

# Charting the Course: A Systematic Exploration of Influences Shaping Money Market Fund Growth<sup>1</sup>

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*During times of market turmoil and volatility, investors – particularly institutional investors – tend to shift their investments to money market funds (MMFs) investing in U.S. government securities, as they consider government MMFs to be a low-risk investment. As a result, growth of the MMF industry from \$2.2 trillion to \$6.2 trillion over the last two decades has been driven by inflows into government MMFs. In contrast, since the peak of the 2008 financial crisis, prime and tax-exempt money market funds combined have declined in dollars by 30% in part due to both crises and regulatory reforms.*

*This report explores the influences that have shaped growth in MMFs using data from multiple sources, including the Commission’s Form N-MFP. The report analyzes a spectrum of factors, including past crises, regulatory reforms, Federal Reserve policies, advances from the Federal Home Loan Banks (FHLBs), and the effects of similar investments that investors may consider to be substitutes to MMFs. This report analyzes the intricate interplay between these influences and their respective impacts on historical MMF growth dynamics. Notably, the empirical findings reveal the predominant influence of the federal funds rate in driving long-term growth. In addition, during the 2023 banking crisis around 40% of the withdrawn deposits were effectively returned to banks. This is because the withdrawn deposits were deposited into MMFs which, in turn, purchased additional FHLB securities and thereby facilitated additional FHLB lending to banks. By offering comprehensive insights into these dynamics, this report provides a valuable resource for stakeholders seeking to navigate the intricacies of the MMF landscape.*

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## I. Introduction

A MMF is a type of mutual fund registered under the Investment Company Act of 1940,<sup>3</sup> that is subject to regulatory requirements that limit the risk in a MMF's portfolio by governing the maturity, diversification, and liquidity of the fund's investments.<sup>4</sup> Both retail investors, who invest their own dollars, and institutional investors, who deploy external capital, participate in MMFs. MMFs are a cash management tool for both retail and institutional investors as MMFs aim to provide a high degree of daily liquidity and a low-price volatility, appealing to investors who are risk-averse, prioritize capital preservation over potentially higher returns, and have a short time horizon. In addition, MMFs play a vital role in providing short-term financing for businesses, banks, and government entities.

There are three main types of MMFs: i) government MMFs, which include Treasury MMFs that hold mainly Treasury debt and repos, and government agency MMFs that hold mainly government agency debt and repos from issuers like Federal Home Loan Banks, Freddie Mac, and Fannie Mae; ii) prime MMFs, which mainly hold repos, Treasury debt, government agency debt, commercial paper (CP) and certificates of deposit (CDs); and iii) tax-exempt MMFs, which primarily hold municipal debt. As of December 31, 2023, the percentage of MMF's total net assets was 77% in government MMFs, 21% in prime MMFs, and 2% in tax-exempt MMFs.<sup>5</sup>

The MMF industry has grown from \$2.2 trillion to \$6.4 trillion, nearly tripling in size, over the last two decades. By connecting past events with influences shaping MMF growth, this report underscores the intricate interplay between economical and regulatory processes and MMF dynamics, offering a lens through which to view both the MMF industry's past and future growth. The descriptive statistics and accompanying analyses on MMF growth, using data from multiple sources, including the Commission's Form N-MFP,<sup>6</sup> serve as a resource for individuals who are interested in understanding the complexities inherent in the MMF industry.

The influences of this growth can be grouped into three main categories. The first category covers the role MMF alternatives have played in the growth in MMFs overtime. Several alternatives are available for MMFs, but bank deposits stand out as the closest substitute. Risk and differences between bank rates and MMF net yields play an essential role in understanding shifts in investor preferences between bank deposits and MMFs. Moreover, businesses may rely on multiple services offered by the bank, making it difficult to switch to MMFs. Investors,

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<sup>3</sup> The report only focuses on domestic MMFs.

<sup>4</sup> See, e.g., 17 CFR § 270.2a-7, available at <https://www.ecfr.gov/current/title-17/chapter-II/part-270/section-270.2a-7>.

<sup>5</sup> See Money Market Statistics, SEC (2024), available at <https://www.sec.gov/divisions/investment/mmf-statistics>.

<sup>6</sup> Unless stated otherwise, this report uses public data reported on Form N-MFP since November 2010, which MMFs use to report information to the Commission each month about their portfolio holdings, under the Investment Company Act of 1940. Before November 2010, IMoneyNet data is used.

however, did not appear to consider private liquidity funds as a close substitute even though they are structurally like MMFs.<sup>7</sup>

The second category of influences addresses the causes of investor migration to government MMFs from past crises and regulatory reforms. Past crises include the 2008 financial crisis, the 2011 Euro debt crisis, recurring debt ceiling impasses, the 2020 Covid-19 pandemic, and the 2023 bank crisis.

In times of crises, different types of MMFs have behaved differently. For example, investors in institutional MMFs monitor economic developments more closely than investors in retail MMFs making institutional MMFs more prone to run risk in times of market stress.<sup>8</sup> Prime MMFs tend to invest in riskier securities that may suffer losses in crises. For instance, prime MMFs held Lehman Brothers debt when it defaulted in 2008 and had exposure to Eurozone banks in 2011.<sup>9</sup> Moreover, during both the global financial crisis of 2008 and the market dislocation of 2020, prime MMFs held CP whose markets froze up, preventing them from selling assets to meet redemptions.<sup>10</sup> Tax-exempt MMFs have also experienced redemption pressures in times of market stress. Since the peak of the global financial crisis of 2008, prime and tax-exempt MMFs combined have declined in size by 30% from both crises and regulatory reforms designed to limit risk from past market failures.<sup>11</sup>

Government MMFs, in contrast, tend to have counter-cyclical flows. These MMFs offer investments with high credit quality and liquidity, as well as an explicit guarantee by the U.S. federal government for certain government securities (e.g., Treasuries) and a perceived implicit guarantee for others (e.g., Federal Home Loan Bank securities).<sup>12</sup> As a result, during times of market turmoil and volatility, investors – particularly institutional investors – tend to shift their investments to MMFs investing in U.S. government securities, as they consider government MMFs to be a low-risk investment. As shown in Figure 1, government MMFs experienced inflows during the global financial crisis of 2008, Euro debt crisis of 2011, Covid-19 pandemic

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<sup>7</sup> A private liquidity fund is a type of private fund available to sophisticated investors. They are similar to MMFs, but do not register under the Investment Company Act of 1940 and are not required to follow the same MMF risk limits.

<sup>8</sup> See, e.g., R. Wermers, *Run on Money Market Mutual Funds* (Mar. 15, 2012), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2024282](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2024282) (retrieved from SSRN Elsevier database).

<sup>9</sup> See, e.g., *Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher*, Division of Risk, Strategy, and Financial Innovation, SEC (Nov. 30, 2012), available at <https://www.sec.gov/news/studies/2012/money-market-funds-memo-2012.pdf>.

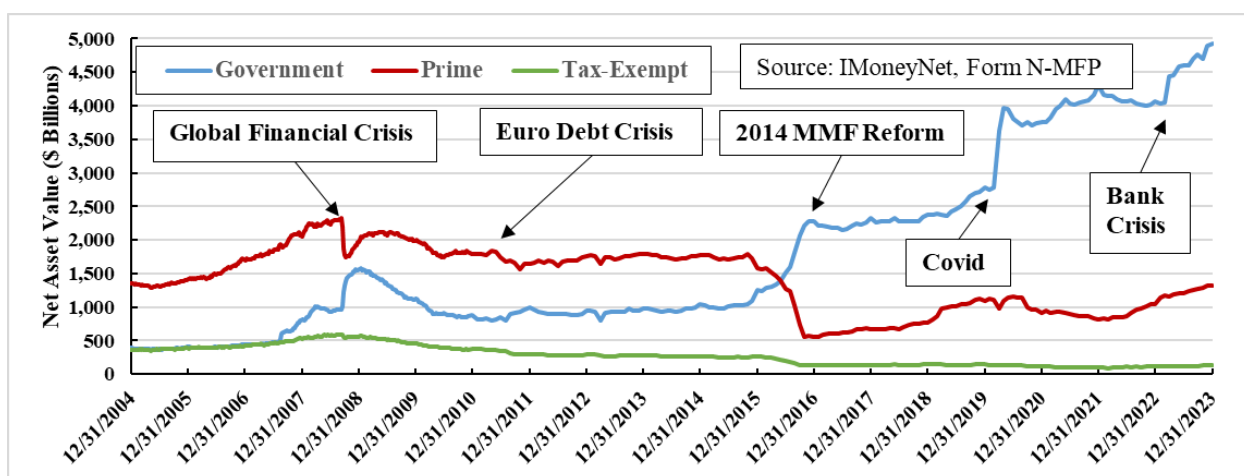
<sup>10</sup> See, e.g., OVERVIEW OF RECENT EVENTS AND POTENTIAL REFORM OPTIONS FOR MONEY MARKET FUNDS, REPORT OF THE PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS (Dec. 2020), available at <https://home.treasury.gov/system/files/136/PWG-MMF-report-final-Dec-2020.pdf>.

<sup>11</sup> See, e.g., A. Bouveret, A. Martin & P. McCabe, *Money Market Fund Vulnerabilities: A Global Perspective*, Board of Governors of the Federal Reserve System, Fin. and Econ. Discussion Series, No. 2022-012, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4077452](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4077452) (retrieved from SSRN Elsevier database).

<sup>12</sup> Government MMFs also invest in repos backed by government securities.

of 2020, and the banking crisis of 2023. Following these crises and updated regulatory reforms in 2014, government MMFs grew from \$408 billion and 20% of the industry to \$4,920 billion and 77% of the industry in two decades. As growth of the MMF industry is closely tied to that of government MMFs, this report focuses on analyzing these MMFs.

Although government MMFs are perceived to be safe, and rightfully so, they are not without risk. In fact, the first MMF to “break the buck”<sup>13</sup> was the Community Bankers US Government Fund in 1994.<sup>14</sup> Government MMFs are also vulnerable to a possible U.S. default, a scenario that may materialize if Congress fails to resolve recurring debt ceiling impasses. Despite experiencing short-term outflows in 2011 and 2013 such impasses did not adversely affect the long-term growth of government MMFs.



**Figure 1: Growth and reduction of different MMF types over the last two decades around crises and regulatory reform.**

The third category of influences covers certain financial tools that affect economic conditions and financial markets. The Federal Reserve policies (e.g., federal funds rate and the overnight reverse repo program) and advances from the Federal Home Loan Banks (FHLBs) influence various aspects of the financial markets, including lending rates, liquidity management, and overall financial stability. In turn, these impact MMF growth.

<sup>13</sup> Shadow price is the mark-to-market based price of the fund’s portfolio, which shadows the stable \$1.00 NAV price, calculated using the amortized cost method. If the fund’s shadow price rises above \$1.0050 or below \$0.9950, then the fund must reprice the stable \$1.00 NAV price to the shadow price. The reprice is known as breaking the buck. If investors withdraw shares when the shadow price is less than \$1.00, the fund’s shadow price will drop lower since portfolio losses are spread across a smaller asset base.

<sup>14</sup> See, e.g., Leslie Eaton, *New Caution About Money Market Funds*, N.Y. TIMES (Sept. 29, 1994) (retrieved via Factiva database).

The size of the MMF industry is responsive to adjustments made by the Federal Reserve in its policy to change the federal funds rate.<sup>15</sup> Historically, the federal funds rate has had the biggest impact on the growth of MMFs. MMF net yields tend to rise and fall according to changes in the federal funds rate. For example, a high federal funds rate and an inverted yield curve, like we had in 2023, are conducive to MMF growth and make MMFs an attractive investment for investors.

FHLBs are a government-sponsored enterprise, and one of their functions is to provide secured loans, known as advances, to their member banks for liquidity. To fund these long-term advances, FHLBs issue short-term debt obligations that investors (e.g., MMFs) purchase. During the 2023 banking crisis, bank depositors shifted most of their withdrawn deposits to MMFs.<sup>16</sup> These MMFs then invested those dollars in FHLB securities, thereby providing the FHLBs with additional dollars to lend to banks. As a result, around 40% of the withdrawn deposits were returned to banks as advances from the FHLBs by way of MMFs.

The rest of the report goes on to describe the three main categories of influences to MMF growth in more detail and is organized as follows. Section II describes the interplay between MMFs and MMF alternatives. Section III evaluates the effect of previous crises and past rulemakings on MMF growth. Section IV illustrates how certain financial tools (e.g., the Federal Reserve's policies and advances from the Federal Home Loan Banks) influence the growth potential of MMFs. Section V concludes with an outlook.

## **II. Money Market Fund Alternatives**

A range of factors, including the availability and attractiveness of alternative investment options, has influenced the growth of MMFs. This section describes these alternatives and the impact the most important two have had on the growth of MMFs. There are several substitutes for MMF investments, including bank deposits, offshore MMFs, ultra-short bond funds, private liquidity funds, stablecoins,<sup>17</sup> short-term investment funds (STIFs), and local government investment pools (LGIPs). Each offers a different combination of risk, yield, regulatory disclosure, and investor protection compared to MMFs. However, regulation and minimum investment size, for example, restrict many of these options, like offshore MMFs, STIFs, and LGIPs to certain investors, limiting their impact on MMF growth. Marketed as a substitute for MMFs, ultra-short bond funds differ from MMFs in their structure, are subject to different regulations, and often carry more credit risk, making them less suited as a cash management tool than MMFs. While stablecoins are in their early stages and lack market size and transparency, certain stablecoins

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<sup>15</sup> MMFs yields are highly correlated with short-term interest rates, meaning they reflect changes in the federal funds rate.

<sup>16</sup> Withdrawn deposit denotes dollars that have been withdrawn from the banking industry, excluding transfers between different banks.

