate risk (Report of The Money Market Working Group, 13). A corporation may become a borrower in order to finance short term operating needs (Report of The Money Market Working Group, 14).

The money market serves many purposes across the board, and can be accessed in several ways. Money market instruments, or securities, vary as well depending on the issuer. Instruments include treasury bills, repurchase agreements, certificates of deposit, etc. Investors can access these instruments through different distribution channels, the main one being money market funds governed by SEC

Rule 2a-7. It is estimated that the total outstanding value of securities typically held by taxable money market funds and other investment vehicles in 2009 was roughly $12 trillion (Report of The Money Market Working Group, 15). Although borrowers and investors have varying reasons for entering into the U.S. money market, it is clear that it can have a huge effect on the stability of the economy. Being able to finance short-term positions in a safe environment may save a financial institution or corporation from volatile investments and potential damaging losses.

b. *Significance of Money Market Funds in the U.S. Market*

Money market funds (also referred to as money funds) are, by definition, registered investment companies that are regulated by the Securities and Exchange Commission (SEC) and governed by Rule 2a-7 adopted pursuant the Investment Company Act of 1940 (Report of The Money Market Working Group, 16). Therefore, the funds themselves are considered investment companies that invest in various low risk securities. Once Rule 2a-7 came into effect in 1983, cash has been pouring into money market funds. They have since become a vital part of the U.S. money market by acting as a financial intermediary for several borrowers and investors. A graph from the Investment Company Institute shows the total net assets of money market funds from 1983 through to January 2009 (Appendix B). Total net assets have been on a steady incline since 1983, increasing from $180 billion to $3.9 trillion in the 26-year timeframe (Report of The Money Market Working Group, 18).

c. *Types of Money Market Funds*

As for types of money market funds, there are several that invest in different types of securities and are therefore have varying degrees of riskiness. These types include retail funds, institutional funds, municipal funds, and government money market funds. Some of these funds can also be classified as prime (e.g. a prime retail fund or a prime institutional fund). A retail fund and an institutional fund have different characteristics that are unique. Under the 2014 reform rules, certain requirements apply to one type but not the other. 2014 reform also redefined what the difference is between a retail fund and an institutional fund. A retail fund is newly defined as a fund whose main investors are individual investors. An institutional fund is one where the main investors are corporations or financial institutions, effectively anything that does not fall under the individual investor category. Municipal funds are those than invest in municipal investments, such as municipal bonds. Prime funds are the riskiest type of money market funds, investing in higher yielding commercial paper or high-grade corporate debt (Hilensrath). Government money market funds are limited to investing in government securities such as treasury bills. Therefore, there are varying degrees of riskiness involved in money market funds and that is reflected in the newest reform.

d. *Features of Money Market Funds*

There are many features unique to money funds that contribute to their popularity including (A) return of principal, (B) a market-based rate of return, and (C) liquidity. It is important to examine first how money funds developed into such a dynamic and enticing investment opportunity. Money funds came to life in the 1970's in order to allow investors who would not have means otherwise to utilize the money market. Prior to the 1970's the money market was only available to wealthy individuals and large institutions who had substantial assets to invest.

Other investors with fewer assets were subject to investing in bank accounts that paid no interest, while money market funds were offering yields higher than banks were legally allowed to. These investors could not meet minimum investment requirements for other investment vehicles in the money market but wanted to make use of their extra cash. They fueled the demand for money market funds (Report of The Money Market Working Group, 21). This also allowed money market funds to be treated like cash management tools by providing an option for all investors to manage their cash in a low risk environment while receiving a small return.

e. *Return on Principal*

Because money funds are managed much more conservatively than other types of funds, there is a good chance that an investor will see a small return on the principal amount that they invested. The stable $1.00 Net Asset Value (NAV) helps contribute to this confidence. The objective of a money market fund is to keep the NAV of the fund at $1.00 per share (Money Market Fund). A NAV is an investment company's net assets minus their net liabilities. In order to convert this to a per share value, a company divides their net asset value by number of shares outstanding. Every mutual fund is required to report a daily NAV after the market has closed. The share price of mutual funds is based on the daily NAV. Therefore, a money market fund keeping their NAV at $1.00 per share means a price for a share would be $1.00 (Net Asset Value). If the NAV stayed at $1.00 every day, then an investor would buy a share for $1.00 and sell that share for $1.00. This facilitates a low-risk, low-reward atmosphere. Keeping the NAV at $1.00 means that there are no capital gains or losses from money funds, and returns are paid out only as dividends. If a NAV falls below $1.00 per share, it is referred to as "breaking the buck." The stability of the NAV also allows investors to treat a money fund similarly to a checking account or other cash management tools, meaning that a lot cash flows between money funds daily (Report of The Money Market Working Group, 23).

f. *Market Rate Return*

In order to do this, money market funds are allowed to use several different methods to stabilize the Net Asset Value of a fund at $1.00 per share. For instance, money market funds can use penny rounding to arrive at a $1.00 NAV. Penny rounding is a method of computing the daily price per share for an investment company. It is only permitted with money market funds, and involves rounding per share market value of the fund to the nearest cent on a share value of a dollar (Cook, 165). As long as the market value of a share remains within one-half a cent of a dollar, the NAV will stay at $1.00 evenly. This ensures that the fund's NAV will always be $1.00 at the end of a trading day. For another example, money market funds can use the amortized cost method of valuation to facilitate low risk returns. This means that securities are valued at acquisition cost, not at market value. Any interest, gains, or losses are accrued over the maturity of the security and paid out as dividends to shareholders, while the value of the securities themselves remains at $1.00 (Cook, 164).

The stable value of a money fund is a large contributor to their success, and any indications that the actual value of the securities is falling below $1.00 causes shareholder stress. While these methods may seem to deal with insignificant rounding, when an investor has millions involved in a money market fund, a rounding of a few basis points can amount to a gain or a loss of thousands. Investors depend on these methods to maintain a $1.00 share redemption value because a fall to even $.99 could mean a huge loss for highly invested participants. This fall below the dollar is one of the contributors to the reason that money market funds started to fail during the 2008 financial crisis, and is largely examined in this paper.

g. Liquidity

Another feature allowing investors to treat a money fund like a cash management tool is "same-day" liquidity. Investors can redeem their shares at the $1.00 NAV and receive the money that day. This makes money funds a viable option for managing cash for short-term needs like payroll because the cash is easily accessible. Furthermore, investors can have confidence that money funds are safe because they must invest in only high quality, liquid assets (Report of The Money Market Working Group, 23). Money funds may only invest in securities that receive no lower than the second highest rating from the requisite Nationally Recognized Statistical Rating Organizations (NRSROs) like Moody's, Fitch, or Standard's & Poor (S&P). First tier securities receive the top short-term rating from any two nationally ranked NRSROs or only one NRSRO if only one has ranked the security. U.S. Government securities are considered first tier and are therefore frequently bought by money funds. Second tier securities have received one of the top two short-term ratings from any two nationally ranked NRSROs. Only 5% of a money market fund's assets can be invested in second tier securities. The security also has to have a maturity of 397 calendar days or less, to ensure liquidity (Securities and Exchange

Commission). Therefore, 95% of a money fund's assets must be invested in securities that have received the top short-term credit rating from a nationally ranked organization. It is evident how strict the quality must be for money market funds to invest in certain assets, which allows investors ease of mind when investing.

h. *Restriction of Ownership*

Another important requirement to note about money market funds is the restriction of ownership. Pursuant to SEC rule 2a-7, a money fund cannot hold more than 5% of securities from a single issuer (Securities and Exchange Commission). For example, if 5% of a fund's assets are invested in first tier Bank of America securities, that fund cannot invest in a single additional security from Bank of America. The goal of this is to effectively diversify money funds and prevent one issuer from having too much control in a fund. If an issuer cannot have more than 5% ownership in a fund, then bankruptcy on the part of the issuer would have less of an impact on the overall fund.

III. HISTORY OF THE MONEY MARKET

a. *The Great Moderation: 1980's to 2007*

"The Great Moderation" refers to a period of low inflation and stable economic growth from the mid 1980's to 2007. It represents the longest economic expansion since World War II. This was not just a phenomenon that occurred in the United States, as many other advanced economies worldwide experienced the same type of decline in volatility. What this means is that GDP and inflation did not vary greatly year to year during the Great Moderation. It does not represent a time when inflation was steadily declining or GDP was steadily increasing, and then drastically switched, but rather that those figures could be easily estimated due to a low degree of change. In fact, a steady increase in GDP is evident during this time period (Hakkio). This shows that even though GDP was steadily increasing, it was not at a volatile rate where steady decreases were also apparent. A graph from the Bureau of Economic Analysis shows inflation rates from 1960 to 2010, with the Great Moderation shaded in (Appendix C). This graph shows that between about 1984 and 2007, inflation rates were fairly steady, ranging only slightly between years (Hakkio). According to the U.S. Inflation Calculator, the inflation rate in January of 1995 was 2.8%. Five years later in January of 2000, the inflation rate was only 2.7%, a 0.1% difference. In between those five years, the highest inflation rates ever peaked to was 3.7% in June and July of 2000. The lowest inflation dipped to was 1.7% in February-April of 1998 (Historical Inflation Rates).

