Regulating money market funds in the US and in the EU. Open issues and new perspectives*

Filippo Annunziata**/ Edoardo Compagnon***

Abstract: The article examines the regulatory architecture governing money market funds (MMFs) in the United States and the European Union, adopting a comparative and functional perspective that situates MMFs as "special" mutual funds combining investment-fund features with money-like characteristics. After reconstructing the historical evolution of US regulation—from the adoption of Rule 2a-7 to the 2023 amendments prompted by the COVID-19 market turmoil—the analysis contrasts it with the EU framework established by Regulation (EU) 2017/1131, highlighting both convergences and persistent divergences in regulatory design. Particular attention is devoted to unresolved issues within the European MMF regime, including the role of credit ratings and internal credit assessments, the prudential function of "know-your-customer" policies, stress-testing obligations, and the categorical prohibition of external support. The article argues that these differences reflect not only distinct historical trajectories but also deeper systemic and institutional choices concerning financial stability and the boundary between banking and asset management. Finally, building on the functional parallels between MMFs and certain crypto-assets, the article explores the extent to which the prudential logic embedded in the MMFR could inform future developments in the regulation of electronic money tokens and asset-referenced tokens under MiCAR, especially in addressing liquidity risk and run-like dynamics at scale.

* Although the paper is the result of a joint effort by the authors, Chapters 1, 5, 6, 7 are mainly attributable to Filippo Annunziata, while Chapters 2, 3 and 4 are mainly attributable to Edoardo Compagnoni. A version of his article was previously published in Bocconi Legal Studies Research Paper Series (December 2025) and in Banking and Financial Regulation Observatory Legal Paper (No. 1/2025).

** Full professor of Financial Market Law at Bocconi University, Milan.

*** Fellow of the Banking and Financial Regulation Observatory (ORBF) at the University of Brescia; PhD student in Legal Studies, curriculum in Business and Social Law at Bocconi University, Milan.

DOI: 10.5771/2752-177X-2025-3-211

A. Introduction: MMFs as "special" mutual funds

Money market funds (MMFs) are a distinctive category of open-ended investment funds that pool capital with the objective of providing investors with high liquidity, capital preservation and returns broadly aligned with short-term money market instruments. By investing predominantly in low-risk, short-dated and highly liquid debt securities, MMFs have long been used by both retail and institutional investors, as well as by non-financial corporations, as vehicles for cash management and temporary liquidity storage. Owing to their withdrawal-at-will feature and their historically stable net asset value (NAV), MMFs have often been perceived as functional substitutes for bank deposits, notwithstanding their formal classification as collective investment schemes.

The role of MMFs has become increasingly central in recent years as interest rates have risen. This development has led to a notable increase in the profitability of these investment vehicles and, accordingly, to growing investor interest[1].

According to the latest figures available, global MMFs assets under management (AUM) increased by 15% year-on-year, reaching USD 10.6 trillion at end of 2024, following a 7.7% increase in 2023. That trend was primarily driven by increased inflows resulting from higher MMF yields relative to bank deposits, as well as, to a lesser extent, by the March 2023 banking turmoil in the United States and Switzerland. As illustrated in Chart 1, the majority of these assets (52%) were domiciled in the United States, with a smaller proportion located in Europe, China and other parts of the world[2].

1 From 2022 to 2024, the Money Market Funds industry recorded a net inflow of 9.6%. This growth was driven by inflows into USD and EUR MMFs, which received flows amounting to 14 % and 12 % of their NAV, respectively. See ESMA, TVR Risk Monitor Report on Trends, Risks and Vulnerabilities, 31 January 2024.

2 See FSB, Thematic Review on Money Market Fund Reforms, 27 February 2024 and FSB, Global Monitoring Report on Non-Bank Financial Intermediation 2024, 16 December 2024 and Fitch Ratings, Global Money Market Fund Update: 2025, 21 January 2025. In its 2024 document, the FSB concludes that, despite meaningful regulatory efforts since the 2021 FSB Policy Proposals, money market funds (MMFs) continue to exhibit structural vulnerabilities that can pose financial stability risks under stress, primarily stemming from liquidity transformation and first-mover advantages. Progress in implementing reforms has been uneven across jurisdictions, with some authorities strengthening liquidity requirements or liquidity management tools, while others are still developing or consulting on reforms. The review highlights that tools aimed at passing redemption costs to redeeming investors and reducing threshold effects are more widely available than measures designed to absorb losses, which remain rare. Persistent heterogeneity in regulatory approaches, combined with data gaps and significant cross-border MMF activity, raises concerns about regulatory arbitrage and spillovers. Overall, the FSB underscores the need for further, more consistent implementation and calibration of the policy toolkit to enhance MMF resilience and reduce reliance on extraordinary central bank interventions during periods of market stress, while foreshadowing a fuller effectiveness assessment in 2026.

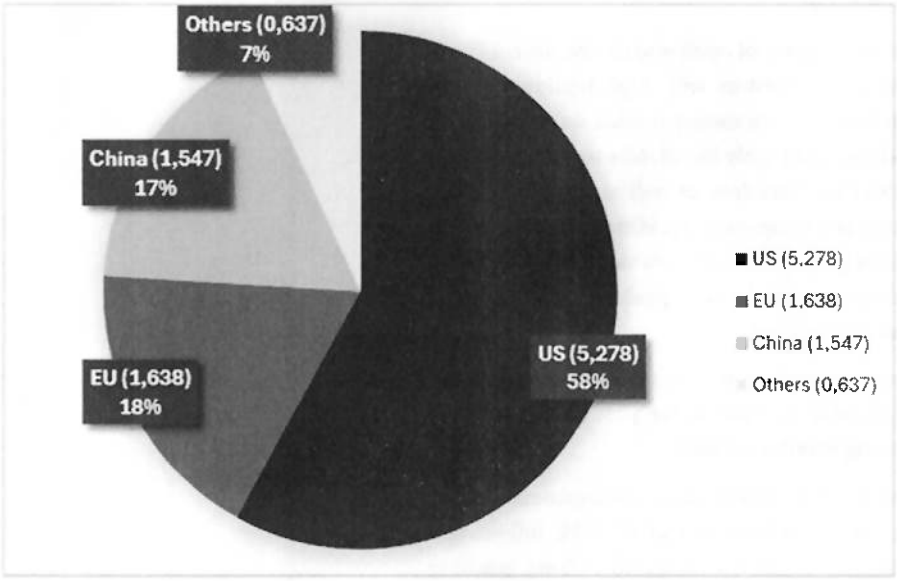

Chart 1 – MMF Asset Under Management (in trillions $) according to their location[3].

The duality of MMFs lies at the core of the regulatory challenge they pose. Unlike bank deposits, MMF shares do not constitute a claim guaranteed at par by a credit institution and are not backed by deposit insurance schemes. At the same time, unlike ordinary investment funds, MMFs are expected—both by investors and by the broader financial system—to provide immediate liquidity under virtually all market conditions. This structural ambiguity, often captured by reference to the "money-like" or "moneyness" characteristics of MMFs, generates an inherent tension between private ordering and public interest, investor protection and systemic stability, market discipline and implicit guarantees.

One feature that brings money market funds conceptually closer to bank deposits is that they typically seek to maintain a constant net asset value (NAV). This stands in contrast to other investment funds, whose NAV may fluctuate daily as a result of market-driven variations in the value of their assets. In practice, the constant NAV is typically set at $1.00 per share in the US and €1.00 in the EU. By conveying a sense of money equivalence (the so-called "moneyness") to investors, the constant NAV constitutes one of the defining and most distinctive features of MMFs[4].

3 Our elaboration of the FSB, Global Monitoring Report on Non-Bank Financial Intermediation 2023, 18 December 2023.

4 See Federico Fornasari, "De-Moneynising" MMF Shares: Third Party Support in the United States and the European Union, N.Y.U. J. Int'l L. & Pol. 2019, 1315.