<sup>17</sup> Stablecoins are cryptocurrencies designed not to earn an income or yield like MMFs do, but to maintain a stable value by being pegged to a reserve asset (e.g., the U.S. dollar).

exhibited parallels with MMFs during the 2023 banking crisis.<sup>18</sup> Some argue that stablecoins, despite their current limitations, function much like MMFs, hinting at their potential role as a MMF alternative.<sup>19</sup> Nevertheless, the two alternatives that have the greatest potential to impact MMF fund growth are bank deposits and private liquidity funds, which we discuss in more detail below. Of these two, investors utilize bank deposits as the closest substitute for MMFs even though private liquidity funds are structurally like MMFs.<sup>20</sup>

### a) Bank Deposits

In the 1970s, MMFs were a financial innovation that grew out of regulatory caps placed on the rates that could be paid on bank deposits.<sup>21</sup> With higher rates, similar services (e.g., check writing and intermediation between investors and financial markets) and fewer regulatory constraints, the aim of MMFs was to compete as a direct substitute to bank deposits. Five decades later, total bank deposits currently equal \$17.4 trillion (Figure 2), about three times the size of the \$6.4 trillion MMF space.

Bank deposits have been steadily growing for decades. However, after March 2020, there was a large jump in bank deposits, resulting in part from the three economic impact payments issued by the IRS and curtailed spending during the pandemic.<sup>22</sup> Total bank deposits reached their peak in April 2022, reaching \$18.2 trillion, followed by a modest decline since. The downward trajectory can be attributed to a run from uninsured depositors during the 2023 banking crisis.<sup>23</sup>

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<sup>18</sup> See, e.g., N. Oefele, D. Baur & L. Smales, *Flight to Quality - Money Market Mutual Funds and Stablecoins During the March 2023 Banking Crisis*, 234 *Economics Letters* (Jan. 2024), available at <https://ssrn.com/abstract=4451893> (retrieved from SSRN Elsevier database).

<sup>19</sup> See, e.g., K. Anadu, P. Azar, M. Cipriani, T. Eisenbach, C. Huang, M. Landoni, A. Malfroy-Camine & J. Wang, *Are Stablecoins the New Money Market Funds?*, Federal Reserve Bank of New York, Staff Reports #1073 (Sept. 2023), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4580392](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4580392) (retrieved from SSRN Elsevier database); N. Oefele, D. Baur & L. Smales, *Are Stablecoins the Money Market Mutual Funds of the Future?* (Nov. 14, 2023), available at <https://ssrn.com/abstract=4550177> (retrieved from SSRN Elsevier database).

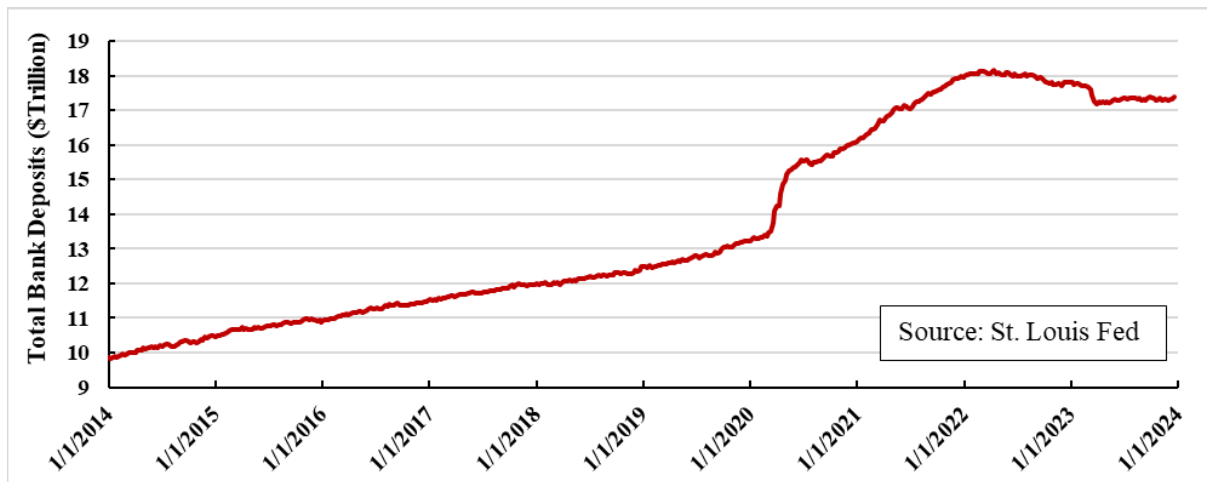
<sup>20</sup> See, e.g., R. Macey, *Reducing Systemic Risk: The Role of Money Market Mutual Funds as Substitutes for Federally Insured Bank Deposits*, Yale Law & Economics Research Paper No. 422 (Jan. 4, 2011), available at SSRN: <https://ssrn.com/abstract=1735008> (retrieved from SSRN Elsevier database).

<sup>21</sup> Bank deposits are unsecured liabilities on a bank's balance sheet and the foundation of bank funding.

<sup>22</sup> See, e.g., Andrew Castro et al., *Understanding Bank Deposit Growth During the COVID-19 Pandemic*, FEDS Notes, BD. OF GOVERNORS OF THE FED. RSRV. SYS., available at <https://www.federalreserve.gov/econres/notes/feds-notes/understanding-bank-deposit-growth-during-the-covid-19-pandemic-20220603.html> (last updated June 3, 2022).

<sup>23</sup> See, e.g., Fed. Deposit Ins. Corp., 17 FDIC Q., no. 2, 2023, at page 5, available at <https://www.fdic.gov/analysis/quarterly-banking-profile/qbp/2023mar/qbp.pdf#page=1>; Chang, Briana and Cheng, Ing-Haw and Hong, Harrison G., *The Fundamental Role of Uninsured Depositors in the Regional Banking Crisis* (July 19, 2024), available at SSRN: <https://ssrn.com/abstract=4497863> (retrieved from SSRN Elsevier database).





**Figure 2: Total bank deposits over the last decade.<sup>24</sup>**

Due to their large and presumed sticky depositor base, banks were hesitant at first to raise their rates, even as the federal funds rate and MMF net yields surged in 2022.<sup>25</sup> However, during the 2023 banking crisis, this trend shifted as some banks began increasing their rates (Figure 3), though still not as much as MMF net yields. The increase in rates has eroded banks' profit margins, as they already struggle to make profits in the current environment where rising interest rates have led to the loss in value of bank's securities and loans.<sup>26</sup> Indeed, it has been reported that banks ended 2022 with \$620 billion in unrealized losses on their books due to rising interest rates.<sup>27</sup> Banks are paying more to their depositors than they are receiving from their long-term bond holdings, which they purchased when rates were much lower.<sup>28</sup> Furthermore, while sticky deposits may delay immediate reactions to changes in bank profitability, they do not necessarily insulate banks from long-term consequences of financial deterioration. Overtime, depositors, especially uninsured depositors, may be willing to switch to an alternative banking option (e.g., MMFs) that may offer better services, returns, or stability.<sup>29</sup> Nevertheless, despite these persistent problems and recent depositor outflows, bank deposits remain high following the significant increase that began in 2020.

<sup>24</sup> Bd. of Governors of the Fed. Rsrv. Sys. (US), Deposits, All Commercial Banks [DPSACBW027SBOG], retrieved on Dec. 27, 2023, from FRED, Fed. Rsrv. Bank of St. Louis (Dec. 27, 2023), available at <https://fred.stlouisfed.org/series/DPSACBW027SBOG>.

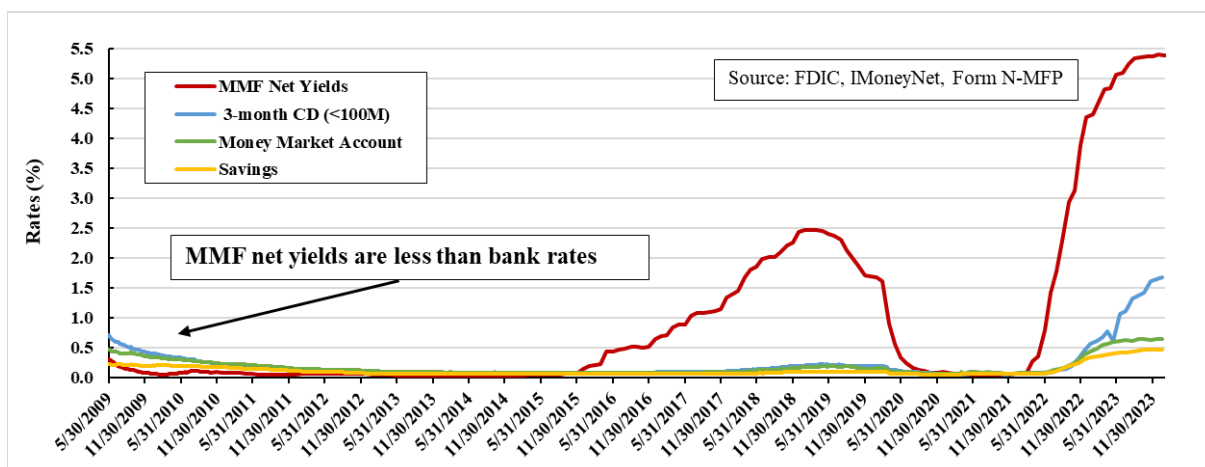
<sup>25</sup> See, e.g., Hugh Son, *Despite the Fed's Big Rate Boost, Most Banks Will Still Pay Paltry Interest Rates*, CNBC FINANCE (May 5, 2022, 10:07 AM EDT), available at <https://www.cnbc.com/2022/05/05/despite-the-feds-big-rate-hike-most-banks-wont-pay-much-in-interest.html>.

<sup>26</sup> See, e.g., P. Ozili, *Causes and Consequences of the 2023 Banking Crisis*, Central Bank of Nigeria (May 1, 2023), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4407221](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4407221) (retrieved from SSRN Elsevier database).

<sup>27</sup> See N. Buhayar, J. Surane, A. Tartar, R. Wahid, D. Halford & H. Warren, *US Banks Have \$620 Billion of Unrealized Losses on Their Books* (Mar. 31, 2023), available at <https://www.bloomberg.com/graphics/2023-svb-exposed-risks-banks/?srnd=premium#xj4y7vzkg>.

<sup>28</sup> *Id.*

<sup>29</sup> See E. Jiang, G. Matvos, T. Piskorski & A. Seru, *Monetary Tightening and U.S. Bank Fragility in 2023: Mark-to-Market Losses and Uninsured Depositor Runs?* (Mar. 13, 2023), available at <https://ssrn.com/abstract=4387676> (retrieved from SSRN Elsevier database).



**Figure 3: Weighted average MMF net yields compared to average bank rates for retail 3-month CDs, money market accounts, and savings accounts.<sup>30</sup>**

Risk and differences between bank rates and MMF net yields play an essential role in understanding shifts in investor preferences between bank deposits and MMFs. MMFs mitigate counterparty risk by diversifying their portfolio. In contrast, bank depositors face risk related to creditworthiness of the bank. Banks are also subjects to runs, which occur when a high fraction of depositors try to withdraw their funds at the same time, for example, as a result of concerns about a bank’s stability,<sup>31</sup> as was the case during the 2023 banking crises. For instance, Silicon Valley Bank, which had 93.9% of its domestic deposits uninsured, defaulted after the bank ran out of cash when uninsured depositors withdrew their deposits.<sup>32</sup>

Although the FDIC insures deposits up to \$250,000, some depositors with insured deposits nonetheless worry about accessing their cash in the event of a bank run. For instance, a Yahoo News/YouGov survey shortly after the Silicon Valley Bank collapse suggested that 12% of Americans withdrew deposits because of the collapse and another 18% considered doing so.<sup>33</sup> Meanwhile, a Gallup poll found that 48% of Americans were worried about the safety of their bank deposits.<sup>34</sup> This suggests that preventing bank runs involves more than just FDIC

<sup>30</sup> *National Rates and Rate Caps*, FDIC, available at <https://www.fdic.gov/resources/bankers/national-rates/previous-rates.html> (last updated June 17, 2024).

<sup>31</sup> See, e.g., Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance and Liquidity*, 91 J. POL. ECON. 401 (1983).

<sup>32</sup> See David Hayes, *SVB, Signature Racked Up Some High Rates of Uninsured Deposits*, S&P GLOB. MKT. INTEL. (Mar. 14, 2023), available at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/svb-signature--up-some-high-rates-of-uninsured-deposits-74747639>.

<sup>33</sup> See A. Romano, *Poll: No Sign of Populist Backlash Against Biden After Silicon Valley Bank Collapse*, YAHOO!NEWS (Mar. 21, 2023), available at <https://news.yahoo.com/poll-no-sign-of-populist-backlash-against-biden-after-silicon-valley-bank-collapse-212115783.html>.

<sup>34</sup> See M. Brennan, *About Half in U.S. Worry About Their Money’s Safety in Banks*, GALLUP (May 4, 2023), available at <https://news.gallup.com/poll/505439/half-worry-money-safety-banks.aspx>.



insurance; factors such as depositor-bank relationships and networks may also play a crucial role.<sup>35</sup>

Another key difference between MMFs and bank deposits is that MMFs' net yields closely track changes in the federal funds rate, while banking rates are determined by the banks' funding needs, balance sheet, and demand for bank deposits. When bank rates for savings deposits, money market accounts, and retail 3-month CDs exceed MMF net yields, investors are incentivized to shift their investments from MMFs into banks. A situation where MMF net yields were noticeable lower than bank rates last occurred during and after the 2008 global financial crisis, as shown in Figure 3. Conversely, the widening spread between MMF net yields and bank rates that followed the Federal Reserve's tightening of monetary policy – which raised the federal funds rate – in 2015 and 2022 and depicted in Figure 3 has not driven a significant number of depositors away from banks as Figure 2 illustrates.