Therefore it can be shown that inflation rates during the years of the Great Moderation were relatively steady and predictable. Compare this to the beginning of the economic crisis in 2007 and the results are very different. A similar graph from the Bureau of Economic Analysis shows the volatility of real GDP growth from 1960 to 2010 (Appendix D). A chart of percent changes in GDP from the previous period, also from the Bureau of Economic Analysis, shows that between the same periods analyzed above, 1995 to 2000, GDP only grew by more than 10% once, between quarter 1 and quarter 2 of 2000, which is also in keeping with the high inflation rate during that timeframe. The average percent change in real GDP during the Great Moderation is 5.7%. Furthermore, until 2008 the GDP only declined once, by -0.4%, in quarter 4 of 2000. In quarter 4 of 2008, the real GDP declined by 7.7%, the largest decline on record since 1949 (National Economic Accounts).

Price stability was a large factor during the period of the Great Moderation. It is argued that if central banks focus on price stability, high employment and economic growth will follow. Of course, a change in inflation is inevitable; therefore price stability refers to a small, positive rate of measured inflation. If this is the case, households and firms do not have to make economic decisions based on the fear that inflation will negatively affect their assets. Therefore, price stability promotes investing in safe financial instruments like money market funds, because it gives people confidence that time value of money will not negatively affect their investments. This increased confidence also eventually fosters risk taking in other investments, such as mortgage-backed securities. Asset prices and returns are a big factor when consumers make investment decisions. These prices and returns can shift for many reasons, including fundamental changes in supply and demand or inflation. If the economy is a product of price stability, consumers can more confidently attribute price fluctuation to a reason other than unsteady inflation and invest accordingly. Price stability over a long period of time, or long-run price stability, produces the same result on a more widespread economic basis (Poole).

A stable price level leads to more accurate forecasts of real returns on investments. If inflation turns to deflation, it is very difficult for business decisions to receive a positive return and therefore this can lead to less investments and allocation of resources. Price stability is the backbone of a functioning economy and directly affects investments in money market funds. Long-run price stability also allows monetary authorities to focus on other aspects of financial stability such as the management of financial crises. This is evident during the Great Moderation, because a shock to the nation like September 11, 2001 was a temporary financial upset that did not have a lasting effect on the economy (Poole). The Great Moderation was also a very stable time for the U.S. financial system due to the structure of the economy and good policy.

Before the Great Moderation, interest rates were high and inflation was growing quickly. To comply with regulation, banks offered money market funds paying dividends as interest payments rather than offering high yields in checking accounts. In early 1983, money market funds were experiencing net cash outflows, meaning that more money was coming out of the money funds than was coming in. This prompted the SEC to revise the rules governing money market funds in July 1983. This allowed money market funds to report a stable NAV as discussed earlier. While this was proving to offer a solid investment opportunity since such changes were made, the end of the Great Moderation signaled the end of money market fund stability.

b. *The Financial Crisis - 2008*

The financial crisis of 2008, often referred to as the Great Recession, shook up every single aspect of the economy and affected everyone. While the debate about the key causes of the crisis will go on forever, the actual events cannot be disputed. As discussed, the Great Moderation was a time of great stability, which actually ended up fostering risk taking. It was a time when investors could, for good reason, feel comfortable about increasing debt in a seemingly less risky environment. It was that risk taking the lead the economy to invest in certain securities without fully evaluating the threats associated with them. It has also been argued that money market funds were being taken advantage of by foreign banks before the crisis began, putting them in a vulnerable position from the start (The Origins of the Financial Crisis).

Many foreign banks pool dollar assets owned including securities and bonds and fund these pools with money markets. Short-term borrowings can create a big advantage for foreign banks to quickly earn more on their assets if they are pooled together through the American money market. However, in a time of market stress when liquidity is not a guarantee, this strategy can pose some problems. When the money market starts to dry up, meaning there is an acute shortage of liquidity, foreign banks cannot continue to reinvest their funds into the market. To put it more simply, if an investor cannot get their money back after making an investment, there is no way they can reinvest that money, or roll it over. This causes the acute shortage of assets readily convertible to cash to turn into a liquidity crisis (Keoun).

European banks that have exposure in the money market are mostly banks that have United States subsidiaries (Hilensrath). Because these banks do not actually have a base or a platform for customers to deposit or withdrawal, they do not have access to the dollar market. They therefore use the money market funds to gain access to it. For example, BNP Paribas is a subsidiary of Bank of America, but Americans cannot go to a BNP Paribas branch to deposit funds like they would at Bank of America. BNP Paribas alternatively invests in money market funds in the U.S. to gain access to this market. During the financial crisis, the money market started to dry up. European banks had to continue to borrow more because there was a problem rolling over their original investments. By utilizing short term borrowing more heavily, these banks were thereby increasing exposure in money market funds. By December 2008, the Fed was dumping more than $600 billion into efforts designed to help these European banks meet loans (Hilensrath). This would prevent these foreign banks from creating losses for American money market funds.

c. *Causes of the Financial Crisis*

The financial crisis itself caused big firms with large investments in money market funds to crumble. However the crisis began for several reasons, including poor regulation and a global crisis emerging as well. The most well known cause of downfall is the mortgage crisis. The problem had been brewing for years before the economy started to show cracks. Due in part to relaxed banking rules and regulation, an unusually high number of lenders were offering subprime mortgages with high interest rates to borrowers with poor credit history. Banks often buy and sell mortgages in order to have rights to interest and principal payments without the duty of handling the actual mortgage. Therefore, since the banks were planning on selling the mortgages off anyway, the credit history and eligibility of the borrowers was not taken into much consideration. These mortgages were used to back mortgage-backed securities (MBS) and collateralized debt obligations (CDO) to be invested in. Depending on the rating received by Moody's or Standard & Poor's based on exposure to default, investors would invest in so called slivers of this pool (The Origins of the Financial Crisis).

The problem was the ratings given to these securities did not accurately reflect exposure risk. They were given investment grade ratings as opposed to high yield ratings, which made them seem safe (The Origins of the Financial Crisis). Investors jumped at these securities because the high interest rates associated with these securities were more attractive than what was otherwise offered.

If interest rates in government bonds were too low for the return desired by hedge funds and banks, and the MBS's and CDO's looked reasonably safe, there was no reason to shy away from investing. This in turn caused banks to prefer to issue subprime mortgages and sell them off. As discussed earlier, the stability of the Great Moderation allowed investors the overwhelming possibly over-confidence to invest in these securities rather than those government backed securities because interest rates proved to be very steady, even if low.

One of the problems with this investment strategy is the lack of diversity. Pooling investments is a key tool portfolio managers use to add diversity to portfolios. Using more money to invest in a wide range of security types allows for a greater balance between risk and reward. The safety, but low return, of one investment can be offset by the riskiness and higher return of another. If funds are too heavily invested in one type, when that type potentially defaults, the whole portfolio loses money. Therefore, investments in these mortgage-backed securities were not diversified enough. The hope was that housing markets in different American cities would rise and fall at different times, introducing different levels of volatility. Unfortunately the housing crisis proved to be nation wide, and the cracks in the system started to show. The subprime mortgages started defaulting, as faulty borrowers were unable to pay their loans. A mortgage-backed security is just that, a security that is backed by the payments of principal and interest from borrowers. More commonly, it is several hundred mortgages collected into a pool that is backing the security. These are normally low risk because if hundreds of mortgages are securing it, one payment default from one borrower does not make much of an impact.

During the financial crisis, all of the newly issued MBS's started to fail. They were originally rated highly which allowed money market funds to invest in them. Because the housing market fell everywhere in the U.S. at the same time, several thousand borrowers could not make their principal or interest payments. This caused the value of these mortgage-backed securities to fall severely. The lack of diversity and false ratings on these securities were the main reason so many people were affected because they were not effectively labeled, as they should have been by NRSROs. Once values of these securities started to tank, a lot of investors were losing money on these investments, not receiving the reward they anticipated. Some MBS's lost most if not all the value they had (The Origins of the Financial Crisis).