In order to maintain a fixed net asset value per share, MMFs employ amortised cost valuation methods, rather than market-based valuation, to price the fund's assets. Under the amortised cost method, securities are valued at their acquisition cost, adjusted for the amortisation of premiums or the accretion of discounts[5]. In this respect, discount securities are recorded in the fund's portfolio at their purchase cost, which is progressively increased by the amount of the daily interest accrual (i.e. the discount divided by the residual maturity of the security)[6]. Subsequently, the accrued interest is periodically declared and distributed to MMF unit holders so as to maintain a stable net asset value[7]. As a result, the valuation may diverge from the current market value of the underlying securities.

The fragility of this equilibrium has been repeatedly exposed during periods of financial stress. MMFs are vulnerable to large-scale and sudden redemption waves and may face difficulties in liquidating portfolio assets without incurring significant losses. When such dynamics materialise, they tend to produce a first-mover advantage, incentivising early redemptions and amplifying run-like behaviour. As demonstrated during the global financial crisis of 2008 and again during the market turmoil of March 2020, these dynamics can rapidly propagate from the MMF sector to short-term funding markets, with adverse spillovers for banks, corporations and, ultimately, the real economy.

Against this background, MMFs may be understood as a regulatory boundary object: formally situated within the asset-management perimeter, yet functionally intertwined with monetary transmission, payment-like liquidity management and systemic risk. The regulation of MMFs therefore provides a revealing lens through which to observe how different jurisdictions draw—and continuously redraw—the boundary between banking and non-bank financial intermediation.

In academic writings and market practice, MMFs are typically classified according to: (*i*) the manner in which their NAV is calculated, and (*ii*) the types of assets in which they invest.

Overall, this results in two principal categories of MMFs: government funds and prime funds. Government funds invest the majority of their assets in government and agency securities, while Prime funds invest in private, unsecured debt instruments, such as certificates of deposit (CDs).

Following these preliminary remarks on the functioning of MMFs, it is important to note that their distinctive nature lies not only in the "money-like" characteristics they convey,

5 See Jonathan W. Lim, Untangling the Money Market Fund Problem: A Public-Private Liquidity Fund Proposal, Stan. J.L. Bus. & Fin. 2013, 71.

6 Discount securities, such as Treasury Bills or commercial paper, do not pay explicit periodic interest. Instead, the interest is the implicit difference between purchase price and redemption price at maturity (i.e., the discount).

7 See IMMFA, The use of amortised cost accounting by money market funds, January 2013.

but also in their significant macroeconomic relevance. On the one hand, they serve as an essential source of short-term funding for governments, corporations, and banks[8]. On the other hand, they function as a conduit for the transmission of monetary policy[9]. Consequently, the regulation of these "special" mutual funds is concerned with ensuring their stability and efficient functioning in light of broader macroeconomic objectives. Indeed, a liquidity crisis in the MMF industry could result in the propagation of adverse effects across the wider financial system, with a detrimental impact on the real economy.

This article adopts a comparative and functional perspective to examine the regulatory architecture governing MMFs in the United States and in the European Union. While both regimes are animated by a shared concern with run risk and financial stability, they reflect markedly different institutional choices. In the United States, a predominantly market-based financial system has favoured a regulatory approach that combines ex ante constraints with a continued openness to discretionary tools and ex post stabilisation mechanisms. By contrast, within a more bank-centric European financial architecture, Regulation (EU) 2017/1131 on money market funds (the MMFR) embodies a distinctly prudential logic, relying heavily on ex ante portfolio constraints, behavioural anticipation and the categorical exclusion of implicit support in order to prevent contagion to the banking sector.

The first part of the article reconstructs the historical evolution of MMF regulation in the United States, from the adoption of Rule 2a-7 to the most recent amendments introduced in 2023 in response to the COVID-19 market turmoil. It then examines the European MMF regime established by the MMFR, situating it within the broader EU approach to shadow banking and non-bank financial intermediation. Building on this comparative groundwork, the article identifies and critically assesses a number of unresolved structural tensions within the European framework, focusing in particular on internal credit assessments, "know-your-customer" policies, stress-testing obligations and the prohibition of external support.

Finally, the article extends the analysis beyond the MMF sector to consider whether similar regulatory dilemmas are re-emerging in new technological forms. In particular, it explores the functional parallels between MMFs and certain electronic money tokens and asset-referenced tokens regulated under the Markets in Crypto-Assets Regulation (MiCAR). By doing so, the article argues that the MMFR should not be viewed as a self-contained or final settlement, but rather as a partial and evolving response to a recurring financial-stability problem that transcends formal legal classifications and is

8 See Iñaki Aldasoro/Sebastian Doerr, Who borrows from money market funds?, BIS Quarterly Review 2023, 47 and Samuel G. Hanson/David S. Scharfstein/Adi Sunderam, An Evaluation of Money Market Fund Reform Proposals, IMF Economic Review 2015, 984.

9 Gary Gorton *et al.*, Regulating the Shadow Banking System, BPEA 2010, 261, Kairong Xiao, Monetary transmission through shadow banks, Review of Financial Studies 2020, 2379 and Marco Cipriani/Jeff Gortmaker/Gabriele La Spada, Monetary Policy Transmission and the Size of the Money Market Fund Industry, Federal Reserve Bank of New York, 20 November 2019.

likely to reappear wherever non-bank entities issue instruments perceived as safe, liquid and redeemable at par.

Since their inception in the 1970s, money market funds have traditionally been regarded as an alternative to bank deposits. Nevertheless, the two instruments are markedly different. Like other investment funds, and differently from bank deposits, MMFs do not provide a right of full redemption to their unit holders. On the contrary, investors are exposed to the ordinary financial risk of depreciation of the assets in which the fund is invested[10]. Moreover, MMFs are subject to two broad and interconnected types of vulnerabilities: they are susceptible to rapid and disruptive redemptions and may face challenges in liquidating the assets in a timely manner to meet redemption requests.

It is evident, however, that this evaluation technique is only effective when applied to short-term and highly liquid debt instruments, and provided that financial market conditions remain stable over time. For this reason, as will be seen, MMFs are frequently prohibited from utilising the amortised cost method to value their assets; instead, they are required to employ a mark-to-market accounting approach. As a consequence, they may be unable to operate with a constant NAV and must instead adopt a floating NAV, as is the case for other categories of investment funds.

In light of the global expansion of MMFs, any consideration of their regulation ought to be approached from a comparative perspective. Therefore, this article is divided into two parts. The first provides a brief overview of US and European regulation of MMFs, while the second advances a set of proposals aimed at enhancing the stability of this "special" type of mutual fund.

In the initial part, the article offers a concise overview of the historical evolution of the US MMF regulation (Section 2.1), followed by an examination of the European regulatory framework for MMFs (Sections 3 and 3.1). These analyses serve as a starting point for the forward-looking part of the article, in which a number of structural issues and open questions within the European MMF regime are examined in greater depth (Section 4). In particular, the analysis focuses on issues such as credit ratings (Section 4.1), "Know-Your-Customer" policies (Section 4.2), stress testing (Section 4.3) or external support (Section 4.4) which form the basis for a comparative assessment of the two systems (Section 5). Finally, the article argues that, looking ahead, the provisions applicable to MMFs could also be transposed into the MiCA Regulation, with a view to enhancing the effective security and stability of so-called stablecoins.

10 ICI, Money market funds in 2012 Money Market Funds Are Not Banks, 14 February 2012.

B. The US Regulation on MMFs

I. The evolution of US Regulation on MMFs

Given the long-standing presence of MMFs in the US, understanding their regulation requires a brief overview of its historical evolution. The first MMF, Reserve Primary, was established in 1970 by Bruce R. Bent and Henry B.R. Brown[11]. This unique mutual fund was designed to provide investors with access to market-based interest rates and to offer a more attractive alternative to traditional bank deposits. Indeed, during the 1970s, Regulation Q capped the interests that banks could pay on savings at 4.5%, while the market rate on three-month certificates of deposit ranged from approximately 5.5% to 9.0% throughout the year, with annual inflation hovering around 6%[12].