The bundling of services with bank deposits is another factor that may incentivize some businesses to prefer bank accounts over MMFs. Specifically, even businesses that hold bank deposits exceeding the insured limit may use these funds for cash management purposes, such as paying vendors and salaries. These businesses may rely on multiple services offered by the bank, making it difficult to switch to MMFs. For example, Silicon Valley Bank required some businesses that used its services to keep all their deposits with the bank.<sup>36</sup> A more detailed impact of the solvency of Silicon Valley Bank and the 2023 banking crisis on MMFs is given below in Section III.e. In addition, according to the 2024 AFP Liquidity Survey, 89% of respondents stated that the overall relationship with their bank was a significant determinant for bank selection when investing in bank deposits.<sup>37</sup>

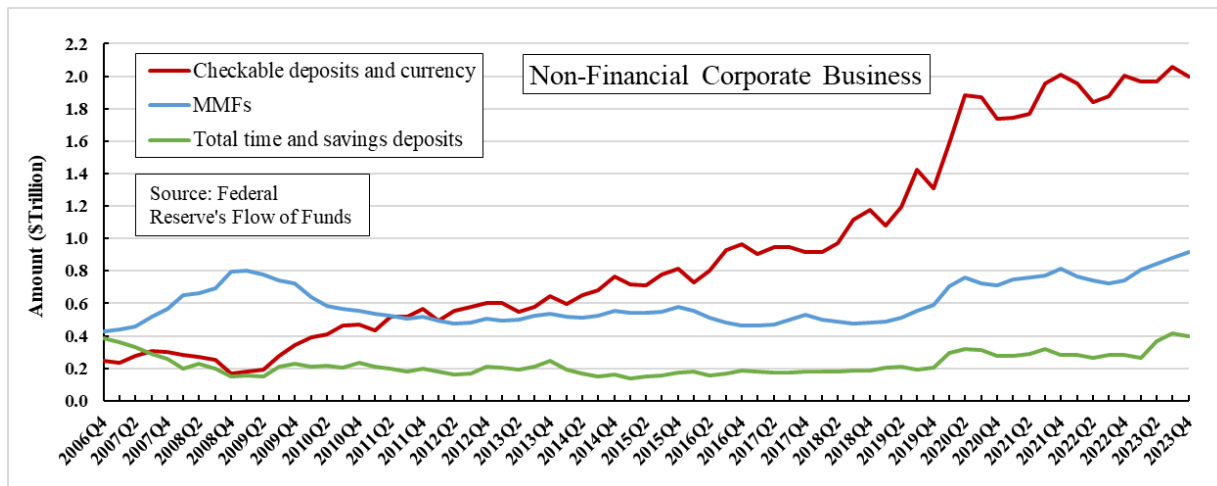
Figure 4 shows a rotation out of MMFs when bank rates were higher in 2009 and a growing preference for checkable deposits and currency over MMFs for non-financial corporate businesses since 2011.

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<sup>35</sup> See, e.g., Rajkamal Iyer & Manju Puri, *Understanding Bank Runs: The Importance of Depositor-Bank Relationships and Networks* (Fed. Deposit Ins. Corp., Ctr. for Fin. Rsch., Working Paper No. 2008-11, 2008), available at <https://www.fdic.gov/analysis/cfr/working-papers/2008/2008-11.pdf>.

<sup>36</sup> See, e.g., Rohan Goswami, *Silicon Valley Bank Signed Exclusive Banking Deals With Some Clients, Leaving Them Unable To Diversify*, CNBC (Mar. 13, 2023, 8:22 AM EDT), available at <https://www.cnbc.com/2023/03/12/silicon-valley-bank-signed-exclusive-banking-deals-with-some-clients.html>.

<sup>37</sup> Assoc. Fin. Professionals, *2024 AFP Liquidity Survey*, pp. 4 and 10, available at <https://www.afponline.org/training-resources/resources/survey-research-economic-data/Details/liquidity-survey>.



**Figure 4: Comparison of bank deposits and MMFs as a cash management choice for non-financial corporate businesses.<sup>38</sup>**

### b) Private Liquidity Funds

Structurally, private liquidity funds are very similar to MMFs and are defined as “any private fund that seeks to generate income by investing in a portfolio of short-term obligations in order to maintain a stable net asset value (NAV) per unit or minimize principal volatility for investors.”<sup>39</sup> Additionally, private liquidity funds are exclusively available to institutional or high net worth investors.<sup>40</sup> Typically, private liquidity funds have a portfolio construction like prime and Treasury MMFs and hold portfolios consistent with rule 2a-7 risk limits.<sup>41</sup>

Because the MMF space (\$6.4 trillion) is subject to the protections of the Investment Company Act compared to the much smaller private liquidity fund space (\$320 billion), which is not subject to the same protections, institutional investors seem to demonstrate a preference for the MMF space.<sup>42</sup> For example, in the aftermath of the market dislocation of March 2020, approximately \$25 billion flowed into private liquidity funds (Figure 5) while \$1.1 trillion flowed into MMFs. During the 2023 banking crisis (March 1 to April 5), 78% of the \$362 billion that flowed into MMFs went into institutional MMFs, with almost 60% of that going to institutional government agency MMFs, for which there is no counterpart in the private fund space. Indeed, Figure 5 shows that the total NAV for private liquidity funds during the first

<sup>38</sup> *Financial Accounts of the United States – Z.1*, Table L.103, Nonfinancial Corporate Businesses, FEDERALRESERVE.GOV, available at <https://www.federalreserve.gov/releases/z1/> (last updated June 7, 2024).

<sup>39</sup> See Form PF: Glossary of terms, available at <https://www.sec.gov/files/formpf.pdf>.

<sup>40</sup> A private liquidity fund excluded from the Investment Company Act of 1940 by section 3(c)(7) of that Act is limited to investors who owns \$5 million or more in investments. An entity may also qualify if it owns and invests on a discretionary basis at least \$25 million in investments.

<sup>41</sup> See D. Hiltgen, *Private Liquidity Funds: Characteristics and Risk Indicators*, DERA White Paper (Jan. 2017), available at <https://www.sec.gov/files/2017-03/Liquidity%20Fund%20Study.pdf>.

<sup>42</sup> See *Money Market Fund Statistics*, SEC, available at <https://www.sec.gov/divisions/investment/mmf-statistics>; *Private Fund Statistics*, SEC, available at <https://www.sec.gov/divisions/investment/private-funds-statistics>.

quarter of 2023 decreased by \$5 billion, suggesting depositors preferred to put their withdrawals into MMFs over private liquidity funds during the 2023 banking crisis. Based on these statistics, investors do not appear to treat private liquidity funds as close a substitute for MMFs as bank deposits. As a result, private liquidity funds have not had a significant impact on the growth of MMFs despite their structural similarities.

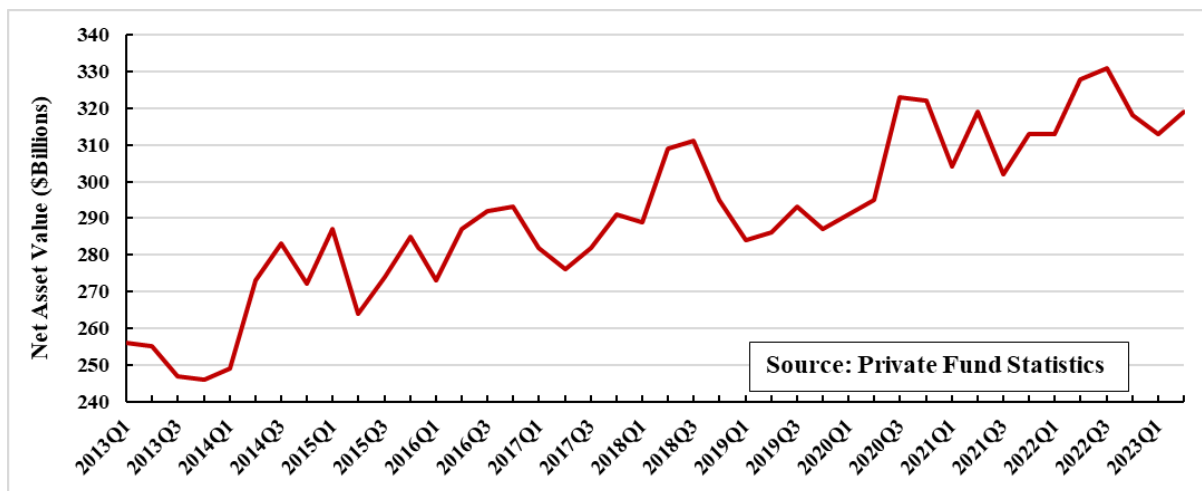


Figure 5: Net Asset Value of private liquidity funds.<sup>43</sup>

### III. Impact of Past Crises and Regulatory Reform on MMF Growth

Crises can have complex effects on different types of entities, and while they can lead to growth in certain MMFs, this growth may not always be universal. There are several ways in which crises have contributed to MMF growth. During the 2008 global financial crisis where numerous prime MMFs faced liquidity and credit risks, investors sought safer investments (e.g., government MMFs) to protect their capital. Similarly, the 2023 banking crisis resulted in an increase in demand for government MMFs as uninsured depositors moved some of their deposits from banks to government MMFs. The Commission implemented several regulatory reforms post-crises, rendering MMFs safer and more resilient in times of stress and affecting MMF growth. As such, this section briefly examines the impact of the 2008 global financial crisis, 2011 Euro debt crisis, U.S. debt-ceiling impasses, 2020 Covid-19 pandemic, 2023 banking crisis, and past regulatory reforms on MMF growth.

#### a) 2008 Global Financial Crisis

Starting in the 1970s, MMFs were marketed to the public with the assurance that they were both safe and easily convertible to cash.<sup>44</sup> These claims would not hold true, however, as

<sup>43</sup> Private Funds Statistics, *supra* note 42.

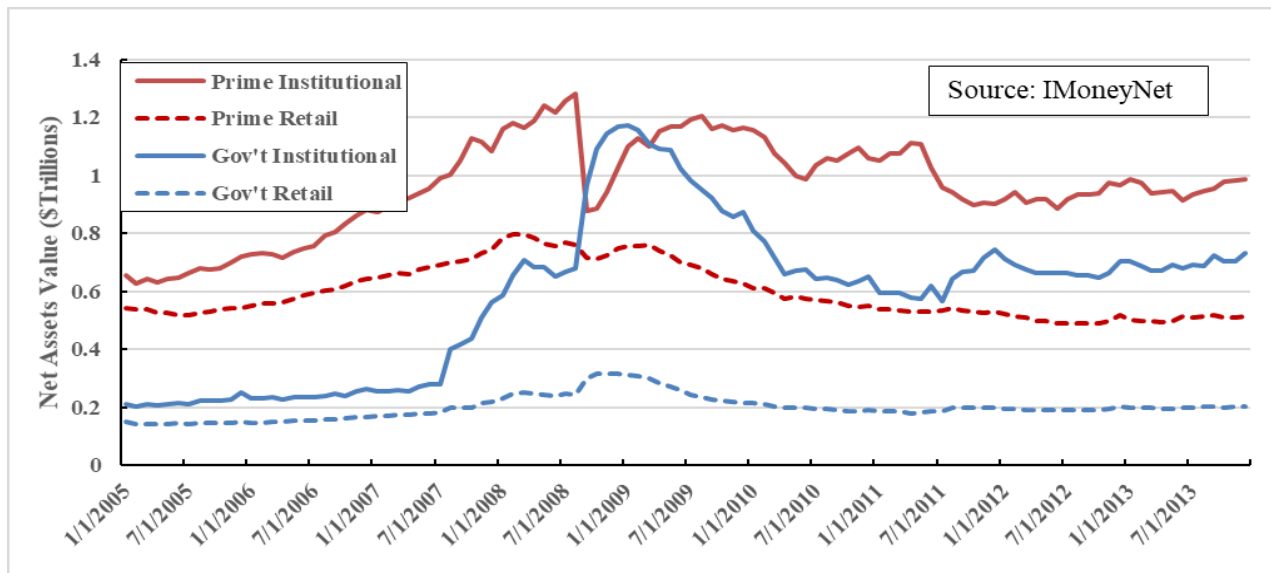
<sup>44</sup> See, e.g., REPORT OF THE STAFF OF THE DIVISION OF INVESTMENT MANAGEMENT OF THE SECURITIES AND EXCHANGE COMMISSION ON THE REGULATION OF MONEY MARKET FUNDS, SEC (Feb. 13, 1981), available at [https://www.sechistorical.org/collection/papers/1980/1981\\_0213\\_RegulationUtah.pdf](https://www.sechistorical.org/collection/papers/1980/1981_0213_RegulationUtah.pdf).

demonstrated during the 2008 global financial crisis, when MMF investors began to doubt the safety of their investment. This uncertainty caused a wave of prime MMF withdrawals, initiating a transformative shift in the MMF industry, with a progression from predominantly prime MMF dollars, constituting 66% in 2007, to predominantly government MMF dollars, now comprising 77% of all MMF assets. The MMF investor redemption behavior during September 2008 at the peak of the 2008 global financial crisis can most likely be attributed to the breaking of the buck by Reserve Primary Fund, which held Lehmann Brothers debt when the bank went bankrupt, and a flight by risk-averse institutional prime MMF investors to funds offering safer investments (i.e., higher quality, more liquidity and better transparency).<sup>45</sup> Ultimately, the MMF industry experienced an outflow of nearly one trillion dollars by 2010, exposing the imbedded risks of prime MMFs and prompting a series of regulatory reforms, the last occurring in 2023, aimed at making MMFs safer and more resilient.

Figure 6 illustrates that, as the 2008 global financial crisis unfolded, both retail and institutional investors turned away from prime MMFs to the safer government MMFs. Between May 2007 and January 2009, the combined value of retail and institutional government MMFs more than tripled from \$450 billion to \$1.50 trillion. However, for several reasons, half of this amount was withdrawn from government MMFs over the next 2-3 years. First, close MMF substitutes, including bank deposits, money market accounts, and retail 3-month CDs, provided higher rates of return for retail investors than MMF net yields. Second, the near-zero interest rates and steep yield curve at that time provided institutional investors an incentive to look elsewhere (e.g., long-term bonds) for higher yields. Third, the outflows also represented an unwinding of the shift to safer investments seen from 2007 to 2009.

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<sup>45</sup> See, e.g., Response to Questions Posed by Commissioners, *supra* note 9.