The lack of money circulating that this caused was arguably not as detrimental as the lack of trust and confidence in the market that resulted from this. Selling any suspect assets or collateralizing short term funding became almost impossible. Furthermore, financial institutions were forced to mark their securities to market, meaning they had to reevaluate the value of their securities to current day, incurring huge losses that put a large dent in their capital. The fact that banks needed cash fast meant they needed to fire sale securities, selling them quickly at very large discounts (The Origins of the Financial Crisis).

Another huge contributor to this was credit default swaps. A credit default swap is essentially an insurance policy, where the seller of the swap is the insurer, agreeing to pay the buyer of the swap if some third party defaults on a loan that the buyer issued. As anticipated, a lot of buyers were trying to rely on these when their investments went under, which exposed to the sellers of these swaps to the reality that they could not actually execute these protections. American International Group (AIG), a huge insurance company, was the first to crack under this phenomenon, unable to finance all of the protections it had sold. The problems with the financial system were glaring at this point in 2007. Companies could not pay their debts, insurance policies were worthless, securities had no value, and any transactions were relying on borrowed money. Any and all financial positions were severely underfunded, meaning the capital companies had on hand was not nearly enough to cover their losses. The risks financiers were taking were backed by borrowed money that proved impossible to pay back (The Origins of the Financial Crisis).

This trickled down to the real economy and the average household very quickly. Because no trust was in the economy, no one was lending at a time when most everyone needed money. This caused a sudden stop in spending by most companies in an effort to keep the cash they had to pay suppliers they were already in debt to. Because spending stopped, the very nature of how the economy works was at risk. Prices went up, people were not being paid, and all of sudden lay offs were necessary. The trouble went from central banks and financial institutions, to large non-financial companies, to the consumer. As these truths became more apparent, there are arguments that central bankers and regulators alike did not do enough to stop the inevitable from happening. Because the downfall did not seem inevitable at the time, as the Great Moderation was time of economic peace, regulators were under fire for slipping on the job. The next huge disaster for the United States economy was the Lehman Brothers bankruptcy. The company spiraled out of control and led to the first break of the buck for money market funds.

d. *The Lehman Brothers Bankruptcy*

The Lehman bankruptcy was filed in September 2008; the largest investment bank failure since 1990 when Drexel Burnham collapsed (Sorkin). While the government was busy bailing out financial institutions (e.g. Freddie Mac and Fannie Mae) that had backed faulty mortgage-backed securities in 2007, Lehman got no such help. It was up to Wall Street to find a way to save Lehman and other financial institutions from bankruptcy. As other firms pulled business from Lehman and their stock started to tumble, they searched frantically for a buyer. But with Merrill Lynch faltering at the same time and every big Wall Street name being implicated by risk real estate investments, this proved to be an extremely difficult task. Bank of America negotiated a purchase of Merrill Lynch at this time, but refused talks with Lehman. (Sorkin).

Lehman was very much on it's own to find a way out of this crisis. The government nor any outside firms were intervening to save the company. One of the reasons for this is because Congress had not passed the Trouble Asset Relief

Program (TARP) at that point; therefore the Treasury Department had no legal authority to put government money into the firm. Ultimately, the exchange stabilization fund that was in place was not used because the Lehman failure was not actually threatening the stability of the dollar. The stabilization fund was rather used later on to prop up the Reserve Primary Fund after it broke the buck, but there was not enough evidence that federal intervention could save Lehman from an inevitable bankruptcy filing. The Fed's intervention into other firms was justified by the existence of enough good assets to prevent taxpayers from bearing a loss, while Lehman's entire business was sinking. The government intervenes when it has the authority, but more importantly when government money is at risk, evident in the JPMorgan Chase emergency acquisition of Bear Stearns (Swagel).

The Lehman Brothers, Inc. was a 158 year-old investment bank that survived every credit decline in the U.S. economy since the 1900's. Their clients are big institutions that were also greatly affected by the collapse. Lehman Brothers was the largest underwriter of the mortgage-backed securities during 2007 that proved to be huge failures, as discussed earlier.

In 2004 Lehman, led by Richard Fuld, bought BNC Mortgages specifically to expand their business of lending money to borrowers with bad debts and heavy loans. They profited huge from packaging these mortgages into the misleading triple A rated securities. Because these faulty MBS's were the main cause of the crisis, Lehman was set up to take the biggest hit. In August 2007, Lehman was forced to shut down BNC Mortgages and lay off 1,200 employees, or about 4.2 % of their workforce (Onaran). They were the first firm on Wall Street to completely close their subprime lending business unit. In a regulatory filing in July 2007, Lehman reported an unrealized loss on these mortgage-backed securities in one quarter at $459 million. According to the filing, gains on equities and corporate bonds would offset theses losses, while that clearly was not the case (Onaran). Closing this business would also cost Lehman $25 million in items such as severance pay. In addition, Lehman must write down goodwill for this business at $27 million (Lehman to Shut BNC Mortgage Unit). Goodwill arises when a company acquires another for a price higher than the book value of that company based on intangible benefits. When Lehman shut down BNC Mortgages, it was forced to write down the associated goodwill, further lessening it's assets. Even though BNC Mortgages was closed in 2007, Lehman didn't start reporting actual net losses until 2008.

The first loss came in June 2008 after writing off $17 billion from bad real estate investments. It was the first loss reported since the company went public 14 years prior. The net loss amounted to $2.8 billion at the end of the second quarter (The Collapse of Lehman Brothers). In the third quarter of 2008, another loss of $3.9 billion was recorded. After all buyer talks halted and the government lended no help, Lehman had no choice but to file for Chapter 11 bankruptcy in September. Lehman stocks and bonds that were previously selling at $.80 or $.90 dropped to $.40. The debt implicated on other institutions amounted to about $70 billion with no guarantees of collection (Quinn). It was at this point that other financial instruments were largely affected by the collapse, namely money market funds.

The fund that was hit hard by the collapse of Lehman was the Primary Reserve Fund, a huge money market fund. This was an indicator that even more money market funds were at risk for the same low NAV that struck the Primary Reserve Fund. Lehman collapsed in September 2008 and the Primary Reserve Fund broke the buck on Tuesday (Anand).

The Primary Reserve Fund is owned by The Reserve, a New York based cash management firm that created the first ever money market fund. Through 2007, the Primary Fund was among the Reserve's top performing money market funds. However too much stake in Lehman proved a major loss for the fund in September 2008. The Primary Fund held 1.2% of its assets in Lehman commercial paper on the day of bankruptcy (MONEY MARKET FUNDS IN 2012, 3). Lehman holdings that were valued at a face amount of $785 billion were valued at $0 by Tuesday at 4 p.m.. This forced the Primary Reserve fund to strike a NAV at $0.97 per share by end of day Tuesday. The fund held assets of around $62 billion, but these assets fell severely at the beginning of that week to about $23 billion, a 60% drop after writing off the $785 billion worth of debt issued by Lehman (Anand,). Once Lehman went bankrupt, there was no chance of getting back the money the Fund had invested into Lehman's commercial paper and medium-term notes. Any investors that requested redemptions from the fund before 3 p.m. on the day the fund broke the buck were to be compensated fully at a $1 NAV. Any other investors did end up losing about a penny per share, which adds up quickly when institutions have millions invested (Schapiro). Further, there was a 7-day redemption delay (Condon). As discussed earlier, one of the many benefits of a money market fund is liquidity, and the investor's ability to redeem funds quickly to finance short-term debts. A 7-day redemption delay put a huge strain on investors that needed cash.

Two other funds broke the buck in relation to Lehman debt as well as the possible collapse of American International Group, the leading insurer of credit-default swaps. AIG could not live up to the protection policies it had sold, leaving in the same position as Lehman. One of the funds was also managed under the Reserve, while a second fund in Colorado also broke the buck, which prompted S&P ratings of these funds to go from the highest to the lowest. While these other funds were smaller, it was the signal that was being sent to investors that caused the greatest concern. Other large companies like Northwestern Mutual Insurance attempted to support money funds and limit exposure to Lehman debt after the fund broke the buck (Anand).

The key takeaway from the events following the Lehman bankruptcy is the drop in confidence in the market. Banks were refusing to lend to each other funds in an effort to preserve their liquidity, because of the extreme uncertainty in the market. Furthermore, investors had no faith in securities of financial institutions. Meaning that any stock or bonds issued by financial institutions were not being bought or sold because of the underlying uncertainty pertaining to return on investments. This put a large freeze on the market, meaning no one was participating in transactions and cash was not going anywhere. If cash was not flowing, people shifted their investments. Prime money market funds hold securities of financial institutions, while treasury money market funds do not. Therefore, investors were shifting their money from prime money funds to treasury money funds, keeping investments in the safest vehicle but still taking steps to secure it further. The problem with this was it essentially caused a run on prime money funds, where about $300 billion flowed out of them and into treasury money funds (MONEY MARKET FUNDS IN 2012, 1).