US MMFs were thus initially conceived as a more profitable alternative to bank deposits, while being structured to closely resemble cash-like instruments. To that end, they were designed with investor-friendly features such as a fixed $1 NAV and on-demand redemption rights. As a result, throughout the 1970s, investment in MMFs was widely perceived as offering the same core benefits as bank deposits—namely, safety and liquidity—while delivering superior market returns, since, although characterised by a constant NAV, MMFs distribute a periodic return to their shareholders. This combination of features largely explains their rapid and widespread diffusion[13].

In order to maintain the NAV at a constant level of $1 per share, MMFs valued their assets using the amortised cost method, rather than market value[14]. However, the possibility that redemption requests could be satisfied by a fixed NAV not fully supported by the fund's underlying assets exposed MMFs to potentially significant stability concerns. In particular, if the assets held by the fund were to experience material losses in value, the fixed NAV mechanism could result in unequal treatment among investors, giving rise to the so-called "first-mover advantage": investors who redeem their shares early are paid in full, to the detriment of remaining investors, who may be left with diminished or no assets. In response to these concerns, in 1977 the SEC prohibited MMF managers from

11 Reserve Primary Fund has been offered to investors since 1971, and at that time, the only rule it had to comply with was the SEC registration process.

12 Timothy Q. Cook, Regulation Q and the Behavior of Savings and Small Time Deposits at Commercial Banks and Thrift Institutions, Federal Reserve Bank of Richmond Economic Review 1978, 24.

13 See SEC Historical Society, Developments in the Mutual Fund Industry—Money Market Funds, Edited Transcript 1, 29 March 2005, "[M]oney market funds had actually first started in 1974, but by 1980, they had reached only about $60 or $70 billion. However, the spur of high interest rates was a tremendous push, and in the year 1981 over $100 billion was added to money market funds" (statement of David Silver).

14 Under the amortized cost method, assets are initially valued at their cost (*i.e.*, the purchase price); thereafter, the fund manager adjusts the amount of interest income accrued each day over the life of the investment to account for the difference between the initial cost of the investment and the amount payable at maturity. If the amount payable at maturity exceeds the initial cost (a discount), the daily accrual is increased; if the initial cost exceeds the amount payable at maturity (a premium), the daily accrual is decreased. See ICI, History of Rule 2a-7 - The Evolution of Money Market Fund Regulation, 1 March 2012.

using amortised cost valuation, except for securities with a remaining maturity of 60 days or less[15].

Notwithstanding this formal prohibition, the SEC routinely granted exemptions to funds that requested them, on the grounds that this amortised cost valuation, if properly applied, could serve investor protection objectives.[16] In order to formalise this evolving system of rules and exemptions, the Commission adopted Rule 2a-7 in July 1983, governing MMFs under the Investment Company Act (ICA) of 1940[17]. Rule 2a-7 authorised the use of amortised cost valuation subject to a series of risk-limiting conditions, including requirements relating to diversification, liquidity and maturity profile of the fund's assets.

The 2008 financial crisis exposed the limitations of the then-current version of Rule 2a-7 and revealed the structural vulnerability of MMFs to the risk of runs[18]. Although MMFs did not originate the crisis, they contributed to its intensification and to its propagation within short-term funding markets, ultimately facing a liquidity shock that severely affected both corporations and financial institutions[19]. Following the Lehman Brothers bankruptcy in mid-September 2008, MMFs were required to write down Lehman-related assets to zero, thereby reducing their NAV[20]. Upon learning about these devaluations, Institutional investors reacted by redeeming large volumes of their investments (approximately $300 billion in a week)[21]. In order to meet these extraordinary redemption requests, funds were forced to liquidate assets at fire sale prices to raise the necessary cash. These massive divestments produced two interrelated effects: from a microeconomic perspective, the NAV of several MMFs fell below the $1 threshold, causing them to "break the buck"[22]. From a macroeconomic standpoint, the widespread asset sales led to a sharp contraction in short-term money market credit, thereby transmitting financial stress to the real economy, including private corporations.

The vulnerabilities of MMFs revealed during the 2008 crisis prompted the SEC to adopt new rules aimed at making MMFs more resilient and less susceptible to runs. In 2010,

15 See SEC, Valuation of Debt Instruments by Money Market Funds and Certain Other Open-End Investment Companies, 31 May 1977, Release No. IC-9786.

16 See Jill Fisch/Eric Roiter, A Floating NAV for Money Market Funds: Fix or Fantasy?, University of Illinois Law Review 2012, 1003.

17 SEC Rule 2a-7 remains the current regulatory reference for MMFs, continually updated after each crisis period that reveals the weaknesses in the previous version.

18 See Jeffrey N. Gordon/Christopher M. Gandia, Money Market Funds Run Risk: Will Floating Net Asset Value Fix the Problem?, Columbia Business Law Review 2014, 313.

19 See U.S. Department of the Treasury, Report of the president's working group on financial markets: money market fund reform options, 21 October 2010.

20 At the time of the bankruptcy, Reserve Primary Fund had $785 million invested in Lehman's commercial paper (amounting to only 1.2% of its portfolio, well below the 5% single-issuer maximum set by Rule 2a-7), and their devaluation led to a drop in the fund's NAV from $1.00 to $0.97.

21 See ICI, Report of the Money Market Working Group, 17 March 2009.

22 This expression refers to a situation in which a fund is no longer able to refund the (fixed) NAV to shareholders and results when the market value of the assets in which the fund invested is lower than their nominal value. See William A. Birdthistle, Breaking Bucks in Money Market Funds, Wisconsin Law Review 2010, 1155.

amendments to Rule 2a-7 aimed to increase MMFs' liquidity and reduce their exposure to interest rates by requiring them to maintain at least a 10% daily and 30% weekly asset liquidity were introduced. In practice, this implied that 10% of the portfolio was required to be held in cash or in securities convertible into cash within one business day, while at least 30% had to consist of cash or in securities convertible into cash within five business days[23]. In addition, the maximum weighted average maturity (WAM) of MMF portfolios was reduced from 90 to 60 days, thereby curtailing interest rate risk. The 2010 reform also introduced mandatory stress-testing requirements, designed to assess MMFs' ability to maintain a stable NAV under adverse market conditions and to anticipate the risk of "breaking the buck".

The effectiveness of the 2010 amendments to Rule 2a-7 was subsequently demonstrated during the 2011 Eurozone sovereign debt crisis, when MMFs were able to withstand significant redemption pressures[24]. Nevertheless, in light of the severity of the 2008 episode, investor confidence in the MMFs sector remained fragile. This led to renewed debate over the need for further regulatory intervention. Against this background, the Financial Stability Oversight Council (FSOC) – established to identify and monitor risks to US financial stability[25]– pressed the SEC to further strengthen the MMF regime.

The subsequent regulatory initiative sought to mitigate interest rate, credit and liquidity risks of money market fund portfolios, thereby addressing investor runs and preserving the economic benefits of MMFs. In particular, regulators emphasised the systemic relevance of MMFs, both as an immediate transmission channel for monetary policy and as a key source of short-term financing for governments, banks, and corporations through their investments in public and private debt instruments.

Finally, on July 23, 2014, the SEC adopted a further reform of Rule 2a-7, marking one of the most significant structural shifts in the evolution of MMF regulation[26]. The reform focused primarily on strengthening so-called "prime MMFs", which mainly invest in private debt instruments[27], and on improving safeguards against investor runs. Its most notable innovation was the adoption of a differentiated approach, under which MMFs are subject to distinct requirements depending on their investment strategy[28].