**Figure 6: Growth and reduction patterns seen as the result of the 2008 global financial crisis.**

## b) European Debt Crisis

The European debt crisis occurred in the summer of 2011. This financial crisis was characterized by high levels of public debt and concerns of sovereign solvency, leading to austerity measures, bailouts, and economic stress.<sup>46</sup> As the European debt crisis slowly progressed, some prime MMFs chased yield by including securities from U.S. branches of banks in the Eurozone in their portfolio construction.<sup>47</sup> However, most MMFs pared down their security holdings of these banks as the crisis unfolded, culminating in a dollar liquidity shortage and an increase in the cost of dollar funding.<sup>48</sup>

As shown in Figure 7, prime MMF investors began redeeming shares in the summer of 2011.<sup>49</sup> Like 2008, prime fund investors moved into government MMFs in a flight to safety, but then left at the end of the summer in fear of a U.S. default, resulting from the U.S. debt impasse. Prime

<sup>46</sup> See, e.g., D. Papadimitriou & L. Wray, *Euroland in Crisis as the Global Meltdown Picks Up Speed*, Levy Econ. Inst. of Bard College Working Paper No. 693 (Oct. 19, 2011), available at <https://ssrn.com/abstract=1946381> (retrieved from SSRN Elsevier database).

<sup>47</sup> See, Response to Questions Posed by Commissioners, *supra* note 9.

<sup>48</sup> See, e.g., R. Correa, H. Sapriza & A. Zlate, *Liquidity Shocks, Dollar Funding Costs, and the Bank Lending Channel During the European Sovereign Crisis*, FRB Boston Risk and Policy Analysis Unit Paper No. RPA 16-4, (Sept. 2016), available at <https://ssrn.com/abstract=3033353> (retrieved from SSRN Elsevier database).

<sup>49</sup> See, e.g., S. Chernenko & A. Sunderam, *Frictions in Shadow Banking: Evidence from the Lending Behavior of Money Market Mutual Funds*, 27 Rev. Fin. Stud. 1717-50 (June 2014), available at <https://www.jstor.org/stable/24465649>.

MMFs lost approximately \$100 billion, or 6%, of their assets during the three-week period starting in June 2011, while about half of that or \$52 billion flowed into government MMFs.

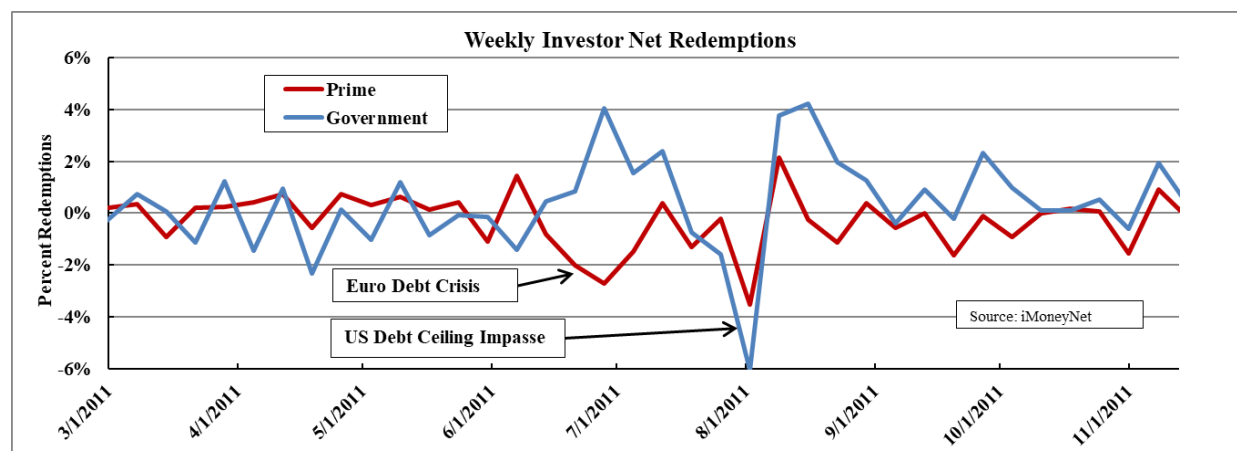


Figure 7: MMF investor flows during the Euro debt crisis and US debt ceiling impasse.

### c) U.S. Debt Limit

When Congress hesitated to raise the debt ceiling over a five-month period, starting in January 2023, it resulted in yet another near-default episode.<sup>50</sup> During this time, the rating agency Fitch placed U.S. sovereign debt on a negative watch.<sup>51</sup> Congress raised the debt ceiling on June 1, 2023, only 4 days before a default. The likely consequence of severe economic stress to capital markets should the U.S. ever default highlights the fact that government MMFs are not without risk.<sup>52</sup>

Government MMFs have been exempted from floating their NAV by the Commission’s 2014 MMF reforms.<sup>53</sup> Instead, they are allowed to continue using the amortized cost method and penny rounding to maintain a stable NAV. However, this means they are still exposed to significant changes to the value of their underlying investment portfolio in government securities, including changes resulting from a U.S. default. Within 30 days of the trigger dates of past ceiling impasses (Table 1), Treasury yields increased, Treasury spreads between 3-month

<sup>50</sup> Some have argued that a debt ceiling breach would not necessarily constitute a U.S. default. In this scenario, the Treasury would prioritize paying Treasury investors first to avoid a default. M. Zandi, C. deRitis & B. Yaros, *Going Down the Debt Limit Rabbit Hole*, MOODY’S ANALYTICS (Mar. 2023), available at <https://www.moodyanalytics.com/-/media/article/2023/going-down-the-debt-limit-rabbit-hole.pdf>.

<sup>51</sup> See *Fitch Places United States’ “AAA” on Rating Watch Negative*, FITCH RATINGS (May 24, 2023), available at <https://www.fitchratings.com/research/sovereigns/fitch-places-united-states-aaa-on-rating-watch-negative-24-05-2023>.

<sup>52</sup> See, e.g., M. Zandi, A. Karmins & B. Yaros, *Debt Limit Scenario Update*, MOODY’S ANALYTICS (May 2023), available at <https://www.moodyanalytics.com/-/media/article/2023/Debt-Limit-Scenario-Update.pdf>.

<sup>53</sup> Money Market Fund Reform; Amendments to Form PF, Investment Company Act Release No. 31166 (July 23, 2014) [79 FR 47735 (Aug. 14, 2014)].



and 1-month bills became negative, and 1-year U.S. credit default swap prices increased, compensating investors for a higher US default probability.<sup>54</sup>

**Table 1: US Debt Ceiling Impasses Since 2011**

Year	Date Ceiling Reached	US Default Trigger Date	Date Resolved	Threat of Federal Government Shut Down Concurrently
2011	Aug. 2	Aug. 15	Aug. 2	No
2013	May 19	Oct. 17	Oct. 16	Yes
2015	Mar. 31	Nov. 3	Oct. 30	No
2017	Mar. 16	Sept. 29	Sept. 8	Yes
2023	Jan. 19	June 5	June 1	No

Looking at past portfolio data, some MMFs increased their holdings of Treasury securities whose maturity coincides with a U.S. default, suggesting those MMFs were chasing yield. Moreover, an analysis of the shadow prices<sup>55</sup> showed that those MMFs holding Treasury securities maturing when the U.S. might have defaulted could have broken the buck had the recovery rate for the defaulted Treasury securities been below 98%, even absent any investor redemptions.<sup>56</sup>

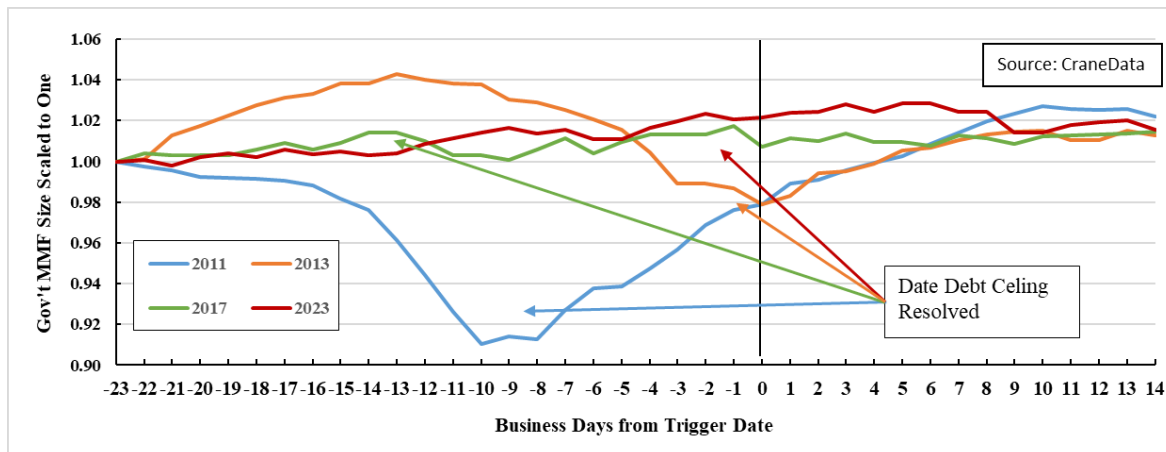
The debt ceiling requires regular modifications to allow the U.S. to continue to pay its obligations. Unlike 2011 and 2013 where MMFs with substantial liquidity needs experienced outflows,<sup>57</sup> Figure 8 shows that the impact on government MMFs in 2017 and 2023 was generally muted, suggesting investor confidence that Congress would resolve the impasses before a U.S. default. The U.S. will hit the debt ceiling again in January 2025 absent Congressional action. The considerable market turbulence and the potential of MMF outflows from a possible U.S. default in the future could significantly impact the growth of government MMFs.

<sup>54</sup> See, e.g., *The Potential Economic Impacts of Various Debt Ceiling Scenarios*, WHITE HOUSE (May 3, 2023), available at <https://www.whitehouse.gov/cea/written-materials/2023/05/03/debt-ceiling-scenarios/>; Emily Gallagher & Sean Collins, *Money Market Funds and the Prospect of a U.S. Treasury Default*, 6 Q. J. Fin. 1-44 (Mar. 2016), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2649231](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2649231) (retrieved from SSRN Elsevier database).

<sup>55</sup> See *supra* note 13.

<sup>56</sup> See PRICING OF U.S. MONEY MARKET FUNDS, ICI RESEARCH REPORT (Jan. 2011), available at [https://www.ici.org/doc-server/pdf%3Aprpr\\_11\\_mmf\\_pricing.pdf](https://www.ici.org/doc-server/pdf%3Aprpr_11_mmf_pricing.pdf) (determining the percentage of a portfolio that can default before a MMF risks breaking the buck).

<sup>57</sup> Gallagher & Collins, *supra* note 54.



**Figure 8: Daily government MMF total net assets scaled to one 23 business days from the U.S. default trigger date.<sup>58</sup>**

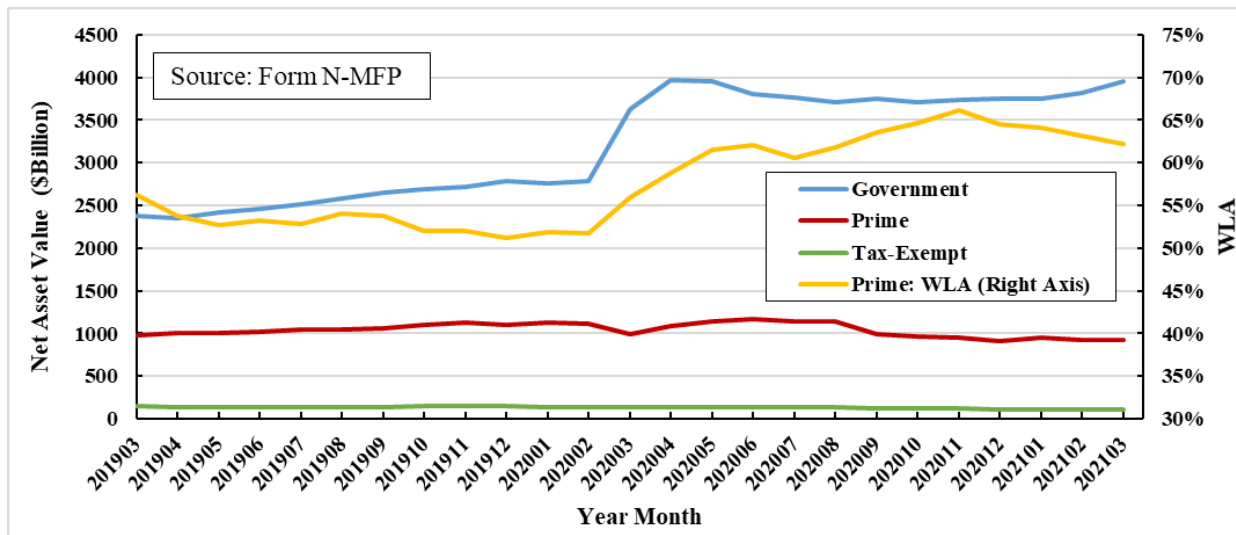
#### d) Covid-19 Pandemic of 2020

In many ways, the impact of the Covid-19 pandemic on MMFs was like that of the 2008 global financial crisis, despite its limited duration. During March 2020, short-term market volatility and dislocation led to runs on institutional prime and institutional tax-exempt MMFs, while investors sought safety in government MMFs.<sup>59</sup> Figure 9 shows that both government MMFs and the MMF industry grew by about \$1.2 trillion dollars between February and April 2020. Both market dislocation events also were followed by a near-zero interest rate environment and MMF net yields lower than bank rates (e.g., savings deposits, money market accounts, and retail 3-month CDs). However, the spread between MMF net yields and bank rates was approximately -0.5% during the 2008 global financial crisis compared to approximately -0.05% in 2020, giving MMF investors less incentive to switch during the pandemic compared to the global financial crisis. Even though the volatility metrics stabilized after the start of the pandemic, liquidity (e.g., the amount of weekly liquidity assets, or WLA) in riskier institutional prime MMFs, which increased sharply after March 2020, remained high as illustrated in Figure 9, suggesting MMFs may have planned for future redemptions during a protracted pandemic. This may have also reduced the incentive for some investors to leave government MMFs.<sup>60</sup>

<sup>58</sup> CraneData’s MFI daily data, available at <https://cranedata.com/>. In this case, scaled or normalized to one means to divide all the values in the sample by the first value in the sample. Because of gaps in the October 2015 data, the data was excluded from the analysis.