Concerns about other debt held by large banks and financial institutions were also rising rapidly, causing insurance costs for this debt to skyrocket. It resulted in portfolio managers and advisors pulling dollars out of funds that were in reality not risky at all simply due to lack of confidence (MONEY MARKET FUNDS IN 2012, 1).

It was then up to the government to step in and provide some sort of support to prevent any other money market funds from falling below a $1.00 NAV. The Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) provided loans beginning in September 2008 to finance purchases of high quality asset backed commercial paper from money market funds. The intent was to assist funds that held this paper in meeting redemption demands from investors and to jumpstart liquidity in the general money market (Asset Backed Commercial Paper). The only way to meet redemption demands and return money to investors was to sell assets and gain capital. However, if there was no one to sell to, the money funds would remain illiquid and unable to meet those demands. Therefore, the government created this facility by providing the funds to buy the asset backed commercial paper. This allowed the government to step in and abate the problem without carrying out a full bailout. Of course, this was just a temporary solution for the couple months after the market collapsed in September.

IV. MONEY MARKET REFORM

a. *2010 Money Market Reform*

In order to prevent more issues with money market funds as financial institutions attempted to recover, there needed to be more permanent solutions. In 2010, the SEC made changes to money market fund requirements to reflect more stability and market confidence. In January, 2010 these changes were announced. Standards were made stricter, but the main goal was to address liquidity. In a press release from the SEC, Chairman Mary L. Schapiro stated, “These rules will help reduce risks associated with money market funds, so that investor assets are better protected and money market funds can better withstand market crises” (SEC Approves Money Market Fund Reforms). One could even argue that the rules themselves did not have as much significance as the attempted restoration in market confidence. It is still up for debate whether a restoration in confidence has been fully accomplished. The SEC had no choice but to make some sort of changes to money market fund requirements if only to signify to investors that the funds could again be trusted.

The first change to the funds dealt with improving liquidity. Money market funds were required to have a minimum percentage of their assets in highly liquid securities in order to meet demands of shareholders. Prior to this new rule, there were no liquidity mandates regarding the securities that money market funds held. For taxable money market funds, there was a daily requirement that 10% of the funds’ assets are cash, United States Treasury securities, or securities that were cash convertible in one day. All money market funds had a weekly liquidity requirement of 30%, which was a little easier to meet being that the securities held could mature within one week. The key for both of these new requirements was that the investments were made either in cash or government securities. The SEC also redefined an illiquid security as a security that cannot be sold or disposed of within seven days at carrying value. This made it more difficult to invest in illiquid securities at the same time as heightening liquidity requirements because many more securities became ineligible (SEC Approves Money Market Fund Reform).

Additionally, credit quality requirements were made stricter. Contrary to the liquidity requirements put in place, credit quality requirements were being improved, not implemented. The requirements were specifically focused on a money fund's ability to purchase second tier securities. The limit was reduced from 5% to 3% of a funds assets being second tier securities. Second tier securities from a single issuer was reduced to .5% rather than 1%, and the maturity limit was lessened from 367 days to 45 days. Therefore, money funds could invest less in second tier securities, and those securities needed to mature much faster (SEC Approves Money Market Fund Reform). This was meant to further improve liquidity and reduce the possibility that risky securities were being held for long periods of time.

There were further maturity limits that were imposed on money funds during the reform. The goal of setting maturity limits is to protect funds from risks that can arise by holding long-term securities, like sudden interest rate movements. This was accomplished by limiting the average weighted maturity of a funds portfolio to 60 days, as opposed to 90 days.

There were several other requirements imposed that were not related to restricted limits on percentage assets or maturities. Procedures like "Know Your Investor" required funds to anticipate potential large redemptions and alert investors when such redemptions may pose a risk to the actual fund. New stress test requirements mandated that fund managers evaluate the stability of the NAV in shocking market conditions. This rule specifically seems to accomplish what is most important, and that is easing investors fears that money funds will not prove to be solid investments in times of a market crisis. This requires fund managers to prove that the funds can withstand market shifts without detrimentally breaking the buck (SEC Approves Money Market Fund Reform).

One of the main highlights of the financial crisis was the question posed to NRSROs' legitimacy; after so many of the mortgage backed securities that tanked had such high rankings. Therefore, some of the new rules the SEC imposed on money funds had to do with credit ratings from these organizations. The SEC continued to require that these ratings not be the sole rating relied upon to determine a security's quality, but that a money fund also perform its own evaluation. In fact, the requirement that funds only invest in asset-backed securities with a rating from an NRSRO was eliminated, and funds were required to designate four NRSROs every year that were deemed reliable (SEC Approves Money Market Fund Reform).

Reporting to investors was also tightened to ensure full information disclosure. Overall, the 2010 reform did not introduce any dramatic changes to money funds. It mainly involved more monitoring and stricter requirements. The fundamental conditions of money funds per Rule 2a-7 were kept in tact. Still, the changes were enough to steer money funds on track and restore investor faith in them. In January 2013, the Investment Company Institute (ICI) reported positive results from changing the rules. A study performed by the ICI related to stress testing, newly implemented, in 2011 market conditions that proved favorable for money funds (ICI Analysis of SEC's 2010 Money Market Fund Reforms).

The main finding of the study was that the 2010 reform enhanced financial stability, proven by money funds ability to withstand market conditions in the summer of 2011 when there were heavy customer redemption requests. Because funds were required to have a very high level of liquidity and investors were much more aware of how fund managers were situating money funds in the market. In the summer of 2011, a couple of market conditions (e.g. the Eurozone crisis) put stress on money funds to perform as the safest investments. With the Eurozone crisis increasing, and the United States debt ceiling under serious debate, investor confidence was once again faltering (Collins).

Fund managers had appropriately anticipated this and prepared to be ready to redeem an unusually high amount of shares. In order to counteract this, they shortened average portfolio maturity even more than required, and increased liquidity. In order to avoid another situation where funds were too heavily tied to debt of a failing institution, when issues in the eurozone arose, money fund managers acted quickly. Within the first eight months of 2011, fund managers reduced money funds' exposure to banks in the eurozone, and banks noticeably affected by the eurozone. The reduction was from 30% to just 11% exposure. It was this proactive response to imminent market stresses that not only assured money funds' could pay redemptions and keep a stable NAV, but it mainly promoted investor confidence. If investors believed fund managers were reacting to market conditions conservatively, they were less likely to redeem large amounts of their investments which prevents a run on the funds. In concluding the study, ICI CEO and President Schott Stevens stated, "The study confirms that money market funds of 2013 are nothing like the funds of 2008, thanks to the SEC's far-reaching amendments to money fund regulation" (ICI Analysis of SEC's 2010 Money Market Fund Reforms).

Given this positive feedback about the 2010 reform, the debate for further money market reform surged on. While the general consensus of the market was that previous reform had strengthened financial stability, that did not necessarily mean there was overwhelming support for continued reform. A popular debate that developed mostly in 2012 was that money market funds had only broke the buck twice in history, and proved troubles in 2008 had already been addressed. Therefore, there was not any need to fundamentally change the structure of money market funds.

A report issued by the Center for Capital Market Competitiveness highlights this argument well. By 2012, changes significant enough as a changing the NAV reporting for money market funds to floating rather than a stable dollar were in discussion. A main concern with this was that the consequences of such a significant change like this would outweigh the benefits. The costs of maintaining a floating NAV are substantial and runs the risk of investors moving their money to a less regulated sector. There is also a potential pricing issue for many assets held by money market funds as they are not primarily bought and sold on the secondary market. Perhaps the strongest argument against changing the reporting of the NAV is that it does not necessarily solve the main concern with money market funds. Investor confidence is the main source behind a run on a money market fund. If investors are worried they will imminently not be able to redeem their shares at a gain, many investors will redeem hundreds of shares at the same time. Therefore a run is created. A run can still occur on a fund that reports a floating NAV because there is no incentive to keep money where it is if riskiness of the fund increases just because it reports a floating NAV (Blackwell, 5).