23 See SEC, SEC Approves Money Market Fund Reforms to Better Protect Investors, 27 January 2010.
24 See ICI, ICI Analysis of SEC's 2010 Money Market Fund Reforms: Tested, Working, and Have Enhanced Financial Stability, 2013.
25 See Dodd-Frank Wall Street Reform and Consumer Protection Act, 21 July 2010, § 111.
26 See SEC, SEC Adopts Money Market Fund Reform Rules, 23 July 2014.
27 Prime MMFs can invest in government securities and municipal bonds but also securities issued by banks, corporations and other non-government entities.
28 There are three main categories of MMFs, each facing some restrictions on the types of securities that they can hold. Government funds invest in government debt (such as Treasury and agency debt) and repurchase agreements backed by government debt. Tax-exempt funds focus on municipal and state debt. Prime funds primarily invest in high-quality, short-term private debt, including time deposits, commercial paper, and certificates of deposit.

However, the most relevant aspect of this reform lies in the explicit correlation established between each investment strategy—and, accordingly, each category of money market fund—and the method used to determine its net asset value. More specifically, the two cornerstones of this amendment were: (*i*) the transition from a *fixed* to a floating NAV for institutional funds, and (*ii*) the introduction of liquidity fees and redemption gates for all prime funds[29].

With regard to the first of these innovations, the 2014 reform required institutional prime MMFs to move from a fixed NAV to a floating NAV by valuing their portfolio securities on the basis of market-based pricing, rather than amortised cost accounting. This measure was intended to reduce incentives for pre-emptive redemptions driven by the prospect of a first-mover advantage. Moreover, the adoption of a floating NAV also serves as an implicit signalling mechanism, alerting investors that MMFs are not risk-free instruments; rather, like other mutual funds, their share prices may fluctuate in response to changes in the market value of the underlying portfolio.

A second innovation introduced by the 2014 revision of Rule 2a-7 consisted in equipping fund managers with additional tools to manage episodes of heavy redemptions, notably liquidity fees and redemption gates. Redemption gates allow MMF managers to temporarily suspend investors' redemption rights where the fund's weekly liquidity level falls below a predetermined threshold. In doing so, MMFs are not required to immediately generate liquidity to meet redemption requests, but may instead dispose of assets in an orderly manner, thereby maximising their value. This mechanism consequently mitigates the fire-sale dynamics typically associated with investor runs. Similarly, liquidity fees increase the cost of redeeming shares during periods of liquidity stress. Such fees are designed to internalise the liquidity costs borne by the fund when assets must be liquidated rapidly to meet redemptions.

From the foregoing analysis, it emerges clearly that the primary objective of the 2014 amendments to Rule 2a-7 was to attenuate the first-mover advantage and thereby reduce the likelihood of investor runs. However, MMF constitutive documents frequently include provisions under which managers commit ex ante not to apply liquidity fees or redemption gates, with the aim of enhancing the fund's attractiveness to investors. As a result, although these mechanisms constitute effective safeguards in principle, they have been sparsely employed in practice, owing to concerns that their activation may itself trigger adverse investor reactions.

Notwithstanding these safeguards, the removal of the "monetary" features traditionally associated with MMF shares—namely the fixed $1 NAV and unconditional on-demand redemption—prompted withdrawals by investors who had previously regarded MMFs primarily as cash management instruments rather than investment products. Indeed,

29 See SEC, Money Market Fund Reform; Amendments to Form PF, 14 October 2014, Release No. IC-31166.

as demonstrated by several empirical studies, the 2014 reform led to a significant reallocation of assets by institutional investors—the segment most directly affected by the introduction of a floating NAV—from US MMFs to European MMFs or alternative treasury management vehicles[30].

A further element of the 2014 reform concerned the enhancement of stress -testing requirements. Under the revised framework, MMF managers are required to establish formal stress-testing procedures and to conduct regular tests designed to assess the impact of adverse scenarios—such as sudden increases in interest rates—on both the fund's NAV and its liquidity position.

Although rudimentary stress-testing obligations had already been introduced under the 2010 reform, experience soon revealed their inadequacy. The 2014 amendment therefore mandates the implementation of a more structured and prescriptive stress-testing framework. In particular, MMFs are required to evaluate their ability to maintain weekly liquid assets equal to at least 10% of total assets, under a range of hypothetical scenarios, including sharp interest rate movements or the default of one or more portfolio securities.

II. The current US Regulation on MMFs: the 2023 amendment to Rule 2a-7

Another event that put pressure on the stability of money market funds was the Covid-19 pandemic crisis. As the pandemic spread, a significant contraction in capital markets led many institutional investors to redeem their MMF investments, raising concerns over a scenario reminiscent of the 2008 crisis, in which some MMFs had broken the buck. during the two-week period starting on 9 March 2020, approximately USD 96 billion—equivalent to around 30% of assets under management—were withdrawn from institutional prime MMFs[31].

To avert this outcome, the Federal Reserve established the Money Market Mutual Fund Liquidity Facility (MMLF)[32]. This facility provided loans to eligible financial institutions, secured by high-quality assets purchased by those institutions from MMFs, thereby allowing funds to dispose of assets without incurring losses[33].

30 See Lei Li *et al.*, Liquidity restrictions, runs, and central bank interventions: Evidence from money market funds, Review of Financial Studies 2021, 5402; Daniel Fricke/Stefan Greppmair/Karol Paludkiewicz, You can't always get what you want (where you want it): Cross-border effects of the US money market fund reform, Journal of International Economics 2024.

31 Source: iMoneyNet's Money Fund Analyzer.

32 See FED, Federal Reserve Board broadens program of support for the flow of credit to households and businesses by establishing a Money Market Mutual Fund Liquidity Facility, 18 March 2020 and Kenechukwu Anadu *et al.*, The Money Market Mutual Fund Liquidity Facility, NY FED Economic Policy Review 2022, 139.

33 The MMLF was created under the authority of Section 13(3) of the Federal Reserve Act, allowing the Federal Reserve to create facilities with broad-based eligibility to lend to any market participant in case of "unusual and exigent circumstances".

Thus, absent the Federal Reserve's intervention, potentially devastating consequences for the stability of MMFs and for investor confidence would likely have materialised on this occasion as well. This episode prompted the SEC to adopt a further amendment to Rule 2a-7, which constitutes the current regulatory framework as of 12 July 2023[34].

The key features of the 2023 amendment to Money Market fund Regulation include:

- the elimination of redemption gates;
- the introduction of a new mandatory liquidity fee for institutional funds;
- the strengthening of daily and weekly liquid asset requirements[35];
- the introduction of enhanced reporting obligations[36]; and
- the introduction of a reverse distribution mechanism (RDM), or similar "share cancellation" mechanisms, to preserve a stable NAV even in negative interest rate environments[37].

More Specifically, the 2023 amendment to Rule 2a-7 provides that, on the one hand, MMF managers may no longer suspend redemption requests, while, on the other hand, they are required to mandatorily impose liquidity fees during periods of significant liquidity stress.

By contrast, the reverse distribution mechanism allows for the allocation of negative interest rates —arising in particular from investments in euro-denominated securities — to shareholders during periods of negative interest rates, as experienced in the Eurozone between 2015 and 2022. The mechanism operates through the automatic redemption and cancellation of a corresponding number of shares held by an investor, with the aim of offsetting the negative yield generated by the fund's investments.

These amendments do not apply uniformly to all MMFs. Rather, in accordance with the principle of proportionality, the Commission classified Money Market Funds into distinct "classes" based on both the category of investors they target (institutional versus retail) and the types of assets in which they are permitted to invest[38]. As a result, the current US regulatory framework for MMFs can be summarised in the table below, which sets out

34 See SEC, Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A, 12 July 2023, Release No. IC-34959.

35 See Rule 2a-7(d)(4)(ii) and (iii), which increase the minimum levels of daily and weekly liquid assets for all MMFs from 10% and 30% to 25% and 50%, respectively.