<sup>59</sup> See, e.g., OVERVIEW OF RECENT EVENTS AND POTENTIAL REFORM OPTIONS FOR MONEY MARKET FUNDS, REPORT OF THE PRESIDENT’S WORKING GROUP ON FINANCIAL MARKETS, U.S. DEPT. OF THE TREASURY (Dec. 2020), available at <https://home.treasury.gov/system/files/136/PWG-MMF-report-final-Dec-2020.pdf>; L. Li, Y. Li, M. Macchiavelli & X. Zhou, *Liquidity Restrictions, Runs, and Central Bank Interventions: Evidence from Money Market Funds* (May 24, 2021), available at <https://ssrn.com/abstract=3607593> (retrieved from SSRN Elsevier database).

<sup>60</sup> Figure 9 suggests that \$440 billion left MMFs over a five-month period in 2020, and most of those dollars returned as the pandemic persisted.



**Figure 9: Impact on the different types of MMF’s net asset values and institutional prime WLA percentages around the March 2020 market dislocation caused by the Covid-19 pandemic.**

### e) Banking Crisis of 2023

Large inflows to government MMFs occurred in 2023 after a run on mostly uninsured deposits,<sup>61</sup> precipitated by losses on long-dated securities, including Treasury bonds, led to solvency issues at Silicon Valley Bank, Signature Bank, Silvergate Bank, Credit Suisse Bank and First Republic Bank and concerns about the stability of the regional banking system. A recent paper on the fragility of U.S. banks suggests there would be 66 (106) bank failures if 10% (30%) of uninsured depositors ran.<sup>62</sup> Silicon Valley Bank collapsed after approximately 30% of its uninsured depositors ran.<sup>63</sup> Approximately 43% of all bank deposits are uninsured as of December 31, 2022.<sup>64</sup>

Apart from solvency concerns, there are a couple of reasons why dollars continued to flow from banks to MMFs. One factor is the spread between MMF net yields and bank rates (e.g., savings deposits, money market accounts and retail 3-month CDs), which is currently high at 4%. If the spread persists, it suggests that investors may continue to move their money from banks to MMFs in search of higher yields. In a high inflation economy like the one we are currently experiencing, there is also a high opportunity cost of holding cash or deposits. The inflation rate

<sup>61</sup> Unlike uninsured deposits, government MMFs offer investments with an explicit guarantee by the U.S. federal government for certain government securities (e.g., Treasuries) and a perceived implicit guarantee for others (e.g., Federal Home Loan Bank securities).

<sup>62</sup> See *supra* note 29.

<sup>63</sup> *Id.*

<sup>64</sup> See, e.g., FED. DEPOSIT INS. CORP., OPTIONS FOR DEPOSIT INSURANCE REFORM (2023), available at <https://www.fdic.gov/analysis/options-deposit-insurance-reforms/index.html>.

for December 2023 was 3.4% (compared to 6.5% a year earlier), while the net yields for MMFs and saving deposit rates were 5.4% and 0.5%, respectively.<sup>65</sup> Another reason is that some large uninsured depositors in banks during the 2023 banking crisis may have realized the need to diversify their deposits more, which includes investing in MMFs.<sup>66</sup>

Figure 10 shows that total bank deposits (blue line) decreased after July of 2022.<sup>67</sup> While this decrease initially accelerated, the level of bank deposits has flattened out since. In addition, total MMF assets (red line) seem to be rising as bank deposits declined, capturing the substitution between the two products. Between March 1 and April 5, \$385 billion in bank deposits left banks and \$362 billion flowed into MMFs. Not shown in the figure is an additional effect: deposits also flowed into more stable banks (e.g., JPMorgan, Bank of America, and Citi Bank) and into buying Treasuries.<sup>68</sup> Table 2 shows that the dollars flowed into government agency and Treasury MMFs, while little flowed out of prime MMFs. Approximately 78% of the \$362 billion went into institutional government MMFs, representing uninsured institutional depositors. Any further erosion of the 2023 banking crisis (e.g., commercial real estate distress) may lead to further MMF growth.<sup>69</sup>

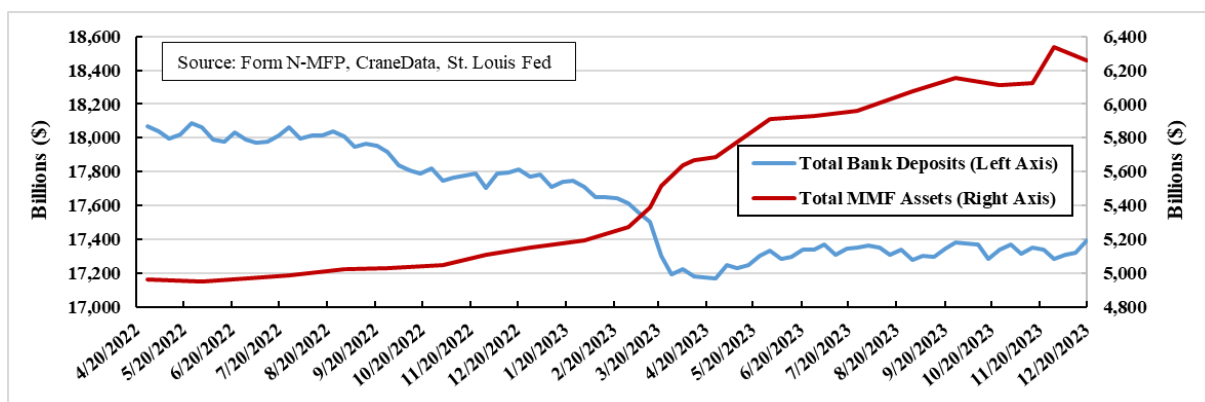


Figure 10: Dollars flowed from bank deposits into MMFs.<sup>70</sup>

<sup>65</sup> See, e.g., *Current US Inflation Rates: 2000-2024*, US INFLATION CALCULATOR (A COINNEWS MEDIA GRP. CO.), available at <https://www.usinflationcalculator.com/inflation/current-inflation-rates/#:~:text=The%20annual%20inflation%20rate%20for,2024%2C%20at%208%3A30%20a.m>; *National Rates and Rate Caps*, FDIC, available at <https://www.fdic.gov/resources/bankers/national-rates/previous-rates.html>.

<sup>66</sup> See, e.g., *The Federal Regulators' Response to Recent Bank Failures: Hearing Before the H. Comm. on Fin. Servs.*, 108<sup>th</sup> Cong. 6-7 (2023) (statement of Martin J. Gruenberg, Chairman, Fed. Deposit Ins. Corp.), available at <https://www.congress.gov/118/chr/CHRG-118hrg52390/CHRG-118hrg52390.pdf>.

<sup>67</sup> Changes to total bank deposits only reflects dollars leaving the banking system and not transfers between banks.

<sup>68</sup> See, e.g., Assoc. Fin. Professionals *supra* note 37, at 10; C. Caglio, J. Dlugosz & M. Rezende, *Flight to Safety in the Regional Bank Crisis of 2023* (May 23, 2023), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4457140](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4457140) (retrieved from SSRN Elsevier database).

<sup>69</sup> See, e.g., Jiang *supra* note 29; M. Zandi, C. deRitis, D. Moore, M. Wurm & B. Yaros, *What If the Banking Crisis Is Not Over?*, MOODY'S ANALYTICS (Apr. 2023), available at <https://www.moodyanalytics.com/-/media/article/2023/Bank-Crisis-Scenarios-April-2023.pdf>.

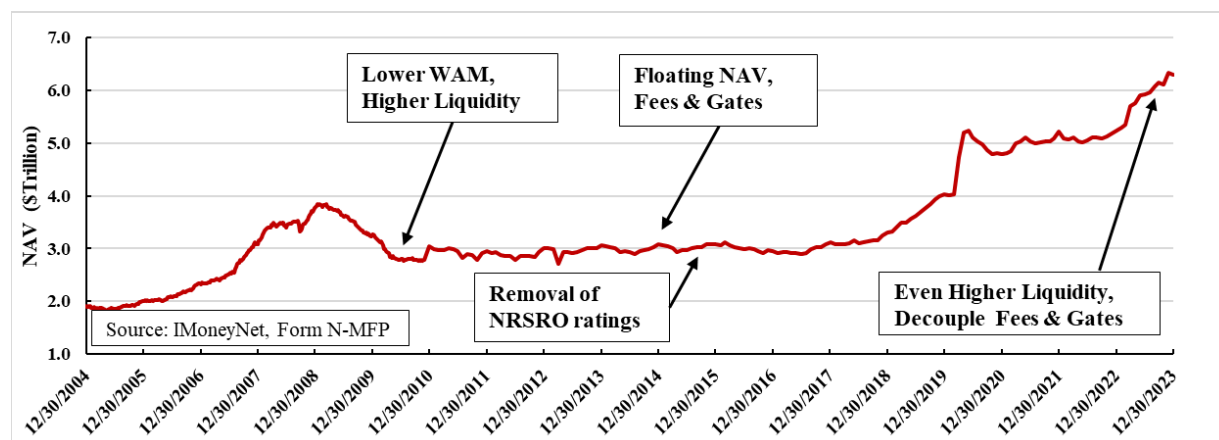
<sup>70</sup> FRED, *supra* note 24; CraneData, *supra* note 58.

**Table 2: MMF growth between 3/1/2023 and 4/5/2023<sup>71</sup>**

MMF Type	Change between 3/1/23 and 4/5/23	
	\$ (Billion)	%
Treasury Institutional	122	11%
Gov't Agency Institutional	161	10%
Treasury Retail	54	28%
Gov't Agency Retail	41	4%
Prime Institutional	-13	-2%
Prime Retail	-6	-1%
Tax Exempt (Retail & Inst.)	2	2%
<b>Total</b>	<b>362</b>	<b>7%</b>

### f) Regulatory Reforms

Regulatory reforms have had a significant impact on the growth of MMFs. Regulations that provide transparency and protect investors' interest build confidence in MMFs and increase their attractiveness to investors. After the 2008 global financial crisis, the net asset value (NAV) of the MMFs industry decreased by 22%. As a response to the 2008 global financial crisis, the Commission implemented a series of reforms to address the structural vulnerabilities of MMFs (Figure 11).



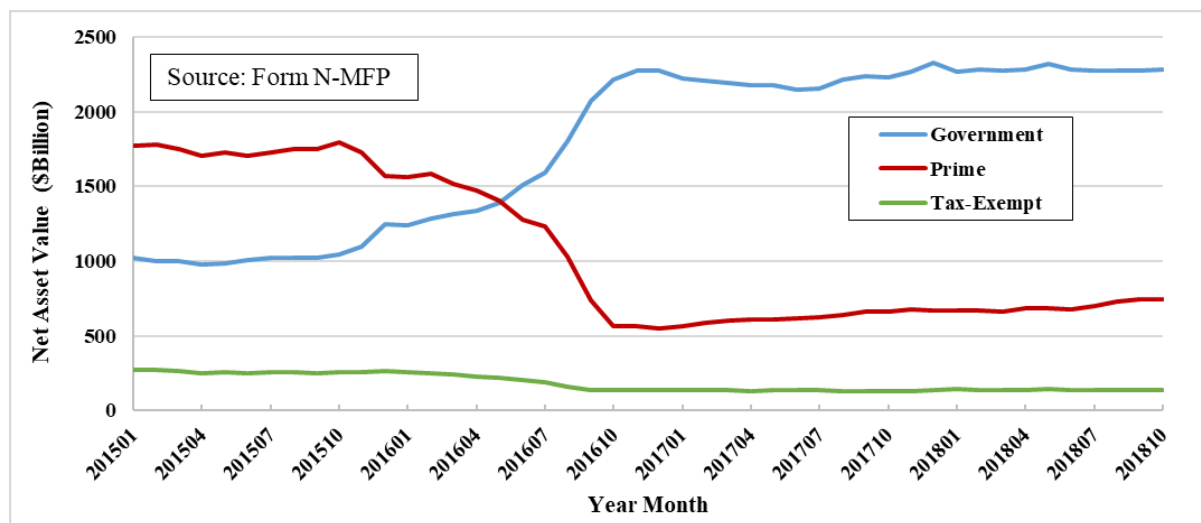
**Figure 11: Historic MMF net asset values surrounding different MMF rulemaking dates.**

In 2010, the Commission lowered the weighted average maturity to address credit risk and created daily and weekly threshold limits to address liquidity risk.<sup>72</sup> Adding redemption fees and gates tied to liquidity thresholds and making institutional prime and institutional tax-exempt

<sup>71</sup> CraneData, *supra* note 58.

<sup>72</sup> See Money Market Fund Reform, Investment Company Act Release No. 29132 (Feb. 23, 2010) [75 FR 10060 (Mar. 4, 2010)].

MMFs float their NAVs in 2014 was intended to mitigate first mover advantage.<sup>73</sup> Regulatory reforms in 2014 made institutional prime and institutional tax-exempt MMFs less attractive to some investors.<sup>74</sup> This caused some investors to threaten to divest from these products,<sup>75</sup> but ultimately most of the investors stayed within the same fund complex and swapped approximately \$1.2 trillion of their riskier prime and tax-exempt MMF shares for safer government MMFs shares (Figure 12). In 2015 came the removal of references to NRSRO ratings.<sup>76</sup>



**Figure 12: MMF net asset value changes surrounding the October 2016 implementation date of the 2014 reforms.**

These regulatory reforms were tested in 2020, as the result of the Covid-19 pandemic, when the short-term funding markets and MMFs came under stress (as in 2008). The challenges faced in 2020 emphasized the importance of developing improved tools to manage through substantial and sudden investor redemptions, while mitigating the impact of dilution on shareholders. The

<sup>73</sup> See Money Market Fund Reform; Amendments to Form PF, Investment Company Act Release No. 31166 (July 23, 2014) [79 FR 47735 (Aug. 14, 2014)]. (“... money market fund investors transacting their shares typically do not incur the costs associated with their transaction activity. Instead, these liquidity costs may be borne by shareholders remaining in the fund, which may contribute to a first-mover advantage and run risk.”)