A very popular argument for further reform was a more detailed analysis of what happened during the summer of 2011. While no large redemptions posed serious problems towards the newly reformed funds, and no funds broke the buck, there was concern about a quiet run that occurred. A report issued by Chernecko and Sunderam in 2012 examines this closely, comparing Eurozone exposure to the amount of investor redemptions that occurred between June and August of 2011. The findings showed that investors were generally withdrawing from funds that had large exposure to the Eurozone banks that were failing. It also noted that money funds that invest in riskier assets (such as prime funds) did not experience the same investor withdraws. A further finding showed that investors withdrew more in correlation to unsecured investments in the Eurozone rather than secured. The problem that this creates is that outflows sparked from exposure to the Eurozone crisis in turn affects non-European issuers that rely on financing from money market funds. This reduces incentive for issuers to primarily receive financing from specific money market funds due to the risk that slow moving capital will force that issuer to rely on higher yielding options. This supports the conclusion that confidence in the capability of money market funds primarily drives how investors react to market conditions, and expands that conclusion to issuers as well (Chernecko, 16).

SEC Chairman Mary Schapiro spearheaded the debate for further money market reform. She also had support from Secretary of the Treasury Timothy Geithner and Federal Reserve Chairman Ben Bernanke. Schapiro's stance is largely supported by the same theme that has come to light with every analysis – investor confidence. She issued a statement in August 2012 after three commissioners had turned down a formal proposal to reform money funds, rendering the proposal inadmissible to the public. She continued to advocate for reform because that is effectively the duty of those institutions. She stresses that in 2008 stability was shattered in the money market, and that it was solely the government intervention that prevented the problem from being much worse. This put taxpayers in the crossfire of the economic crisis, effectively rendering them insurers of an investment product. She cites in this speech, "investors of money market funds have every incentive to run at the first sign of a problem" as a key structural issue with money market funds (Statement of SEC Chairman Mary L. Schapiro). She describes the reason for this being that money market redemptions follow a first come first serve basis, meaning that investors that pull their investments first will receive the $1.00 NAV even if the fund is worth a little less. This negatively affects the slower moving retail investors, losing value and potentially being subject to a suspension in redemptions. She also focused on the need for more of a cushion to prevent money market funds from inevitably breaking the buck if they experience a loss above a certain amount. She cites in 2008 when the Reserve Primary Fund was not grossly invested in Lehman, holding only 1% of it's assets in Lehman commercial paper, and still broke the buck.

She then introduces the two structural reforms aimed at fixing these issues and maintaining investor confidence in the safest investment vehicle. The first, and arguably most controversial, is introducing a floating NAV for money market funds rather than the historical stable one. The argument is while it does highlight the fact that money market funds are investment products that will experience gains and losses, it significantly reduces the incentive for runs. Money market funds would be better situated to absorb losses and eliminate the immediate loss resulting from a NAV under $1.00 per share (Statement of SEC Chairman Mary L. Schapiro).

The second proposed reform is a capital buffer that would prevent investors from pulling 100% of their assets at once from a money fund. It would instead require that investors only be able to redeem 97% of their assets and leave the remaining 3% on a 30-day hold during which fund managers could use the remaining capital to stabilize the fund. This rule is focused more on managing potential runs on funds while the first reform is meant to prevent them altogether. However, the proposal was not formal or up for public debate, therefore no action could be taken and the issue was tabled. Even so, further reform was inevitable even with opinions that it was unnecessary or potentially extremely costly.

b. *2014 Money Market Reform*

Finally, in 2014, the new reform was announced. This meant the biggest structural changes to money market funds in history, altering Rule 2a-7 drastically. The rules are not set to take effect until October 2016. The new rules vary based on the type of money market fund. No changes were imposed on U.S. Treasury or Government money market funds because given that they are only allowed to invest in government or treasury securities, they pose little systemic risk to investors. Government funds are newly defined as those that invest 99.5% of total assets in cash, government securities, or repurchase agreements collateralized by government securities. Therefore, these funds retain a stable NAV and are not subject to any new fees or rules. Refraining from reforming these funds indicates a "do not fix what is not broken" approach by the SEC (SEC Adopts Money Market Reform Rules).

Another important change made that does not reflect actual rule changes is the distinction between retail money market funds and institutional money market funds. A retail fund is newly defined as a money market mutual fund that has policies and procedures reasonably designed to limit beneficial owners to natural persons. Natural persons is defined as human beings that are not institutions or coroporations. This is meant to include funds were individual investors as human beings are the main owners, rather than institutional groups. The reason for making this distinction was because individual investors are less likely to make large redemptions in a time of economic stress. Institutional funds are then any fund that does not meet the criteria of being a retail fund, meaning the primary beneficiary of the fund is not an individual investor. This does not limit a person from being able to purchase institutional funds, but rather allows for more accurate rules depending on typical investor activity (SEC Adopts Money Market Reform Rules).

To that end, the change from stable to floating NAV only affects institutional prime and institutional municipal money market funds. Therefore these funds will no longer be permitted to use the amortized cost method or penny rounding method to report a NAV. Instead, they must mark securities to market per all other mutual funds. Securities held will be priced using four decimal places, known as basis point rounding. Therefore, if the price of a security changes by 1/100th of a penny, the shareholder will experience either a gain or a loss. One of the main concerns with this new rule was the accounting for it. It would be extremely costly to have to tax every gain or loss resulting from a change of a single basis point in a floating NAV. Therefore, the Treasury Department and IRS allowed for shareholders to report a single net gain or loss resulting from individual transactions throughout the year. The change to a floating NAV also implemented increased reporting duties. By July 2015 each fund reporting a floating NAV must disclose that NAV to four decimal places on its website along with daily and weekly liquid assets as a percentage of the total, and the fund's net flows from the previous day. This requires much more monitoring and reporting from a fund management perspective, imposing costs (SEC Adopts Money Market Reform Rules).

A change affecting retail and institutional funds, both municipal and prime is the introduction of liquidity fees and redemption gates. The rule allows the funds themselves to impose liquidity fees and/or redemption gates during periods of high redemptions as would have been the case in the summer of 2011. This will be based on the level of weekly liquid assets a fund holds, a percentage that was increased during 2010 reform. Recall that the SEC requires 10% of a money market fund's total assets are convertible to cash in one business day and 30% are convertible cash within five business days. If a fund falls below this, a liquidity fee of 2% is imposed to those shareholders who leave the fund when liquidity is scarce. There are costs associated with liquidating securities, and those costs are meant to be transferred to liquidating shareholders rather than be imposed on those who stay invested in the fund. The fee is subject to board determination, unless weekly liquid assets fall below 10%, in which case a 1% fee is required for both prime and municipal funds. Every decision is made in the best interest in the fund determined by the board, therefore fees could not be imposed altogether (SEC Adopts Money Market Reform Rules).

A redemption gate is a temporary halt on shareholder redemptions, effectively disallowing any redemptions from happening. If a fund's weekly liquid assets fall below 30%, a board may impose a redemption gate for no longer than 10 days. This gate would be lifted once weekly liquid assets return to 30%, or if board determination a gate is not in the best interest of the fund. The 10-day gate could be consecutive or spread over a 90-day period. Liquidity fees and redemptions are closely related, meaning a shareholder will either be charged a fee for redemptions or forbidden completely from such action in a time where liquidity is scarce (SEC Adopts Money Market Reform Rules).

Because these new rules jeopardize the safety of money market funds and put investors on the hook for a liquidity crisis, increased transparency is key. Investors need ready and up to date information regarding fees and redemption gates in order to make strategic investment decisions. Therefore, a money market fund will be required to disclose the daily and weekly liquid assets a percentage of total assets on its website every day. It is also crucial that a fund promptly report the existence or removal of a redemption gate as well as a detailed summary of a board's discussion regarding such gates (SEC Adopts Money Market Reform Rules).

V. AN ANALYSIS OF CHANGES IN THE MONEY MARKET

Comparing these rules to the original press release in 2012 regarding potential reform, there are certainly some similarities and differences. The vote for these reforms was not unanimous, but rather a 3-2 vote. One thing that is certain is money market funds are set up to perform much more similarly to other riskier investment vehicles than ever before. The floating NAV eliminates the most unique aspect of a money fund, and the most pressing question moving forward is what the affect of this will be. The redemption gates and liquidation fees are not particularly dramatic, especially because fund managers have been subject to stricter limits since 2010. However there was still criticism of such changes. Kara Stein, an SEC commissioner, believes that the redemption gates were the wrong tool for lessening investor flight risk. She points out that the threat of a gate will in fact encourage investors to rush to redeem their shares before a gate is imposed. She goes further to say that if a gate is imposed and investors are forced to redeem cash from other investment vehicles, the threat of a system wide redemption run looms (Taub).