36 In particular, a fund experiencing a liquidity threshold event is required to report: (1) the initial date on which the fund fell below either the 25% weekly liquid assets or the 12.5% daily liquid assets threshold; (2) the percentage of the fund's total assets invested in both weekly liquid assets and daily liquid assets on the initial date of a liquidity threshold event; and (3) a brief description of the facts and circumstances leading to the liquidity threshold event.

37 See Brenden P. Carroll/Stephen T. Cohen/Devon M. Roberson, The SEC's Money Market Fund Reforms, HLS Forum on Corporate Governance 2023.

38 In the US there are three main kinds of MMF categories:
"Government MMFs", which invest in securities backed by the U.S. government.
"Prime MMFs", which generally invest in short-term obligations issued by corporations.
"Tax-exempt MMFs", also referred to as municipal MMFs, which invest in municipal securities.

key features for each category, including valuation methods, liquidity fees, and liquidity requirements (Table 1).

With regard to the removal of redemption gates, although no MMFs made use of such tools during the pandemic crisis of 2020, the SEC observed that the regulatory framework had, in fact, produced effects opposite to those intended. Investors redeemed their shares at an early stage—that is, before the 30% weekly liquidity threshold was reached—in order to avoid the risk of being locked in. As a result, rather than preventing investor runs, redemption gates ended up incentivising them, as shareholders sought to pre-empt the possibility of being subject to redemption restrictions.

For the same reasons, the 2023 MMF reform not only removed redemption gates but also substantially revised the liquidity fees framework, introducing both a "discretionary" and a "mandatory" liquidity fee. The discretionary liquidity fee may be imposed by the fund's management board where it determines that such a measure is "in the best interests of the fund", irrespective of the level of the fund's liquid assets [*See* Rule 2a-7(c)(2)(i)][39]. By contrast, the mandatory liquidity fee must be imposed when daily net redemptions exceed 5% of the fund's net assets [*See* Rule 2a-7(c)(2)(ii)]. Despite their apparent similarity, the two mechanisms are conceptually distinct and pursue different regulatory objectives.

With respect to the discretionary liquidity fee, the central issue concerns the interpretation of the notion of "the best interests of the fund". This concept should be understood as allowing the prioritisation of the overall stability and integrity of the fund over the individual interests of shareholders seeking immediate redemption. In this regard, Rule 2a-7 refers to the "interests of the fund", a notion which, under US law—unlike in the European regulatory framework—remains largely undefined and open-ended.

By contrast, the mandatory liquidity fee is intended to reflect the additional costs incurred by the fund when selling portfolio assets in order to meet net redemption requests. The key issue in this context lies in determining the appropriate level of the fee. Under the rule, this must be based on a good-faith estimate, supported by relevant data, of the fund's expected disinvestment costs, including selling expenses (such as charges, fees, and taxes associated with the sale of portfolio securities), as well as the anticipated market impact of such sales on each security[40].

C. The EU Regulation on MMFs

The European regulatory regime applicable to MMFs developed along a distinct trajectory from that of the United States, although it has been significantly influenced by the US experience. In the European Union, MMFs were only specifically regulated with

39 According to Rule 2a-7 (c)(2)(i), the discretionary liquidity fee cannot exceed the two percent of the value of the shares redeemed.

40 See Rule 2a-7(c)(2)(iii) (A).

the adoption of Regulation (EU) No 2017/1131 of the European Parliament and of the Council on 14 June 2017. Prior to that date, MMFs were regulated in the same manner as other open-end investment funds, pursuant to national transpositions of the UCITS Directive (2009/65/EC) or the AIFMD (2011/61/EU). While these directives establish a comprehensive framework for collective investment undertakings across the EU, they do not specifically address the distinctive features and risks of MMFs.

The first EU-level regulatory intervention specifically targeting Money Market Funds occurred in 2010, when the Committee of European Securities Regulators (CESR) issued the "Guidelines on a common definition of European money market funds", with the aim of establishing a harmonised conceptual framework across Member States. These Guidelines imposed enhanced disclosure obligations, requiring fund documentation to clearly distinguish MMFs from bank deposits. In particular, they mandated explicit clarification that the perceived liquidity of MMFs does not entail any capital guarantee and that such funds are exposed to investment risks like any other collective investment vehicle[41].

Similarly, in 2012, a Resolution of the European Parliament on shadow banking called on the European Commission to amend the UCITS framework in order to explicitly regulate MMFs[42]. The Resolution suggested that MMFs should either adopt a variable net asset value, based on daily market valuation, or—if maintaining a constant NAV—be required to apply for a limited-purpose banking licence and comply with banking prudential requirements.

This approach was largely grounded in the assumption that a constant NAV MMF is functionally equivalent to a bank deposit and should therefore be subject to bank-like regulatory constraints, including capital adequacy requirements and governance standards applicable to banks and their shareholders. The underlying objective was to limit regulatory arbitrage between the banking sector and MMFs.

Accordingly, within the European legal system, the issue of money market funds was initially framed as a manifestation of shadow banking, and MMFs were predominantly analysed as an elusive extension of the banking phenomenon. This perspective is consistent with the historical origins of MMFs in the United States, where they were created precisely to compete with banks that, due to Regulation Q, were unable to pay interest on demand deposits[43].

41 Only 12 Member States applied the Guidelines one year after their entry into force, demonstrating the lack of harmonization among European MMFs before the enactment of Regulation (EU) 2017/1131. *See* Recital 11 of the Regulation.

42 See the European Parliament resolution of 20 November 2012 on Shadow Banking.

43 See Ainsley Weber, Money Market Funds, and Regulation: How Much is Too Much?, Yale Undergraduate Research Journal 2021 and Saad Alnahedh/Sanjai Bhagat, Shadow Banking Concerns: The Case of Money Market Funds, Universitty of Colorado Boulder working paper 2017.

Indeed, the phenomenon of shadow banking has traditionally occupied a more central position in European regulatory discourse than in the United States. This divergence can largely be explained by the structural differences between the two financial systems. In the United States, corporations have long relied on a wide range of market-based financing channels. In contrast, European financial systems have historically been bank-centric, such that the expansion of non-bank financial intermediaries has often been perceived as a potential circumvention of regulatory oversight[44].

Over time, however, as MMFs acquired increasing economic relevance within the European financial landscape, the Commission recognised that they could no longer be treated merely as a by-product of the banking system. Instead, they required a dedicated and tailored regulatory framework, reflecting their specific functions and risks.

In 2013, the European Commission therefore published a proposal for a regulation on money market funds. Following an extensive and politically sensitive consultation process, this ultimately resulted in the adoption of Regulation (EU) 2017/1131 on Money Market Funds (hereinafter also the "MMFR") in June 2017. The four-year legislative process leading to its adoption underscores the fact that the MMFR represents one of the most complex and contested regulatory initiatives undertaken by EU financial regulators[45]. On the one hand, the commission sought to ensure a uniform regulatory regime across Member States by adopting a directly applicable Regulation rather than a Directive requiring national transposition[46]. On the other hand, it had to take into account the contemporaneous US regulatory reforms and their observed macroeconomic implications.

I. The purposes of MMF Regulation

The primary objective of the Money Market Funds Regulation ("MMFR") is to safeguard the integrity and stability of the EU internal market by enhancing the resilience of Money Market Funds to redemption pressures under stressed market conditions. To that end, the MMFR seeks to achieve this objective by establishing a comprehensive regulatory framework governing both the operation of MMFs and the composition and risk profile of their portfolios[47].

Overall, the Regulation appears to draw inspiration from the US regulatory approach, by introducing functionally similar mechanisms aimed at addressing MMFs' vulnerability

44 See Stephan Luck/Paul Schempp, Banks, Shadow Banking, and Fragility, ECB Working Paper No. 1726 2014, Carlo Bellavite Pellegrini *et al.*, The Role of Shadow Banking and the Systemic Risk in the European Financial System, Journal of Banking and Finance 2022 and Gary Gorton/Andrew Metrick, Regulating the Shadow Banking System, Brookings Papers on Economic Activity 2010, 261.