<sup>74</sup> The 2014 regulatory reforms made prime MMFs less money-like and more information sensitive relative to government MMFs. See M. CIPRIANI & G. LA SPADA, INVESTORS’ APPETITE FOR MONEY-LIKE ASSETS: THE MONEY MARKET FUND INDUSTRY AFTER THE 2014 REGULATORY REFORM, FED. RSRV. BANK OF N.Y. STAFF REPORTS, No. 816 (June 2018), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2989552](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2989552) (retrieved from SSRN Elsevier database).

<sup>75</sup> See Money Market Fund Reform; Amendments to Form PF, Investment Company Act Release No. 31166 (July 23, 2014) [79 FR 47735 (Aug. 14, 2014)].

<sup>76</sup> See Removal of Certain References to Credit Ratings and Amendment to the Issuer Diversification Requirement in the Money Market Fund Rule, Investment Company Act Release No. 31828 (Sep. 16, 2015) [80 FR 58123 (Sep. 25, 2015)].



resulting reforms in 2023 included a modified liquidity fee framework, increased liquidity thresholds and removing the gate provision established in the 2014 reforms.<sup>77</sup>

As of March 2024, there was only \$638 billion in institutional prime MMF assets. In response to the 2023 regulatory reforms, several institutional prime MMFs have announced that they will convert into institutional government MMFs (\$206 billion in combined assets) or liquidate (\$12 billion in combined assets).<sup>78</sup> Most institutional prime MMFs said they will take a wait-and-see approach.<sup>79</sup> The 2023 regulatory reforms may prompt other MMF investors to reallocate their investments towards government MMF or withdraw from MMFs, while not very likely, in favor of other cash management tools.<sup>80</sup>

In the period since the Commission started enacting major reforms in 2010, which encompassed the Euro debt crisis, several U.S. debt ceiling impasses, the Covid-19 pandemic and the 2023 banking crisis, there has not been a significant drop in industry total assets (Figure 11). In fact, the industry has more than doubled in size since 2010. Past MMFs reforms have made MMFs safer and more resilient in times of stress and should aid further industry growth within this space.<sup>81</sup>

#### **IV. The Influence of Federal Reserve Policies and Federal Home Loan Bank Advances on MMF Growth**

This section discusses the influence of certain financial tools that affect economic conditions and financial markets on MMF growth. More specifically, the Federal Reserve policies (e.g., federal funds rate and the overnight reverse repo program) and advances from the Federal Home Loan Banks (FHLBs) both influence various aspects of the financial markets, including lending rates, liquidity management, and overall financial stability. In turn, these impact MMF growth. Among these, the federal funds rate seems to have the greatest impact. A comparison of current data with data over the last few decades in terms of different risks and economic indicators illustrates potential challenges and opportunities for MMF growth.

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<sup>77</sup> See Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A. Investment Company Act Release No. IC-34959 (July 12, 2023) [88 FR 51404 (Aug. 3, 2023)]. The compliance date for the last of the tiered reforms (i.e., mandatory liquidity fees) is Oct. 2, 2024.

<sup>78</sup> See, e.g., Capital Group Central Cash Fund Series' N-1A Filing, available at <https://www.sec.gov/Archives/edgar/data/1757150/000005193124000122/cfposami.htm>; Dreyfus Cash Management's Supplement to Summary Prospectus, Prospectus and Statement of Additional Information filing available at [sec.gov/Archives/edgar/data/759667/000075966724000017/dcm-288proandsaistkr52024.htm](https://www.sec.gov/Archives/edgar/data/759667/000075966724000017/dcm-288proandsaistkr52024.htm).

<sup>79</sup> See *supra* note 37, at 4 and 11.

<sup>80</sup> See *supra* note 77.

<sup>81</sup> *Id.*

## a) Federal Reserve's Policies

The size of the MMF industry is responsive to adjustments made by the Federal Reserve in its policy to change the federal funds rate. The rates the Federal Reserve pays on banks' reserve balances and the overnight reverse repo facility (RRP) affect the federal funds rates and, as a result, yield for instruments held by MMFs. This section discusses the impact of the yield curve and federal funds rate and the RRP on the growth of MMFs.

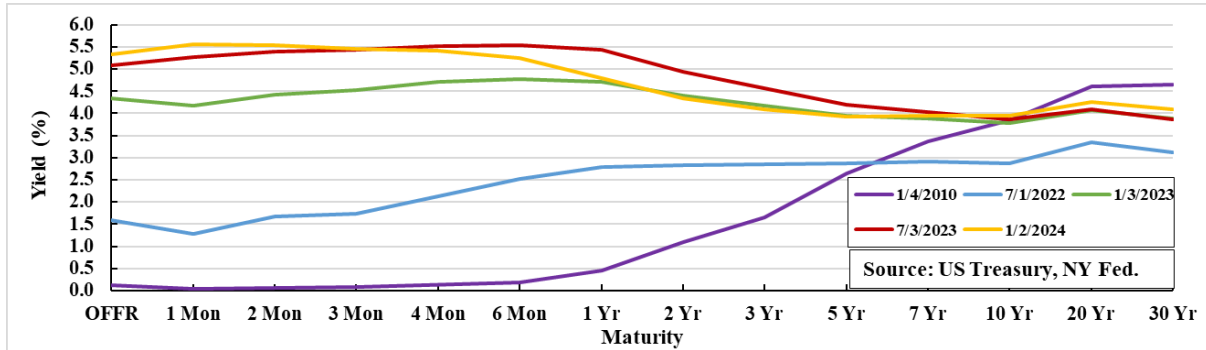
### 1) Yield Curve and Federal Funds Rate

The federal funds rate and by extension the yield curve is an effective channel through which the Federal Reserve's policy changes are transmitted to investors. The information conveyed by the shape of the yield curve – whether it is “normal” (i.e., upward sloping), flat, or inverted – provides investors the possible direction the financial markets are headed. For example, an inverted yield curve implies economic growth will slow and is a leading indicator for a recession. While a normal yield curve implies economic growth, possibly leading to inflation. For MMF investors, the short end of the yield curve is important. An inverted yield curve means short-term rates and MMF net yields are high, making MMFs an attractive investment. While a normal yield curve means short-term rates are low and MMF net yields are low, making MMFs a less attractive investment.

Unlike MMF net yields, which rise and fall according to changes in the federal funds rate, bank deposits rates are more linked to bank strategy and competition than the federal funds rate. Figure 3 showed that bank rates remained low even as the federal funds rate and MMF net yields began increasing in 2022. Until a recent decision by the Federal Reserve to pause interest rate hikes, we were in a steepening inverted yield curve (yellow line in Figure 13), which increased the spread between MMF net yields and bank rates as the federal funds rate increased, rendering MMFs a compelling investment option. Consequently, depositors were moving to MMFs in 2023 in search of higher yields than what banks were offering (Figure 3), indicating ongoing MMF growth as long as short-term interest rates stay elevated. In contrast, in 2010, when the yield curve was normal with a federal funds rate near zero (purple line in Figure 13), dollars moved out of MMFs and into banks, which offered higher rates than MMFs net yields (Figure 3).<sup>82</sup>

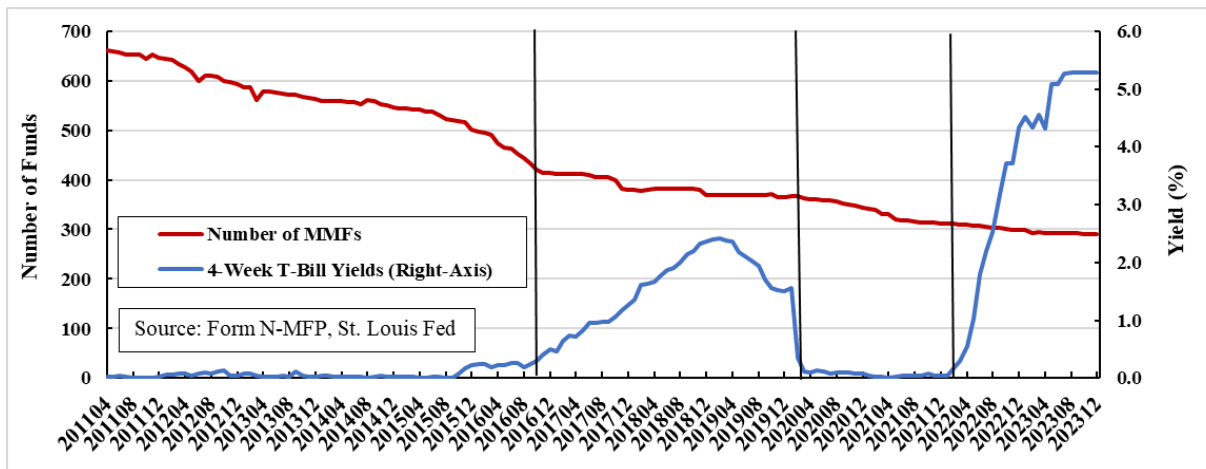
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<sup>82</sup> FDIC Bank rate data, available at <https://www.fdic.gov/resources/bankers/national-rates/previous-rates.html>.



**Figure 13: Yield curves and the overnight federal funds rate (OFFR) for different dates.<sup>83</sup>**

Generally, near-zero interest rates have a negative impact on the size of the MMF industry. In such an environment, MMFs may have to waive fees just to keep yields positive, while some may consolidate or liquidate. Figure 14 illustrates how the number of MMFs decreased during periods of near-zero interest rates.<sup>84</sup> However, some fund complexes considered MMFs as a loss leader when rates were near zero because investors want MMFs to be part of a complex’s fund lineup. The current high net yields are the highest observed in nearly two decades and are likely to halt the decline in the number of MMFs for the foreseeable future. In addition, with the increase in the amount of industry total assets (Figure 11) and the decline in the number of MMFs (Figure 14), the average size for a MMF has increased from \$9 billion in December 2018 to \$22 billion in December 2023.



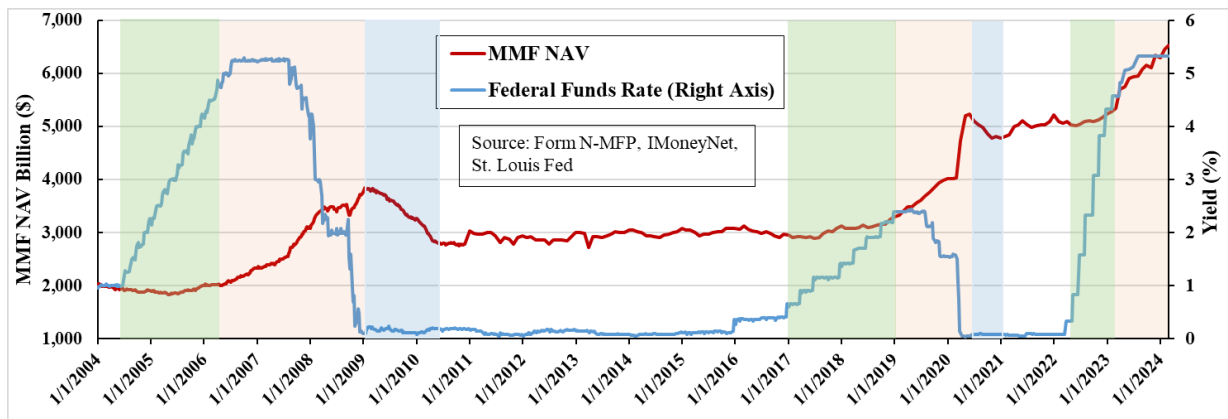
**Figure 14: The number of MMFs decreases when interest rates are near zero.<sup>85</sup>**

<sup>83</sup> *Overnight Bank Funding Rates*, FED. RSRV. BANK N.Y., available at <https://www.newyorkfed.org/markets/reference-rates/obfr>; *Daily Treasury Par Yield Curve Rates*, U.S. DEP’T TREASURY, available at [https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily\\_treasury\\_yield\\_curve&field\\_tdr\\_date\\_value=2010](https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_yield_curve&field_tdr_date_value=2010).

<sup>84</sup> The 2016 MMF reforms also contributed to the decrease in number of funds.

<sup>85</sup> Bd. of Governors of the Fed. Rsrv. Sys. (US), 4-Week Treasury Bill Secondary Market Rate, Discount Basis [DTB4WK], retrieved on Jan. 2., 2023, from FRED, Fed. Rsrv. Bank of St. Louis (Jan. 2, 2023), available at <https://fred.stlouisfed.org/series/DTB4WK>.

Historically, the size of the MMF industry tends to grow when the federal funds rate increases and decline when federal funds rates is cut to levels near-zero. Figure 15 illustrates that within one to two years after the start of federal fund rate hikes (green area in Figure 15), the total NAV of the MMF industry typically experiences a sustained growth the following years (peach area in Figure 15). During the previous two tightening cycles that began in 2004 and 2015, the total NAV of the MMF industry grew by approximately \$2 trillion each time. As of December 31, 2023, we had seen a rise of about \$1 trillion in the MMF industry’s total NAV for the tightening cycle that started in 2022. As a result, history suggests the total NAV may rise by another \$1 trillion over the next year or two.<sup>86</sup>



**Figure 15: NAV for the MMF industry starts to increase (decrease) 1-to-2 (4-to-5) years after the Federal Reserve starts aggressively tightening rates.<sup>87</sup>**

As discussed above, during times of market turmoil and volatility, investors have often shifted their investments to government MMFs. However, for many of these investors, this flight to safety unwinds after the market stress dissipates and more attractive investments present themselves (blue area in Figure 15). For instance, four and half years after the Federal Reserve tightening cycle began in 2004, dollars started flowing out of government MMFs as the interest rate environment became unfavorable for MMF investors. The outflow of \$1 trillion also

<sup>86</sup> In agreement with this projection, a Barclays’ money market strategist in April 2023 also assessed a comparable \$2.0 trillion increase in total NAV. Because the total NAV of the MMF industry rose \$0.5 trillion since the 2022 tightening cycle began (i.e., as of Apr. 2023), the strategist suggested an additional \$1.5 trillion increase in total NAV. Liz McCormick, *Investors Seen Pouring \$1.5 Trillion More into the Safest Money Funds*, BARCLAYS (Apr. 5, 2023), available at <https://www.bloomberg.com/news/articles/2023-04-05/barclays-sees-1-5-trillion-more-plowing-into-safest-money-funds?leadSource=verify%20wall> (“We expect money fund balances to increase sharply in the next year...While it seems that the concerns about broader bank solvency are fading, they appear to have caught the attention of this deposit base. Institutional investors have noticed that they were not getting as much compensation for taking on unsecured bank risk by keeping bank deposits above the \$250,000 insurance cap.”)

