

# Thematic Review on Money Market Fund Reforms

Peer review report



27 February 2024

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#### **Foreword**

Financial Stability Board (FSB) member jurisdictions have committed, under the FSB Charter and in the FSB Framework for Strengthening Adherence to International Standards,<sup>1</sup> to undergo periodic peer reviews. To fulfil this responsibility, the FSB has established a regular programme of country and thematic peer reviews of its member jurisdictions.

Thematic reviews focus on the implementation and effectiveness across the FSB membership of international financial standards developed by standard-setting bodies and policies agreed within the FSB in a particular area important for global financial stability. Thematic reviews may also analyse other areas important for global financial stability where international standards or policies do not yet exist. The objectives of the reviews are to encourage consistent cross-country and cross-sector implementation; to evaluate (where possible) the extent to which standards and policies have had their intended results; and to identify gaps and weaknesses in reviewed areas and to make recommendations for potential follow-up (including through the development of new standards) by FSB members.

This report describes the findings of the peer review on money market fund reforms, including the key elements of the discussion in the FSB Standing Committee on Standards Implementation (SCSI). It is the 17<sup>th</sup> thematic review conducted by the FSB and is based on the objectives and guidelines for the conduct of peer reviews set forth in the *Handbook for FSB Peer Reviews*.<sup>2</sup> The analysis and conclusions of this peer review reflect information as of December 2023 unless otherwise noted.

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See the FSB Framework for Strengthening Adherence to International Standards (January 2010).

<sup>&</sup>lt;sup>2</sup> See the *Handbook for FSB Peer Reviews* (April 2017).

#### **Abbreviations**

ABCP Asset-backed commercial paper

AIFM/UCITSD Alternative Investment Fund Managers Directive/Undertaking of Collective

Investment in Transferable Securities Directive (EU)

AUM Assets under management

CD Certificate of deposit

CDMDF Corporate debt market development fund

CHF Swiss Francs

CNAV Constant net asset value

CP Commercial paper

CRaR Conditional Redemption at Risk (India)

DLA Daily liquid assets

ECB European Central Bank

ESMA European Securities and Markets Authority

ESRB European Systemic Risk Board

EU European Union

FSB Financial Stability Board
GBP British pound sterling

IOSCO International Organization of Securities Commissions

LDI Liability Driven Investment

LMT Liquidity management tool

LVNAV Low volatility net asset value

MBR Minimum balance at risk

MMF Money market fund

MMFR Money market fund regulation (EU)

NAV Net asset value

NBFI Non-bank financial intermediation

RaR Redemption at Risk (India)

SCSI Standing Committee for Standards Implementation

SEC Securities and Exchange Commission (US)

SFC Securities and Futures Commission (Hong Kong)

UK United Kingdom
US United States

USD United States dollars

VNAV Variable net assets value WAL Weighted average life

WAM Weighted average maturity

WLA Weekly liquid assets

# **Executive summary**

Addressing vulnerabilities in money market funds (MMFs) is a key element of the FSB's work programme to enhance the resilience of the non-bank financial intermediation (NBFI) sector. Drawing primarily from responses to a questionnaire, this peer review takes stock of the measures adopted or planned by FSB member jurisdictions in response to the 2021 FSB report on *Policy Proposals to Enhance Money Markey Fund Resilience* (2021 FSB Report), including those jurisdictions' evidence-based explanations of relevant MMF vulnerabilities and policy choices made. The review does not assess the effectiveness of those policy measures, as this will be the focus of separate follow-up work by the FSB in 2026.

#### Main findings

#### MMFs in FSB member jurisdictions (section 2)

MMFs are important providers of short-term financing for financial institutions, corporations, and governments. MMFs are also used by retail and institutional investors to invest excess cash and manage their liquidity. Global MMF assets reached US\$9 trillion at end-2022, following growth of 8.6% in 2021 and 1.3% in 2022, and are heavily concentrated in the United States (US), the European Union (EU, particularly in Ireland, France and Luxembourg) and China. Between 2020 and 2022, overall MMF assets increased in the US and China but decreased slightly in the EU.