45 See Mohammed K. Alshaleel, Money Market Funds Reforms in the US and the EU: The Quest for Financial Stability, European Business Law Review 2020, 327.

46 See the Art. 288, para. 2, Treaty on the Functioning of the European Union (TFUE) which states that "a regulation shall have general application. It shall be binding in its entirety and directly applicable in all Member States" (*added emphasis*).

47 See Recital 6 MMFR.

to investor runs, such as liquidity fees, redemption gates, enhanced transparency, and stress-testing requirements. Notably, within the EU framework, it was decided not to apply liquidity fees and redemption gates uniformly across all MMFs, but rather to limit their application to specific categories of funds. In particular, these tools were reserved for MMFs characterised by a constant or low-volatility net asset value.

The main structural difference between the US and EU systems lies in the fact that, under the MMFR, investors are offered two distinct options for the management of cash surpluses: standard MMFs and short-term MMFs[48]. The former are subject to a maximum weighted average maturity (WAM) of six months and a maximum weighted average life (WAL) of twelve months, while the latter—designed to provide the lowest level of risk exposure—must comply with a maximum WAM of 60 days and a maximum WAL of 120 days.

Depending on the asset classes in which they are permitted to invest, MMFs may be structured as:

a) variable net asset value MMFs (VNAV MMFs);
b) public debt constant net asset value MMFs (public debt CNAV MMFs);
c) low volatility net asset value MMFs (LVNAV MMFs)[49].

This regulatory architecture closely mirrors that of Rule 2a-7. In particular, the introduction of LVNAV MMFs is aimed at enhancing the competitiveness of EU MMFs, notably vis-à-vis comparable US products. Indeed, LVNAV MMFs operate in practice as CNAV funds, valuing assets with a remaining maturity of less than 75 days using the amortised cost method, provided that the deviation between the amortised cost and the market value of the instruments remains below 10 basis points[50].

The current European regulatory regime applicable to MMFs can be summarised schematically in the table below, which outlines the key features applicable to each MMF category (Table 2).

48 See Arts. 24 and 25 MMFR.
49 See Art. 24(3) MMFR stating that to that a standard MMF can only take the form of a VNAV MMF.
50 See Art. 29(7) MMFR.

Table 2 – EU MMF overall Regulation.

MMF category	VNAV		public debt CNAV	LVNAV
MMF type	Standard	Short-term	Short-term	Short-term
WAM/WAL *(days)*	180/356	60/120	60/120	60/120
Discretionary liquidity fees and *redemption gates*	NO		If weekly maturing assets < 30% and daily redemptions > 10% of total assets	
NAV	Variable		Constant	Low volatility
Valuation method	Market value or model		Amortized cost	Amortized cost for activities with up to 75 days life
Eligible investments assets	Money market instruments; ABCPs; deposits; financial derivative; repurchase agreements; shares of other MMFs.		At least 99.5 % of its assets in instruments issued or guaranteed by national administrations of the Member States.	Money market instruments; ABCPs; deposits; financial derivative; repurchase agreements; shares of other MMFs.
Diversification ***(instruments issued by the same body)***	Up to 10%		Up to 5%	
Daily maturing assets *(% on total assets)*	7.5%	7.5%	10%	10%
Weekly maturing ***assets (% on total assets)***	15%	15%	30 %	30 %

In addition to the above-mentioned rules concerning specific MMF categories, the MMF Regulation also encompasses broad regulations applicable to all MMFs, irrespective of their investment policy or time horizon. These include provisions on eligible assets (Arts. 9 et seq.), concentration (Art. 18), internal credit quality assessment (Art. 20), "know your customer" policy (Art. 27), stress testing (Art. 28) and external support (Art. 35).

First of all, the Regulation not only lists the macro asset categories in which MMFs are allowed to invest (Art. 9), but also specifies in the subsequent articles what is meant by each category, making the appropriate detailed distinctions (Arts. 10-16) to ensure that the eligible instruments have the necessary liquidity and stability for the proper functioning of MMFs.

In particular, MMFs can invest—as well as in other MMFs—in money market instruments that alternatively have at most a legal maturity at issuance of 397 days or up to a residual maturity of 397 days. Moreover, they can also invest in deposits with a credit

institution or in financial derivative instrument for the purpose of hedging the interest rate or exchange rate risks inherent in other investments of the MMF.

Again, considering the assets in which MMFs are allowed to invest, there are also diversification (Art. 17) and concentration (Art. 18) rules. Although they may appear similar, they serve different purposes. Diversification rules aim to limit risk-taking by MMFs, particularly in terms of counterparty risk[51]. It mandates MMFs to diversify their portfolios by limiting investments in assets issued by the same entity and restricting deposits made with the same credit institution. On the other hand, the concentration rule aims to prevent MMFs from exerting significant influence over the management of an issuing entity by imposing a limit of 10% of total assets that MMFs can invest in securities issued by a single entity[52].

D. Problems and open issues in the European MMF framework

I. The European MMFR and credit ratings

A central pillar of the MMFR is the obligation imposed on MMF managers to establish and apply internal credit quality assessment procedures when selecting eligible assets. This requirement reflects a broader and well-established principle of EU financial regulation, according to which market participants should not rely mechanistically on external credit ratings. In formal terms, the Regulation clearly demotes credit ratings to a supplementary informational role, consistent with Article 5a of the CRA Regulation.

However, while normatively compelling, this approach raises significant questions as to its practical effectiveness. In highly standardised and liquid short-term debt markets, internal credit assessment methodologies tend in practice to remain closely anchored to external ratings, if only because ratings continue to function as a shared market language for pricing, liquidity assessment and risk comparison. As a result, the MMFR's internal assessment requirement may mitigate explicit free-riding on rating agencies, but it does not necessarily prevent the emergence of highly correlated portfolio choices across MMFs, particularly during periods of market stress.

Moreover, the Regulation leaves substantial discretion to fund managers in designing internal credit models, without imposing meaningful harmonisation or supervisory benchmarking at EU level. This creates a tension between the objective of reducing systemic risk through diversification of credit assessment practices and the reality of supervisory asymmetries across Member States. In this respect, the MMFR risks reproducing, within the MMF sector, the same structural weaknesses that EU law has long sought to address in the banking sector: formal de-emphasis of ratings combined with continued functional dependence on them.

51 See Recital 28 MMFR.
52 See Recital 29 MMFR.

Ultimately, since MMF ratings do not typically fall within the definition of a "credit rating" under Regulation (EC) No 1060/2009 (hereinafter, the CRA Regulation), they are not classified as credit ratings and therefore do not fall within the scope of the CRA Regulation's supervisory and organisational requirements[53].

II. The European MMFR and "know your customer" policies

One of the most innovative features of the MMFR is the elevation of "know-your-customer" (KYC) policies from a purely anti-money-laundering instrument to a prudential tool aimed at managing liquidity risk. By requiring MMF managers to analyse the composition and behaviour of their investor base, the Regulation explicitly acknowledges that redemption risk is not purely stochastic, but partly endogenous to investor characteristics and incentives.

This shift represents a significant conceptual advance compared to traditional UCITS and AIF regimes. Nevertheless, the prudential potential of KYC-based liquidity forecasting should not be overstated. In practice, investor behaviour during periods of systemic stress tends to converge, regardless of ex ante profiling, as informational cascades and market sentiment dominate idiosyncratic liquidity needs. Accordingly, while KYC policies may enhance liquidity planning under normal conditions, their capacity to meaningfully constrain run dynamics in crisis scenarios remains uncertain.

In addition, the requirement to collect, process and operationalise detailed investor information raises non-trivial legal and organisational challenges, including data-protection constraints, delegation chains involving distributors and platforms, and the limited observability of beneficial owners in institutional structures. The MMFR provides little guidance on how these frictions should be addressed, thereby leaving a gap between the theoretical ambition of predictive liquidity management and its practical implementation.