<sup>87</sup> Bd. of Governors of the Fed. Rsrv. Sys. (US), Federal Funds Effective Rate [FEDFUNDS], retrieved on Apr. 29, 2023, from FRED, Fed. Rsrv. Bank of St. Louis (Apr. 29, 2023), available at <https://fred.stlouisfed.org/series/FEDFUNDS>

represented an unwinding of the flight to safety that occurred between 2007 and 2008, accounting for half of the dollars that flowed into MMFs.<sup>88</sup>

It would have been reasonable to expect a similar unwinding of the flight to safety from the 2020 Covid-19 market dislocation and near-zero interest rate environment. However, only \$440 billion left MMFs over a five-month period in 2020, and most of those dollars returned as the pandemic persisted (Figure 9). Interestingly, it appears that the persistence of the pandemic, the lack of alternative investments as discussed above, and the start of the 2022 Federal Reserve tightening cycle probably prevented a larger unwinding of the flight to safety seen in March and April of 2020.<sup>89</sup> It then seems possible that in the future, if another near-zero interest rate environment follows the recent interest rate increases, investors may leave MMFs as they did in 2009 and briefly at the end of 2020. Others think the unwinding may come sooner as investors are sitting on the sidelines (i.e., in MMFs) waiting to put their cash to work in the stock market when the bear market ends.<sup>90</sup> However, since the bear market low of October 2022, this conjecture has yet to materialize. Furthermore, BlackRock makes the claim that since February 1995 MMFs underperformed most asset classes a year after the last Fed rate hike, suggesting investors should now consider a move to longer maturing and riskier assets.<sup>91</sup> Nevertheless, Figure 15 shows that after the 2004 and 2015 tightening cycles dollars did not start leaving MMFs until the interest rates dropped to near-zero.

## 2) Overnight Reverse Repo Facility

When depositors shifted their deposits away from banks in 2023 and allocated them to MMFs, one prominent investment avenue for MMFs was the Reverse Repo Facility (RRP).<sup>92</sup> Under the RRP, MMFs buy U.S. Treasuries, for which there is a \$160 billion cap per counterparty, from the Federal Reserve who agrees to buy them back the next day with interest. Between 2013 and

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<sup>88</sup> See, e.g., 2010 Investment Company Fact Book, 50<sup>th</sup> Ed., available at [https://www.ici.org/doc-server/pdf/%3A2010\\_factbook.pdf](https://www.ici.org/doc-server/pdf/%3A2010_factbook.pdf) (“Money market funds, particularly those funds invested only in U.S. government securities, experienced substantial outflows in 2009, reflecting the search for higher yields in an environment of low short-term interest rates accompanied by a steep yield curve and an unwinding of the flight to safety by investors in response to the financial crisis of 2007 and 2008.”).

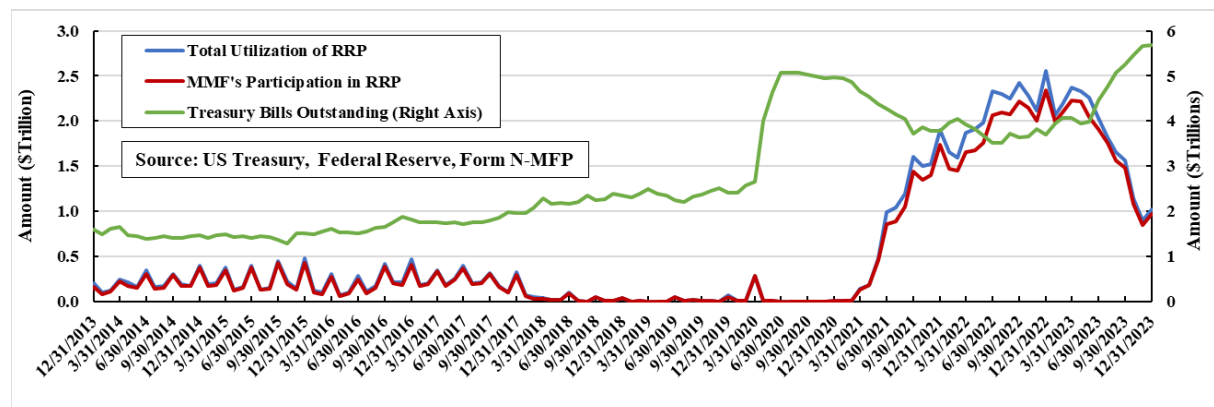
<sup>89</sup> See DERA Economic and Risk Outlook, SEC (July 15, 2020), available at [https://www.sec.gov/files/dera\\_economic-and-risk-outlook\\_report\\_jul2020.pdf](https://www.sec.gov/files/dera_economic-and-risk-outlook_report_jul2020.pdf).

<sup>90</sup> See, e.g., M. Fox, *There’s a Record \$5.3 Trillion in Cash on the Sidelines as Investors Get More Bearish On Stocks. Here’s Why That Could Mean Big Gains Ahead*, MARKETS INSIDER (May 7, 2023), available at <https://markets.businessinsider.com/news/stocks/stock-market-outlook-5-trillion-sidelined-cash-dry-powder-bull-2023-5>.

<sup>91</sup> See *Should Investors Rethink Their Dash To Cash*, BLACKROCK (Sept. 14, 2023), available at <https://www.blackrock.com/hk/en/insights/investors-rethink-cash-allocation>.

<sup>92</sup> The availability of eligible securities for investment depends on their supply and demand, which can change over time. Per Rule 2a-7, MMFs can only invest in eligible securities defined as a security: (i) With a remaining maturity of 397 calendar days or less that the fund’s board of directors determines presents minimal credit risks to the fund; (ii) That is issued by a registered investment company that is a MMF; or (iii) That is a government security. Rule 2a-7a(11), (d)(2)(i).

2018, utilization of the RRP by MMFs was around \$100 billion, but increased sharply to about \$400 billion at the end of each quarter, as traditional repo dealers tend to pull back their offerings as they trim their balance sheet ahead of regulatory capital reports (Figure 16). Since 2021, however, investment in the RRP facility dramatically increased from zero to over \$2.3 trillion as of December 31, 2022, representing 92% of the total RRP investment and nearly 45% of all MMF investments.



**Figure 16: MMF participation the Federal Reserve’s overnight reverse repo program.<sup>93</sup>**

Federal Reserve Chair Powell stated that he did not think that dollars flowing into MMFs from bank deposits and going into the RRP added stress to the 2023 banking crisis.<sup>94</sup> However, others disagreed and suggested that MMF dollars that flowed into the RRP added to bank-system stress.<sup>95</sup> It has also been reported that some MMFs have been created for the sole purpose of placing funds at the RRP with the Federal Reserve, which is considered to be a nearly risk-free counterparty.<sup>96</sup> In reaction, the Federal Reserve restricted access of certain MMFs to the RRP.<sup>97</sup>

MMFs can benefit from rising interest rates by investing in shorter duration securities, such as overnight reverse repos from the RRP, which offered an attractive yield of 5.3% as of December 31, 2023, compared to lower Treasury bills yields, particularly in an inverted yield curve

<sup>93</sup> *U.S. Treasury Monthly Statement of the Public Debt*, TREAURY.GOV, at <https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/summary-of-treasury-securities-outstanding>; *Federal Reserve Repo Facility Total Utilization and MMFs’ Participation*, Office of Financial Research, U.S. Department of the Treasury, available at <https://www.financialresearch.gov/money-market-funds/federal-reserve-repo-facility-total-utilization-and-mmfs-participation/>.

<sup>94</sup> See, e.g., Transcript of Chair Powell’s FOMC press conference (May 3, 2023), available at <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230503.pdf>.

<sup>95</sup> See, e.g., Eric Wallerstein & Nick Timiraos, *Outflows Shine Light on Fed Program That Pays Money Market Funds*, WALL ST. J. (Apr. 5, 2023) (retrieved from Factiva database).

<sup>96</sup> See, e.g., M. Bisanz, A. Olmem, L. Cruz & J. Taft, *Federal Reserve Restricts Certain Money Market Fund Access to Repo Facility* (May 2, 2023), available at <https://www.mayerbrown.com/en/perspectives-events/publications/2023/05/federal-reserve-restricts-certain-money-market-fund-access-to-repo-facility>.

<sup>97</sup> See *Statement Regarding the Policy on Counterparties for Market Operations and Reverse Repurchase Counterparties*, Fed. Rsrv. Bank N.Y. (Apr. 25, 2023), available at [https://www.newyorkfed.org/markets/opolicy/operating\\_policy\\_230425](https://www.newyorkfed.org/markets/opolicy/operating_policy_230425).



environment. Moreover, the increase in dollars flowing into government MMFs (blue line in Figure 1), when compared to the decrease in the amount of outstanding Treasury bills (green line in Figure 16) also contributed to their attractiveness as economic conditions improved after the Covid-19 pandemic (i.e., from January 2021 to April 2023).

The extent to which MMFs keep participating in RRP depends on the attractiveness of alternative assets like Treasury bills and dealer repos, and investors' willingness to keep dollars in the MMF space. For example, if the inverted yield curve normalizes, the Treasury bill supply increases, or the Federal Reserve raised their rates too high in an attempt to control inflation and are forced to reduce the federal funds rate as many market participants have speculated, then one might expect MMFs to move out of RRP and pivot into longer duration assets to lock in higher yields.<sup>98</sup> Indeed, this appears to be the case. As of June 2023, MMFs have been reallocating investments in the RRP to Treasury bills as the supply of Treasury bills increases,<sup>99</sup> anticipating a higher return as the longer end of the yield curve rises (yellow line in Figure 13) and expecting the Federal Reserve to start cutting rates in 2024. As of June 13, 2024, financial markets projected an 81% chance of a rate cut in November 2024.<sup>100</sup>

## b) FHLB Advances

As demonstrated above, one common destination for government MMFs to invest their inflows is the RRP, but they also frequently invest in securities issued by FHLBs, including floating rate securities. One reason is the availability of FHLB securities needed to fund FHLB advances (loans) to meet Basel III liquidity requirements on banks.<sup>101</sup> Another reason is that there are not enough Treasury assets to satisfy government MMFs' needs in a flight to liquidity event (e.g., the 2023 banking crisis), while also managing the interest rate risk and weighted average maturity regulatory requirements.<sup>102</sup> As such, the availability of FHLB securities should help meet any future growth in government MMFs.

The FHLBs consist of 11 regional banks throughout the U.S. They play a crucial role in supporting their 6,800 members by providing them with access to funding, liquidity, risk management tools, and community investment programs. These banks are government-sponsored enterprises that their members own by acquiring non-publicly traded stocks. One of

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<sup>98</sup> See, e.g., *US Rate Futures Price In Pause In June, July; See September Cut*, REUTERS (May 3, 2023), available at <https://www.reuters.com/markets/us/us-rate-futures-price-fed-pause-june-july-see-september-cut-2023-05-03/>.

<sup>99</sup> After the resolution of the debt ceiling impasse on June 1, 2023, the U.S. Treasury sold Treasury bills to replenish its cash balance.

<sup>100</sup> See the CME FedWatch Tool, available at <https://www.cmegroup.com/markets/interest-rates/cme-fedwatch-tool.html?redirect=/trading/interest-rates/countdown-to-fomc.html>.

<sup>101</sup> S. Sundaresan & K. Xiao, *Unintended Consequences of Post-Crisis Liquidity Regulation*, Sixth Annual Conference on Financial Market Regulation (Nov. 12, 2018), available at <https://ssrn.com/abstract=3281494> (retrieved from SSRN Elsevier database).

<sup>102</sup> S. Gissler, M. Macchiavelli & B. Narajabad, *Providing Safety In A Rush: How Did Shadow Banks Respond To A \$1 Trillion Shock* (Aug. 2, 2023), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3595417](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3595417) (retrieved from SSRN Elsevier database).

the functions of the FHLBs is to provide secured loans, known as advances, to their members for liquidity. As FHLB advances are secured by collateral, when a bank defaults, the FHLBs are repaid ahead of the FDIC.<sup>103</sup> In addition, FHLB securities benefit from an implicit federal guarantee,<sup>104</sup> eligibility for purchase by the Federal Reserve, and authorization of the U.S. Treasury to purchase up to \$4 billion in FHLB debt securities.

Although FHLBs have never incurred a loss on any of their advances, FHLBs, and by extension MMFs, are not without risk. For instance, FHLB Seattle had to merge with FHLB Des Moines due to losses from its mortgage-backed securities investments during the 2008 global financial crisis. Furthermore, to fund medium-term advances, FHLBs issue short-term debt obligations that investors (e.g., MMFs) purchase.<sup>105</sup> Large exposure to FHLB debt by MMFs could result in selling pressure if MMFs need to liquidate their holdings on short notice.<sup>106</sup> Moreover, the FHLBs could face higher funding costs, a decrease in income, and losses in asset value if their liabilities could not be rolled over easily. The Federal Housing Finance Agency (FHFA), which provides supervision over FLHBs, has made the overreliance of FHLBs on short-term funding a primary focus of reforms.<sup>107</sup>

FHLB advances increase (decrease) as the amount of FHLB securities held in MMFs increase (decrease) as shown in Figure 17. Both FHLB advances and MMF holdings of FHLB securities increased during the market dislocation from Covid-19 in March 2020 and the 2023 banking crisis, where they nearly tripled in size. As of the end of March 2023, the ratio of MMF holdings of FHLB securities to FHLB advances = \$685 billion/\$1045 billion = 66%, accounting for 2/3 of FHLB advances.