Calls against the reform not only highlight the problems with new rules, but also if the new rules are appropriate. Another argument against the instated reform along with Kara Stein comes from SEC commissioner Michael Piwowar. They both agree that a problem that has yet to be addressed is financial institutions' reliance on short term funding through money market funds (Taub). This was undeniably one of the biggest problems in 2008 when Lehman went bankrupt. As problems were growing for Lehman, the need for cash was doing the same. Therefore, Lehman had to turn to short term financing to cover those cash needs, which is one of the main uses for money market funds for corporations. However, this increased money market funds exposure to the debt yielding company with less chance of the shares being issued having any value. The new reform does not include any revisions to prevent this. There were no changes to the ownership requirements of a fund, even though Lehman proved that even less than 5% ownership in a single institution can still do a significant amount of damage. The Primary Reserve Fund in fact only held 1.2% of assets in The Lehman Brothers, which still caused a write off of $785 billion and a broken buck.

This is one area where more attention should have been paid. The rules call for many changes to prevent investor redemption runs and a lack of liquidity. However, both a liquidity crisis and a run on funds were the effects of a financial crisis in 2008. The cause, however, has not been sufficiently addressed. Several band-aids have been put on the wound instead of stopping the source of the bleeding. The root cause of the problems in 2008 were that money market funds, primarily the Reserve Primary Fund, had too much exposure to Lehman debt and when that debt could not be paid back, the fund broke the buck due to a huge decline in asset value. Immediately following that, redemptions shot through the roof and the liquidity crisis was at its worst. The timeline itself points out the glaring holes in regulation that led to this downfall. And yet the reform does not address these holes. Due to the 5% ownership restriction pursuant Rule 2a-7, the Reserve Primary Fund held only 1.2% of its assets in Lehman commercial paper. This is not even close to the limit, but had a monumental effect because of the amount of short-term borrowing Lehman was doing. The ratings that govern the securities money funds are permitted to invest in clearly are not enough to guarantee the safety of the investment.

A more effective way to manage short term financing and protect money funds from investments that are not likely to be paid back despite a star rating would be to impose an additional limit on fund ownership. This would turn the attention on the financial institutions acting as issuers, and focus on their involvement in money market funds. If Lehman's exposure to money market funds had been examined closer, then the $200 billion it owed in overnight repurchase agreements a week before failure would have signified a warning bell to fund managers a lot earlier than it did (Taub). Therefore, money market funds should be restricted from investing in securities issued by financial institutions based on their short term financing debt. If that debt rises above a certain percentage, that would signify that the institution is relying too heavily on short term financing and may be subject to a cash shortage. A method such as this would switch the focus to the actual borrowers rather than the funds themselves or the investors, hoping to eliminate the cause of a run.

While there are many causes to an investment vehicle hitting trouble, money market funds uniquely rely heavily on investor confidence. It has been the silent but most important factor of money fund success. Since the inception of Rule 2a-7 through to the Great Moderation, investor confidence drove money market funds to peak success. Money market funds are inherently safe, which is what makes them so popular with all different types of investors. The popularity is driven by the virtual guarantee of redemption of shares. Without that, there would be no incentive to invest in money funds when a little more risk would provide much more reward. Therefore, confidence that investments are safe and that shares will be redeemed at the $1.00 NAV is what keeps investments high and long term. The difficult part about investor confidence is that it is more or less intangible. There is not a concrete way to measure it effectively when factoring it into the money market reform, even though it is the most important measure of performance. The only way to measure it is by redemptions. If redemptions are high, that signals low investor confidence. Therefore, the SEC attempts to implicate ways to boost investor confidence by imposing redemption gates. However, this again is trying to fix the effect and not the cause. Simply barring investor's ability to redeem their shares will not ease any doubts that arise about a fund. In fact it could very well increase investors fears that the fund will not perform. If a fund has recently imposed a redemption gate, a new investor would have no incentive to invest in that fund assuming it will happen again. Investor confidence is difficult to measure and manage, but the only practical way to do so is with increased transparency.

A floating NAV is essentially the SEC's attempt at full transparency with investors. While it does structurally change prime money market funds, it eliminates the guesswork in what the NAV should actually be and how close it is to falling below $1.00. It also forces a daily report of the NAV every day on the funds' websites as well as daily and weekly liquid assets. The goal of this change is to make prime money market funds, the riskiest, behave more similarly to other investment vehicles that report a floating NAV and eliminate the amortized cost method. This will work to combine the safety of a money market fund with the benefit of a different type of fund that allows for more risk. These funds still have liquidity fees and redemption gates to prevent too many investors from redeeming shares at a higher price, rather than a receiving a dividend for that NAV change.

The new reform is essentially an extension of the 2010 changes, continuing to discourage investors from redeeming their shares and keeping liquidity as high as possible. However, the fundamental cause of these issues was not addressed in the reform and continues to be an issue. There is no telling if another major financial institution may collapse and how money markets will fare at that point, but the reform failed to fully minimize the possibility of any damage. Instead, the effects of that potential damage in another economic crisis were minimized as much as possible. The money market is full of amazing opportunities for investors to maximize otherwise idle capital and fund short term positions, but it only functions properly if investors are confident.

VI. CONCLUSION

From this study, we can conclude that the government has displayed a pattern of emergency saves and quick fixes. They intervene when government assets are in jeopardy and the taxpayers are at risk for taking a loss. However, the rules set in place do not effectively reduce the risk of government intervention in the event of a market crisis. Economies are predestined to rise and fall with certain market shocks, putting investment vehicles to the test. The government can only do so much to protect taxpayers from being hit with losses during a financial crisis. In 2008, the government used several emergency-financing programs to cushion taxpayer's exposure to loss when MBS's started to lose value and the Primary Reserve Fund broke the buck. In other words, the government did everything possible to keep the effects of financial institution's mistakes from trickling down to the working class.

Immediately after the Lehman bankruptcy, the government implemented new programs to pour money into investment companies that were in desperate need of short-term cash. Then a hasty reform just two years later implemented more concrete changes to money market funds while still leaving a lot of holes to be patched up. The reform in 2014 served to eliminate the characteristic of a money market fund that makes it so unique, the stable NAV. While this could have an immediate adverse effect on the funds, the goal is to allow a fund to break the buck without causing any investor distress. The problem with this is it does not address the issues that cause a fund to break the buck. An investor would have more confidence in a fund's performance if the cause was addressed rather than knowing that the effect is not as grave. The reform also attempted to prevent investors from fleeing by making it a less attractive option at the sign of trouble. However, in 2008, even if redeeming shares was a less attractive option due to fees, it was still better than losing thousands in an underperforming fund.

The key in analyzing this reform is to imagine it was already in place during 2008. Would these new rules have prevented the downfall money market funds went through six years ago if these were in place? The answer as we can see from this study is no. The problem in 2008 was that money market funds had too much exposure to firms that rely heavily on short-term borrowing for daily cash needs. Since this is one of the key uses of money market funds, it needs to be much more regulated to ensure it does not become abused. The reform accepted in 2014 did not adequately address this, setting the government up for another emergency save during a future economic downfall.

VII. APPENDIX A

1983
- Rule 2a-7 enacted
- Primary characteristics of Money Market Funds established

1980's-2007
- The Great Moderation
- Price Stability and Low Volatility

2007
- Lehman Brothers shuts down BNC Mortgages

2008
- Lehman Brothers Bankruptcy
- Primary Reserve Fund falls to $0.97 per share
- Government created the ABCP Money Market Mutual Fund Liquidity Facility

2010
- Intial Money Market Reform implmented
- Liquidty and crdit quality requirements made stricter

2011
- Eurozone crisis tested new rules for money market funds

2012
- SEC announces potential further reform

2014
- SEC announces implementation of further reform
- Floating NAV, Liquidty & Redemption Gates

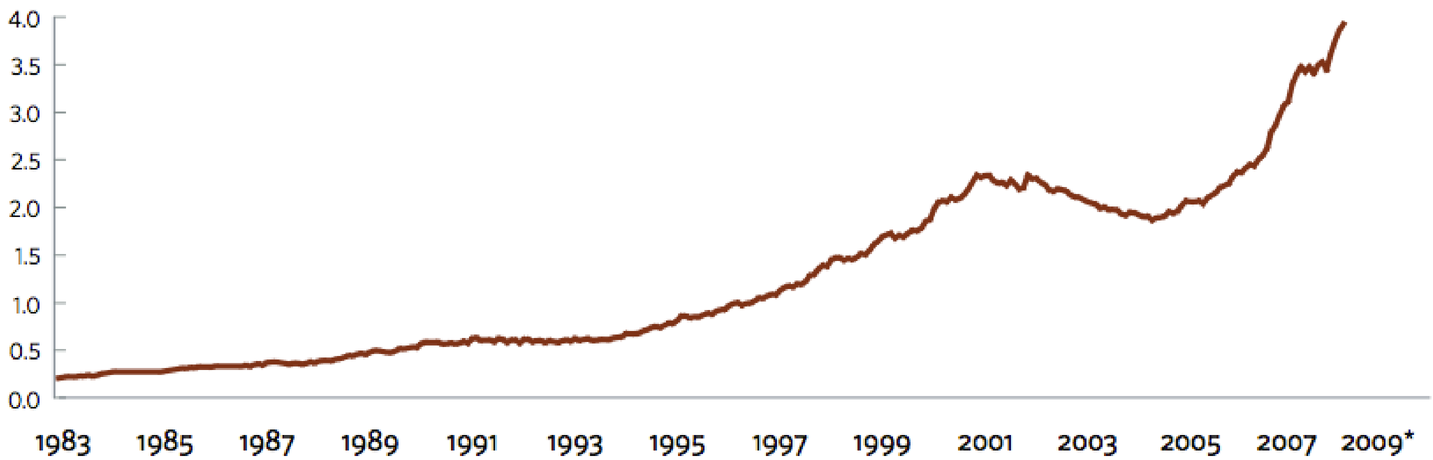
2016
- Money Market Funds must implement changes from 2014 reform