III. The European MMFR and stress testing

Stress testing constitutes another cornerstone of the MMFR's prudential framework. By mandating regular scenario analyses covering interest-rate shocks, credit events and redemption pressures, the Regulation seeks to ensure that MMF managers adopt a forward-looking approach to liquidity and solvency risks.

In particular, Article 28 (1) of the MMF Regulation requires MMF managers to put in place "processes that identify possible events or future changes in economic conditions which could have unfavourable effects on the MMF". In this regard, the European Securities and Markets Authority (ESMA) has provided detailed interpretative guidance,

53 See that under CRA Regulation Article 3(1)(a) "« credit rating » means an opinion regarding the creditworthiness of an entity, a debt or financial obligation, debt security, preferred share or other financial instrument, or of an issuer of such a debt or financial obligation, debt security, preferred share or other financial instrument, issued using an established and defined ranking system of rating categories".

clarifying that the expression "effects on the MMF" should be understood as referring to any event or series of events that has an impact: (i) on the portfolio or net asset value of the MMF; (ii) on the minimum amount of daily or weekly liquid assets that mature; (iii) on the ability of the MMF manager to meet investors' redemption requests; or (iv) on the deviation between the constant NAV per unit or share and the actual NAV per unit or share[54].

Through this regime, MMF managers are required to conduct forward-looking scenario analyses, enabling them to assess the fund's resilience as key market parameters—most notably interest rate conditions—evolve. This, in turn, allows managers to identify the specific risks to which the MMF is most exposed and to define internal alert thresholds, beyond which corrective measures—such as the orderly disinvestment of higher-risk assets—must be taken in order to preserve the fund's liquidity and overall solvency.

Yet, as with stress testing in the banking sector, the effectiveness of this tool is inherently constrained by model risk and by the difficulty of capturing non-linear dynamics associated with collective investor behaviour. Stress tests are, by design, conditional on a predefined set of scenarios, which may fail to anticipate the speed, correlation and intensity of redemptions observed during actual market crises. The experience of March 2020 illustrates that liquidity stress in MMFs often materialises not as a gradual deterioration, but as an abrupt regime shift triggered by external shocks.

Moreover, the MMFR does not clearly specify the supervisory consequences of adverse stress-test outcomes beyond a general obligation to "strengthen the resilience" of the fund. In the absence of binding ex ante remedial measures or automatic constraints, stress testing risks functioning primarily as an internal risk-management and compliance exercise, rather than as an effective macro-prudential stabiliser.

IV. The European MMFR and external support

Perhaps the most distinctive—and controversial—feature of the European MMF regime is the categorical prohibition of external support. External support refers to situations in which a third party - commonly referred to as a "sponsor" - provides assistance aimed at guaranteeing the liquidity or stability of a money market fund.

During the 2008 financial crisis, when a number of MMFs were at risk of collapse, several funds were supported by their sponsors, typically credit institutions such as banks that promoted or managed the MMFs. Such support could take either explicit or implicit forms. In some cases, it consisted of an explicit guarantee ensuring that redemption requests would be honoured at a fixed NAV. In other instances, arrangements were put in place under which a third party undertook to repurchase the fund's assets at a predetermined price, often higher than the prevailing market value.

54 ESMA, Guidelines on stress test scenarios under the MMF Regulation, 24 February 2025, ESMA50-43599798-12301.

On the one hand, these forms of support may be viewed as stabilising mechanisms, insofar as they enable MMFs to withstand large-scale redemption pressures. On the other hand, they expose sponsors to significant liquidity and credit risks, thereby increasing the potential for contagion between the MMF sector and the broader financial system. Moreover, the involvement of a financially strong sponsor—such as a banking institution—creates a distortive perception, whereby MMFs may be viewed by investors as substitutes for bank current accounts, thus reinforcing the "moneyness" of these funds. As previously noted, this is precisely the outcome that the European legislator has consistently sought to avoid in the construction of the MMFR.

For these reasons, the MMFR adopts a categorical prohibition on external support and sets out an explicit list of transactions and arrangements that are deemed impermissible, insofar as they constitute substantive forms of external support[55].

By excluding sponsor guarantees, asset repurchase agreements and similar arrangements, the MMFR seeks to prevent implicit bank-like safety nets from reinforcing the "moneyness" of MMFs and from transmitting liquidity stress to the banking sector.

While this prohibition is coherent with the EU's broader approach to shadow banking and off-balance-sheet risk, it also removes a potentially powerful stabilisation mechanism. Empirical evidence from past crises suggests that credible sponsor support, when clearly disclosed and prudentially constrained, may reduce run incentives by anchoring investor expectations. By contrast, a regime that relies exclusively on ex ante liquidity buffers and internal risk management may prove insufficient in the face of systemic shocks that overwhelm individual fund safeguards. The MMFR thus resolves the problem of moral hazard by eliminating external support altogether, but it does so at the cost of leaving MMFs without any explicit lender—or sponsor—of-last-resort mechanism. This design choice reflects a deliberate policy preference, but it also exposes a structural fragility: in extreme scenarios, the stability of the MMF sector may still depend on extraordinary public interventions, as demonstrated by central-bank actions during recent crises. In this sense, the prohibition of external support does not eliminate systemic risk; it merely reallocates it.

Taken together, the unresolved tensions identified in the European MMF framework reveal a broader regulatory dilemma that extends beyond the specific architecture of Regulation (EU) 2017/1131. The MMFR demonstrates that, where financial instruments combine on-demand redeemability, capital preservation expectations and large-scale use for liquidity management, traditional distinctions between investment products and monetary substitutes become increasingly fragile. The European legislator has responded to this fragility through a dense set of *ex ante* prudential constraints, while deliberately excluding both implicit guarantees and discretionary *ex post* support mechanisms. Yet this approach does not eliminate run risk; rather, it seeks to internalise it through

55 See Art. 35(1) MMFR.

portfolio design, liquidity buffers and behavioural anticipation, with mixed and still uncertain results. These structural trade-offs are not unique to MMFs. They re-emerge, in a different legal guise, wherever non-bank issuers create instruments that are functionally perceived as safe and redeemable at par. It is against this background that the regulatory treatment of electronic money tokens and certain asset-referenced tokens under MiCAR must be assessed (see below): not as an isolated innovation in payment law, but as the latest iteration of a recurring financial-stability problem to which the MMFR already offers a partial—though imperfect—prudential template.

E. A brief comparison between the regulatory frameworks of US and EU MMFs

Although the US and European regulatory frameworks for money market funds are inspired by the same core objective—namely, providing an efficient and safe channel for the investment of liquid assets—there are differences between the two regimes that warrant closer analysis. In a globalised financial market, it is legitimate to ask whether these divergences are normatively justified, whether they reflect distinct historical and institutional trajectories, or whether they are, at least in part, the product of jurisdictional competition aimed at attracting capital.

From a historical perspective, as described in section 2.1, the US framework evolved through a sequence of amendments to Rule 2a-7, typically adopted in response to crisis episodes that revealed the inadequacy of the existing regime. By contrast, the European framework emerged in 2017 primarily from the need to harmonise national approaches that had produced divergent treatment of MMFs across member states and is substantially informed by the pre-existing US experience.

At the level of fundamentals, the two systems share several common building blocks. These include strict requirements concerning asset quality—in particular as regards diversification, maturity, and liquidity—as well as a consistent regulatory emphasis on distinguishing MMFs from bank deposits. Nonetheless, a number of material differences can be identified:

1. The European framework distinguishes between short-term and standard Money Market Funds, whereas the US regime does not introduce an equivalent two-tier classification.
2. The MMFR permits LVNAV MMFs to value part of their portfolios using amortised cost, whereas under the US framework this valuation method is more tightly constrained, being essentially limited to retail Prime funds.
3. The US framework does not allow an MMF's board to impose a redemption gate. By contrast, the MMFR permits the manager of a public debt CNAV MMF or an LVNAV MMF to apply redemption gates or suspend redemptions when weekly maturing assets fall below 30%, and net daily redemptions exceed 10% of total assets.