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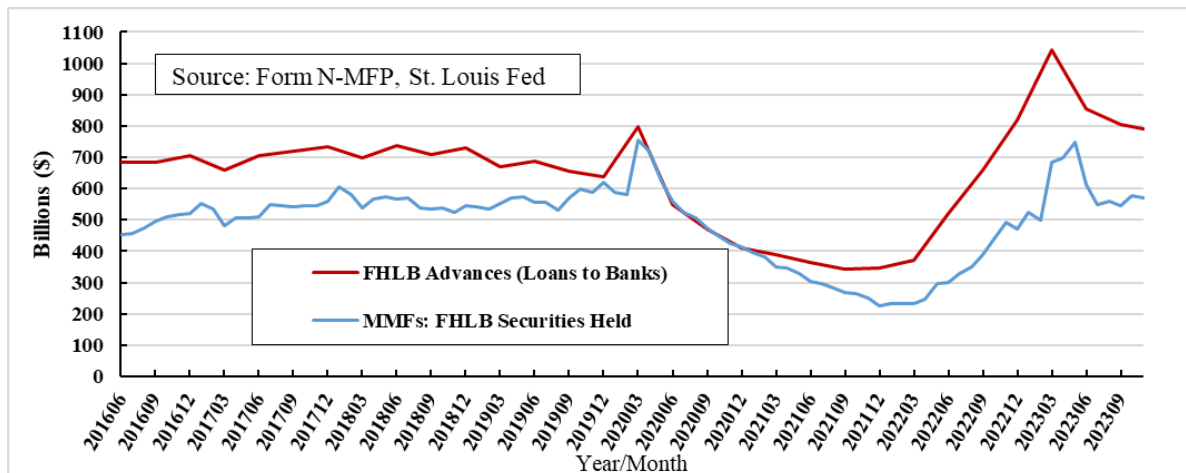
<sup>103</sup> Being paid before the FDIC increases the losses borne by the insurance fund, and ultimately by the taxpayer. See Rosalind L. Bennett et al., *Should The FDIC Worry About The FHLB?* (Fed. Deposit Ins. Corp., Ctr. for Fin. Rsch., Working Paper, No. 2005-10, 2005), available at <https://www.fdic.gov/analysis/cfr/2005/wp2005/2005-10.pdf>.

<sup>104</sup> See, e.g., CONG. BUDGET OFF., *FEDERAL SUBSIDIES AND THE HOUSING GSES* (2001), available at <https://www.cbo.gov/sites/default/files/107th-congress-2001-2002/reports/gses.pdf>.

<sup>105</sup> See Stefan Gissler & Borghan Narajabad, *The Increased Role of the Federal Home Loan Bank System in Funding Markets, Part 1: Background*, *FEDS Notes*, BD. OF GOVERNORS OF THE FED. RSRV. SYS. (Oct. 18, 2017), available at <https://www.federalreserve.gov/econres/notes/feds-notes/the-increased-role-of-the-federal-home-loan-bank-system-in-funding-markets-part-1-background-20171018.htm> (last updated Feb. 26, 2018).

<sup>106</sup> These risks were discussed at the 6<sup>th</sup> Annual Conference for Financial Regulation in 2019 hosted in part by the Commission. See, Financial Intermediary Track (host M. Paddrik), 6<sup>th</sup> Annual Conference of Financial Regulation, available at [https://www.sec.gov/dera/announcement/dera\\_event-050919\\_6th-annual-conference-fin-market-reg](https://www.sec.gov/dera/announcement/dera_event-050919_6th-annual-conference-fin-market-reg).

<sup>107</sup> See, e.g., Melvin L. Watt, Director, Fed. Hous. Fin. Agency at 2017 Federal Home Loan Bank Directors' Conference (May 23 2017), available at <https://www.fhfa.gov/news/speech/prepared-remarks-of-melvin-l.-watt-director-of-fhfa-at-2017-federal-home-loan-bank-directors>.



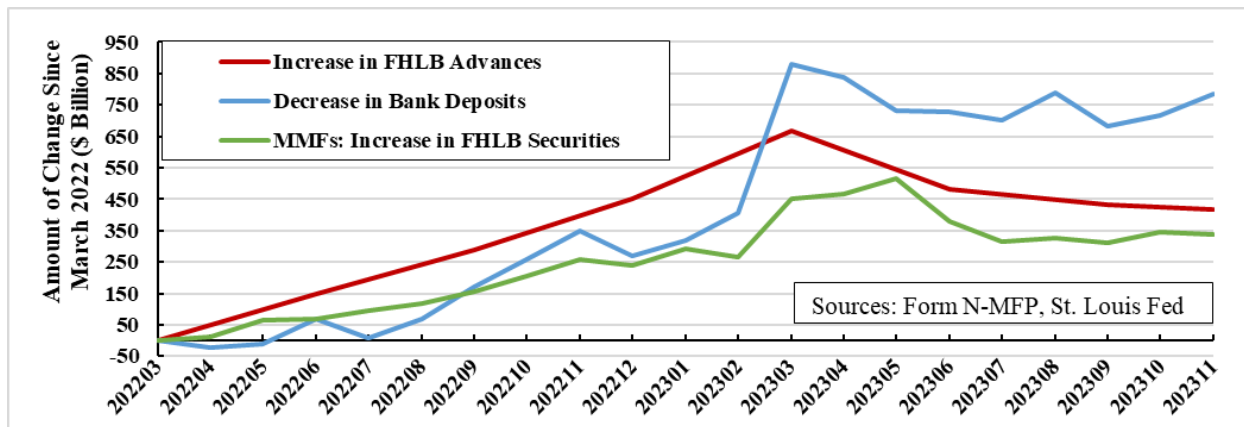
**Figure 17: The amount of FHLB advances and FHLB securities held by MMFs.<sup>108</sup>**

Buoyed by the FHLB advances, banks probably deferred asset sales or capital-raising efforts, hoping to ride out the 2023 banking crisis.<sup>109</sup> As of December 31, 2022, some of the biggest FHLB advances went to banks with solvency issues.<sup>110</sup> Moreover, during the 2023 banking crisis, bank depositors shifted the majority of their withdrawn deposits to MMFs. These MMFs then invested those dollars in FHLB securities, thereby providing the FHLBs with additional dollars to lend back to banks. In other words, depositors’ withdrawals provided liquidity to the same banks they were fleeing. Figure 18 shows the dollar amount of change over the last year relative to March 2022 in FHLB advances, total bank deposits, and MMF investments in FHLB debt and repos. Between July 2022 and March 2023, \$871 billion in bank deposits had left, of which \$356 billion was invested in FHLB securities held by MMFs. This suggests that approximately 40% of the withdrawn deposits were returned to banks as advances from FHLBs.

<sup>108</sup> Bd. of Governors of the Fed. Rsrv. Sys. (US), Government-Sponsored Enterprises; FHLB Advances; Asset, Level [BOGZ1FL403069330Q], retrieved on Apr. 30, 2023, from FRED, Fed. Rsrv. Bank of St. Louis (Apr. 30, 2023), available at <https://fred.stlouisfed.org/series/BOGZ1FL403069330Q>.

<sup>109</sup> See, S. Cecchetti, K. Schoenholtz & L. White, *Chapter 9: The FHLB Role in the SVB and Related Debacles, SVB and Beyond: The Banking Stress of 2023*, NYU Bus. Sch. (July 3, 2023).

<sup>110</sup> 2022 ANNUAL REPORT, FHLBANKS OFFICE OF FINANCE (Mar. 2023), available at [https://www.fhlb-of.com/ofweb\\_userWeb/resources/2022Q4CFR.pdf](https://www.fhlb-of.com/ofweb_userWeb/resources/2022Q4CFR.pdf).



**Figure 18: The amount of change since March 2022 in FHLB advances, bank deposits and MMF investments in FHLB securities.<sup>111</sup>**

Table 3 shows that FHLBs had \$45 billion in combined advances to Silicon Valley Bank, First Republic Bank, Signature Bank and Silvergate Bank as of December 31, 2022. All four banks went insolvent in 2023. Furthermore, 37% of the advances from the San Francisco FHLB branch were made to Silicon Valley Bank, First Republic Bank, and Silvergate Bank.<sup>112</sup> The FHFA stated that one of the four failed banks paid off its advances before insolvency, two were paid off by the FDIC, and the liabilities of the fourth were assumed by the purchasing bank.<sup>113</sup>

**Table 3: FHLB Advances to banks with Solvency Issues.<sup>114</sup>**

Bank	Advances from FHLB to Banks with Solvency Issues as of Dec. 2022 (Billions)		Advances from FHLB to Banks with Solvency Issues as of March 2023 (Billions)	
	San Francisco	New York	San Francisco	New York
Silicon Valley	15.0			
First Republic	14.0		28.1	
Signature		11.3		10.2
Silvergate	4.3			
<b>Total</b>	<b>33.3</b>	<b>11.3</b>	<b>28.1</b>	<b>10.2</b>

<sup>111</sup> See *supra* note 108.

<sup>112</sup> See *supra* note 110.

<sup>113</sup> See FED. HOUS. FIN. AGENCY, FHLBANK AT 100, FOCUSING ON THE FUTURE (2023), available at <https://www.fhfa.gov/PolicyProgramsResearch/Programs/Pages/FHLBank-Focusing-on-the-Future.aspx> (“The broader financial system, however, incurred losses because of these failures, highlighting the need for greater focus by the FHLBanks on evaluating member creditworthiness and better coordination with their members’ primary regulators when a member’s financial condition is deteriorating.”).

<sup>114</sup> 2022 ANNUAL REPORT, FHLBANKS OFFICE OF FINANCE (Mar. 2023), available at [https://www.fhfb-of.com/ofweb\\_userWeb/resources/2022Q4CFR.pdf](https://www.fhfb-of.com/ofweb_userWeb/resources/2022Q4CFR.pdf); FHLBANKS OFFICE OF FINANCE, 2023, Q1 REPORT (May 15, 2023), available at [https://www.fhfb-of.com/ofweb\\_userWeb/resources/2023Q1CFR.pdf](https://www.fhfb-of.com/ofweb_userWeb/resources/2023Q1CFR.pdf).

Press reports also state that banks continued turning to FHLBs after December 2022 during the 2023 banking crisis for loans. For example, Charles Schwab increased its short-term borrowing from FHLBs over the 2023Q1 from \$12.5 billion to \$45 billion to offset the \$41 billion that depositors withdrew.<sup>115</sup> If the 2023 banking crisis widens in 2024 as community banks start grappling with commercial real estate charge-offs and write-downs as the press speculates,<sup>116</sup> monitoring the amount FHLB advances to failing banks may give a preview for the potential for continued growth in MMFs. More specifically, will depositors continue to move their deposits into MMFs, or will they go somewhere else (e.g., bigger banks or into Treasuries)? Will MMFs continue to purchase FHLB debt securities, or will they have to shift to an alternative security due to FHFA reforms addressing FHLBs proclivity to provide advances to distressed member banks shortly before insolvency?<sup>117</sup>

## V. Outlook

Past growth of the MMF industry is closely tied to that of government MMFs. After several crises and updated regulatory reforms, government MMFs grew from \$408 billion and 20% of the industry to \$4,920 billion and 77% of the industry in two decades. Likewise, the MMF industry has grown from \$2.2 trillion to \$6.4 trillion. By connecting past events with influences shaping MMF growth, this report underscored the intricate interplay between economical and regulatory processes and MMF dynamics, offering a lens through which to view both the MMF industry's past and future growth.

Based on historical trends, the MMF industry, and government MMFs in particular, are expected to continue to grow for the rest of 2024 and into 2025. There are several reasons for this, including the historically slow flow of investors into MMFs resulting from the Federal Reserve's interest rate increases, high yield spreads between MMFs and bank rates, and institutional investors diversifying their deposits in response to the 2023 banking crisis.

The impasse over the June 2023 debt ceiling did not impact the growth of MMFs. However, during the 2023 banking crisis, depositors shifted most of their withdrawn deposits to MMFs, prompting MMFs to purchase additional FHLB securities. In turn, providing FHLBs with additional dollars to lend back to banks. Around 40% of the withdrawn deposits were returned to banks as advances from the FHLBs through MMFs. A further escalation of the 2023 banking crisis as community banks grapple with commercial real estate charge-offs and write-downs could shift more deposits to government MMFs.

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<sup>115</sup> See Lorenzo Migliorato, *Schwab Turns to Costly FHLB Advances as Deposits Drop*, RISK.NET (Apr. 19, 2023), available at <https://www.risk.net/risk-quantum/7956520/schwab-turns-to-costly-fhlb-advances-as-deposits-drop>.

<sup>116</sup> See, e.g., Mark Chandler & Nancy Seelye, *Small Banks Are Teetering. Expect More Failures.*, BARRON'S (Feb. 8, 2024) (retrieved from Factiva database).

<sup>117</sup> See *supra* note 113.

In addition, there are cross currents that could slow or reverse the growth of the MMF industry. For example, a reversal of the inverted yield curve would make the short-term securities (e.g., reverse repos from the RRP) that MMFs invest in less attractive. A decrease in the federal funds rate may also lead investors to alternative securities with longer maturities and higher yields. Furthermore, it seems possible that in the future, if another near-zero interest rate environment follows the pause in interest rates hikes, investors may leave MMFs as they did in 2009 following great financial crisis and briefly at the end of 2020 following the March 2020 market dislocation. Finally, the 2023 MMF regulatory reforms could continue to lead some investors to reallocate their investment towards government MMF or withdraw from MMFs, while not very likely, in favor of other cash management tools.