VIII. APPENDIX B

FIGURE 2.2

Total Net Assets of Money Market Funds

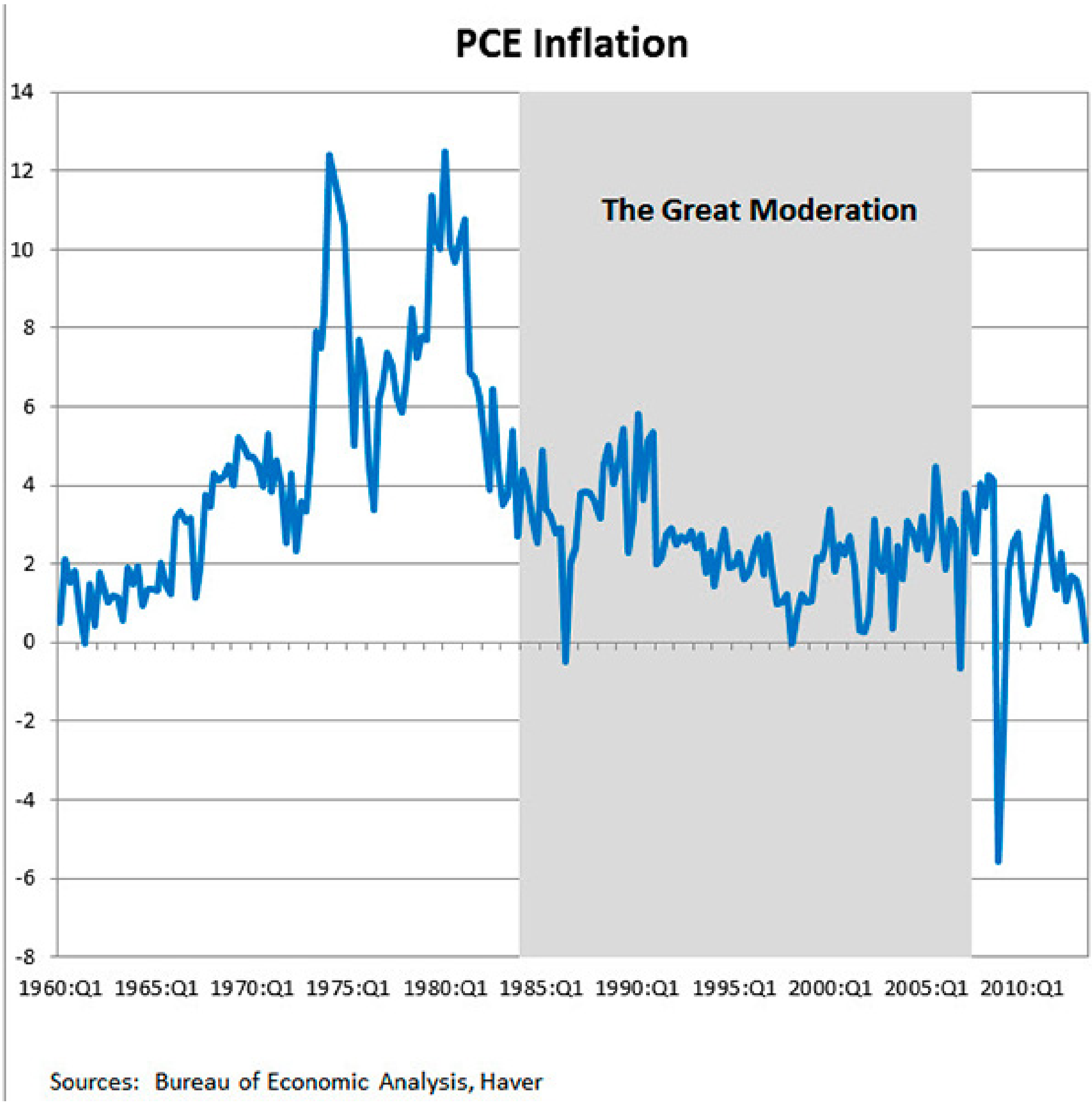
Trillions of dollars, monthly



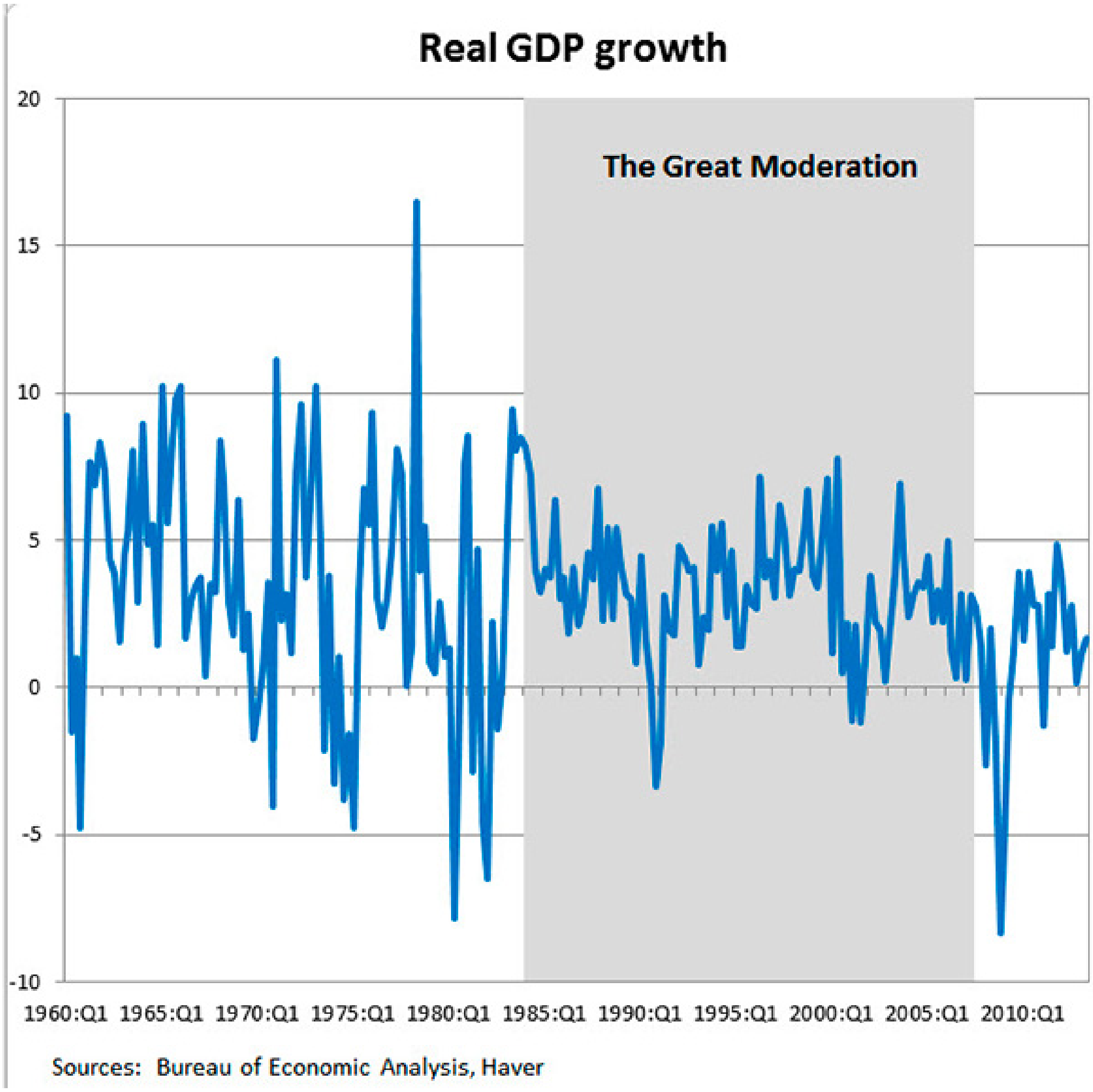
*Data are through January.