4. The US framework distinguishes between mandatory and discretionary liquidity fees, whereas the European regime provides for liquidity fees only in connection with the gate/suspension framework described above and subject to the decision of the MMF manager.
5. Unlike Rule 2a-7, the MMFR requires managers to forecast future liquidity needs in light of expected redemption behaviour, including through the establishment of "know-your-customer" policies.
6. The MMFR seeks to reduce excessive reliance on credit rating agencies and therefore requires internal credit quality assessments, whereas the US system relies more heavily on external ratings and does not impose an equivalent internal assessment obligation.
7. The MMFR explicitly prohibits external support by other financial institutions (i.e. sponsors). By contrast, under the US framework, external support is not categorically banned, but is treated primarily as a potential conflict of interest and is therefore subject to strict disclosure and governance constraints[56].

Ultimately, these divergences may be grouped into three macro-categories based on their underlying rationale: contingent, competitive, and systemic.

(i) This first category reflects a temporal gap between the adoption of a given rule in one jurisdiction (e.g. the US) and its eventual uptake—or non-uptake—in another (e.g. the EU). A clear example concerns the US liquidity fee and gate framework (points 3 and 4), which was significantly reshaped by the 2023 amendment to Rule 2a-7. Prior to that reform, the EU and US approaches were more closely aligned. This raises the question whether a future amendment to the MMFR might be expected, in order to reduce this divergence, in the medium term. A second example could concern the introduction of "know your customer" policies, which may plausibly be incorporated into Rule 2a-7 in the future.

(ii) The second category includes divergences that may plausibly be explained by competitive dynamics between jurisdictions seeking to attract capital and preserve the attractiveness of their financial markets. This includes the MMFR's differentiation between standard and short-term MMFs—offering greater product flexibility to the asset management industry (point 1)—as well as the introduction of LVNAV MMFs in the EU, which may be understood as a mechanism to attract institutional investors seeking alternatives to US Prime CNAV products (point 2).

(iii) Finally, systemic differences reflect deeper divergences grounded in distinct conceptions of financial structure and regulatory priorities. Two salient examples are the regulatory approach to credit rating agencies (point 6) and external support (point 7). In the EU, financial regulation consistently emphasises the need to reduce mechanistic reliance on credit ratings, whereas the US regime remains comparatively more rating-oriented, notwithstanding the role that ratings played

56 See SEC, Money Market Fund Reform; Amendments to Form PF, 14 October 2014, Release No. IC-31166.

in exacerbating vulnerabilities during the 2008 crisis[57]. Accordingly, unlike the US framework, the MMFR mandates EU MMF managers to implement internal procedures for assessing credit quality. A similar rationale underpins the EU's categorical prohibition of external support. That prohibition is closely connected to the broader architecture of prudential banking regulation in the EU, which is ill-suited to the existence of contingent liabilities borne by banks or other financial institutions that may remain off-balance-sheet and for which no additional capital or liquidity buffers are allocated[58].

F. Possible future developments in the regulation of e-money tokens, starting from the MMFR regime

Another example of regulatory and financial "artificiality"—in which non-bank entities issue liabilities perceived as safe and liquid while investing the corresponding reserves in assets that may be relatively illiquid or exposed to market or credit risk—can be found in electronic money tokens (EMTs) and, to a more limited extent, certain asset-referenced tokens (ARTs) under Regulation (EU) 2023/1114 (MiCAR). Although holders of EMTs, unlike investors in money market funds (MMFs), do not acquire a participation in a collective investment scheme and do not primarily seek a financial return from holding the token, the functional dynamics of EMT issuance display close analogies with those of MMFs from a financial-stability perspective. In both cases, the issuer undertakes to meet redemption requests at par and on demand, notwithstanding the different legal characterisation of MMF investors as unit-holders and EMT holders as creditors. This functional equivalence generates similar structural vulnerabilities, including liquidity mismatches, first-mover advantages and the risk of run-like dynamics triggered by doubts over reserve quality or redemption capacity—risks that materialise irrespective of the formal legal nature of the claim. Within the EU legal order, MiCAR establishes a harmonised regime for EMTs and ARTs that is predominantly shaped by a payment-law and monetary-substitute paradigm, reflecting the conceptualisation of EMTs as instruments functionally akin to electronic money. This orientation is evident in the centrality of redemption rights at par, the prohibition of interest, and the requirement to maintain fully backed reserves, as well as in the reliance on safeguarding and segregation techniques traditionally associated with payment services regulation. While these elements are well suited to protecting individual users in ordinary market conditions, they are less effective in addressing the collective-action problems and endogenous liquidity stress that may arise when EMTs are issued at scale and widely used as transactional or quasi-store-of-value instruments. In particular, MiCAR places comparatively limited emphasis on forward-looking prudential tools designed to absorb or mitigate systemic liquidity shocks, such as calibrated liquidity

57 See SEC, Money Market Fund Reform, Investment Company Act, 23 February 2010, Release No. IC-29132, where the Commission states that "We have found no evidence that suggests that over-reliance on NRSRO ratings contributed to the problems that money market funds faced during the debt crisis".

58 See Federico Fornasari (fn. 4), 1313.

buffers aligned with expected redemption profiles, detailed constraints on reserve asset maturity and liquidity under stress, or robust stress-testing frameworks that explicitly model disorderly redemption scenarios. By contrast, the Money Market Funds Regulation (MMFR) responds to structurally similar vulnerabilities through a dense and explicitly prudential architecture, including granular portfolio eligibility rules, quantitative liquidity thresholds, mandatory liquidity stress testing and strict limitations on discretionary external support, all of which are aimed at internalising the systemic consequences of large-scale redemption pressure. Although EMTs and ARTs fall outside the scope of the MMFR pursuant to Article 1 thereof, the functional proximity between large-scale EMT arrangements and MMFs suggests that MiCAR does not yet fully internalise the prudential profile of EMTs whose operational footprint may become systemically relevant. Ultimately, this suggests that, while MiCAR provides a coherent framework for the issuance and use of EMTs and ARTs as payment instruments, it remains only partially equipped to address the prudential and systemic-risk implications arising from their large-scale issuance and widespread adoption, thereby leaving scope for a more explicitly stability-oriented recalibration of the regime.

G. Some conclusions

The above paragraphs discussed how market funds occupy a structurally ambiguous position at the intersection of asset management and monetary finance, and that their regulation inevitably reflects broader institutional choices concerning financial stability, risk allocation and the boundary between banking and non-bank intermediation. A comparison between the United States and the European Union shows that, while both jurisdictions seek to contain run risk and systemic spillovers, they do so through regulatory strategies that mirror the underlying structure of their financial systems. In a predominantly market-based system, the US framework remains more tolerant of ex post stabilisation mechanisms, discretionary tools and the possibility of credible backstops—whether private or public—designed to absorb liquidity shocks when ex ante safeguards prove insufficient. By contrast, within a more bank-centric financial architecture, the European approach embodied in the MMFR places greater emphasis on ex ante prudential constraints, formal risk compartmentalisation and the categorical exclusion of implicit guarantees, reflecting a policy preference for preventing contagion to the banking sector even at the cost of reduced flexibility under stress. These divergences are not merely technical, but also reflect an element of regulatory competition, insofar as each regime seeks to preserve the attractiveness of its MMF sector while limiting the migration of liquidity management activities across jurisdictions. The European MMFR thus represents a coherent but demanding prudential settlement, relying on portfolio constraints, behavioural anticipation and the prohibition of external support to contain the destabilising effects of on-demand redeemability. Yet this architecture does not fully eliminate endogenous fragilities, and in extreme scenarios it remains impli-