Source: Investment Company Institute

IX. APPENDIX C



X. APPENDIX D


Real GDP growth
The Great Moderation
20
15
10
5
0
-5
-10
1960:Q1
1965:Q1
1970:Q1
1975:Q1
1980:Q1
1985:Q1
1990:Q1
1995:Q1
2000:Q1
2005:Q1
2010:Q1
Sources: Bureau of Economic Analysis, Haver

XI. REFERENCES

Anand, Shefali, Diya Gullapalli, and Daisy Maxey. "Money Fund, Hurt by Debt Tied to Lehman, Breaks the Buck." *The Wall Street Journal*. N.p., 17 Sept. 2008. Web. 25 Nov. 2014. <http://www.wsj.com/articles/SB122160102128644897>.

"Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility." Board of Governors of the Federal Reserve System, n.d. Web. 25 Nov. 2014. <http://www.federalreserve.gov/monetarypolicy/abcpmmmf.htm>.

Blackwell, David W., Kenneth R. Troske, and Drew B. Winters. "Money Market Funds Since the 2010 Regulatory Reforms." Center for Capital Markets Competitiveness, 2012. Web. 30 Nov. 2014. <https://www.uschamber.com /sites/default/files/legacy/reports/FinalpaperwithCover_smalltosend.pdf>.

Chernenko, Sergey and Sunderam, Adi, Frictions in Shadow Banking: Evidence from the Lending Behavior of Money Market Funds. Fisher College of Business Working Paper No. 2012-4. September 10, 2012. http://dx.doi.org/10.2139/ ssrn.1991171.

"The Collapse of Lehman Brothers." *The Telegraph*. Telegraph Media Group, n.d. Web. 26 Nov. 2014. <http://www.telegraph.co.uk/finance/financialcrisis /6173145/The-collapse-of-Lehman-Brothers.html>.

Collins, Sean, Emily Gallagher, Jane Heinrichs, and L. Christopher Plantier. 2012. "Money Market Mutual Funds, Risk, and Financial Stability in the Wake of 2010 Reforms." *ICI Research Perspective.* 19, no. 1 (January). www.ici.org/pdf/per19-01.pdf.

Condon, Christopher. "Reserve Primary Money Fund Falls Below $1 a Share." Bloomberg, 16 Sept. 2008. Web. 25 Nov. 2014. <http://www.bloomberg.com /apps/news?pid=newsarchive&sid=a5O2y1go1GRU>.

Cook, Timothy Q., and Jeremy G. Duffield. "Money Market Mutual Funds And Other Short-Term Investment Pools." *Federal Reserve Bank of Virginia.* 1993. Web. 5 Oct. 2014.<https://www.richmondfed.org/publications/research/special_ reports/instruments_of_the_money_market/pdf/chapter_12.pdf>.

Hakkio, Craig S. "The Great Moderation." *Federal Reserve History*. N.p., 22 Nov. 2013. Web. 10 Oct. 2014. <http://www.federalreservehistory.org/Events/Detail View/65>.

Hilensrath, Jon, and Mary Pilon. "Unease Rises Over Funds." *WSJ*. N.p., 22 June 2011. Web. 5 Oct. 2014. <http://www.wsj.com/articles/SB100014240527023048 87904576400080804439222>.

"Historical Inflation Rates: 1914-2014." *US Inflation Calculator*. N.p., n.d. Web. 10 Oct. 2014. <http://www.usinflationcalculator.com/inflation/historical-inflation-rates/>.

"ICI Analysis of SEC's 2010 Money Market Fund Reforms: Tested, Working, and Have Enhanced Financial Stability." *Investment Company Institute*. N.p., 15 Jan. 2013. Web. 30 Nov. 2014. <http://www.ici.org/mmfs/sec_reforms /news/13_2010_mmf_reforms_study>.

Keoun, Bradley, and Craig Torres. "Foreign Banks Tapped Fed's Secret Lifeline Most at Crisis Peak." Bloomberg, 1 Apr. 2011. Web. 26 Nov. 2014. <http://www. bloomberg.com/news/2011-04-01/foreign-banks-tapped-fed-s-lifeline-most-as-bernanke-kept-borrowers-secret.html>.

"Lehman to Shut BNC Mortgage Unit, Take $25 Million Charge." *CNBC*. N.p., 22 Aug. 2007. Web. 26 Nov. 2014. <http://www.cnbc.com/id/20394737#.>.

"Money Market Fund." *SEC.gov*. N.p., n.d. Web. 5 Oct. 2014. <http://www.sec.gov/answers/mfmmkt.htm>.

"MONEY MARKET FUNDS IN 2012." Investment Company Institute, 14 Feb. 2012. Web. 15 Nov. 2014. <http://www.ici.org/pdf/12_mmf_2008.pdf>.

"National Economic Accounts." *Beareau of Economic Analysis*. U.S. Department of Commerce, n.d. Web. 10 Oct. 2014. <http://www.bea.gov/national/Index .htm>.

"Net Asset Value." *SEC.gov*. N.p., n.d. Web. 5 Oct. 2014. <http://www.sec.gov/answers/nav.htm>.

Onaran, Yalman. "Lehman Brothers Shuts Down Subprime Unit, Fires 1,200." Bloomberg, 22 Aug. 2007. Web. 26 Nov. 2014. <http://www.bloomberg.com /apps/news?pid=newsarchive&sid=a87FPr78qX9w&refer=news>.

"The Origins of the Financial Crisis." *The Economist*. The Economist Newspaper, 07 Sept. 2013. Web. 5 Oct. 2014. <http://www.economist.com/news /schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article>.

Poole, William, and David C. Wheelock. "Stable Prices, Stable Economy: Keeping Inflation in Check Must Be No. 1 Goal of Monetary Policymakers." *Federal Reserve Bank of St. Louis*. N.p., Jan. 2008. Web. 10 Oct. 2014. <https:// www.stlouisfed.org/publications/re/articles/?id=2>.

Quinn, James. "Lehman Brothers Files for Bankruptcy as Credit Crisis Bites." *The Telegraph*. Telegraph Media Group, 15 Sept. 2008. Web. 26 Nov. 2014. <http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/4676621/Lehman-Brothers-files-for-bankruptcy-as-credit-crisis-bites.html>.

"Report of The Money Market Working Group." *Investment Company Institute.* 17 March 2009. Web. 5 Oct. 2014. http://www.ici.org/pdf/ppr_09_mmwg.pdf

Schapiro, Mary L. "Testimony on "Perspectives on Money Market Mutual Fund Reforms"" *SEC.gov*. Securities and Exchange Commission, 21 June 2012. Web. 17 Dec. 2014. <http://www.sec.gov/News/Testimony/Detail/Testimony/1365171489510#.VJHzb4fHIfk>.

Securities and Exchange Commission. CFR 270 Rule 2a-7. Investment Company Act of 1940. http://www.law.cornell.edu/cfr/text/17/270.2a-7.

"SEC Adopts Money Market Fund Reform Rules." *SEC.gov*. Securities and Exchange Commission, 23 July 2014. Web. 30 Nov. 2014. <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370542347679#.VI2-qIfHIfk>.

"SEC Approves Money Market Fund Reforms to Better Protect Investors." *Press Release*. Securities and Exchange Commission, 27 Jan. 2010. Web. 17 Dec. 2014. <http://www.sec.gov/news/press/2010/2010-14.htm>.

Sorkin, Andrew Ross. "Lehman Files for Bankruptcy; Merrill Is Sold." *The New York Times*. The New York Times, 14 Sept. 2008. Web. 6 Nov. 2014. <http://www.nytimes.com/2008/09/15/business/15lehman.html?pagewanted=all&_r=1&>.

"Statement of SEC Chairman Mary L. Schapiro on Money Market Fund Reform." *SEC.gov*. Securities and Exchange Commission, 22 Aug. 2012. Web. 30 Nov. 2014. <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1365171484078#.VI2-XofHIfk>.

Swagel, Phillip. "Why Lehman Wasn't Rescued." *Economix*. The New York Times, 13 Sept. 2013. Web. 17 Dec. 2014. <http://economix.blogs.nytimes.com/2013/09/13/why-lehman-wasnt-rescued/?_r=0>.

Taub, Jennifer. "Post-Lehman, Money Market Fund Protections Still Weak." *The New York Times*. N.p., 17 Sept. 2014. Web. 30 Nov. 2014. <http://dealbook.nytimes.com/2014/09/17/post-lehman-money-market-fund-protections-still-weak/>.