MMFs differ across FSB jurisdictions in terms of definition, structure, eligible assets, investors, currency denomination (local or foreign), liquidity and maturity limitations. MMFs with 'stable' net asset value (NAV) account for 82% of global MMF assets but are currently offered in less than half of FSB member jurisdictions. In some jurisdictions, the types of assets in which the MMF may invest depend on the structure and type of NAV of the MMF. MMFs are often denominated only in local currency, with important exceptions in the EU, Hong Kong, Mexico and Switzerland.

#### Assessing MMF vulnerabilities (section 3)

Authorities from China, EU, France, India, Indonesia, Japan, Korea, Mexico, Saudi Arabia, South Africa, UK and US identified some vulnerabilities associated with MMFs in their jurisdictions. The main identified vulnerability is the mismatch between the liquidity of MMF asset holdings and the redemption terms offered to investors, which makes MMFs susceptible to runs from sudden and disruptive redemptions. This is particularly the case for the non-public or non-government bond MMFs that invest in riskier assets, such as corporate debt. This vulnerability can be amplified by the presence of a high share of institutional investors and a stable or low-volatility NAV, and by other rules that may give rise to threshold effects that provide incentives for investors to preemptively redeem their MMF holdings in times of stress. Authorities that did not identify this vulnerability cited the high quality and liquidity of the assets held by MMFs in their jurisdiction.

While MMFs in most jurisdictions exhibit a strong home bias in both their asset portfolios and investor bases, there are some cases of significant cross-border funding and investing flows – particularly in Europe – that can transmit vulnerabilities across borders and markets. These vulnerabilities are often difficult to assess given data gaps on MMF investors and on the issuers of the instruments in which the MMFs invest. The existence of these cross-border flows, as well

as differences in availability or calibration of policy tools, creates the potential for regulatory arbitrage and cross-border spillovers, raising the need in such cases for international cooperation in closing data gaps and implementing policy reforms to ensure resilience.

A subset of the respondents that identified some vulnerabilities associated with MMFs (China, EU, France, Japan, Korea, Mexico, South Africa, UK and US) reported that such vulnerabilities could raise financial stability concerns under certain conditions. Some other authorities (India, Indonesia and Saudi Arabia) reported that identified vulnerabilities could not raise such concerns, citing the size of the MMF sector, the liquidity of MMF assets and regulation.

#### Addressing MMF vulnerabilities (section 4)

Progress in implementing the 2021 FSB policy proposals has been uneven across jurisdictions. Authorities in all jurisdictions report that they had implemented policies aimed at addressing MMF vulnerabilities prior to the 2021 FSB Report. Since then, some jurisdictions have introduced new policy tools or recalibrated existing ones (China, India, Indonesia, Japan, Korea, Switzerland, US), while others are still in the process of developing or finalising their reforms (EU, South Africa, UK). Given the vulnerabilities reported in individual jurisdictions, further progress on implementing the FSB policy toolkit would be needed to enhance MMF resilience and thereby limit the need for extraordinary central bank interventions during times of stress.

Several jurisdictions report policy tools aiming to address MMF vulnerabilities linked to the impact of large redemptions and first-mover advantage, including many that were already in place before 2021. Anti-dilution liquidity management tools (LMTs) – such as swing pricing, anti-dilution fees and liquidity fees – that allow fund managers to pass on the cost of redemptions to redeeming investors were reported as available in 21 jurisdictions, though no information was collected in the course of the peer review on their actual design and use. With the exception of India, where authorities can impose the use of swing pricing for specified periods in the event of market dislocation, no jurisdiction had mandated the use of these tools for MMFs; rather, their use was generally at the full discretion of the fund manager. Only the US has introduced new LMTs since 2021, while reforms in the EU (which are applicable to all open-ended funds, rather than specifically for MMFs) and UK are still in progress.

- The US introduced in 2023 a mandatory liquidity fee framework for certain institutional MMFs to mitigate the dilution and investor harm that can occur when other investors redeem, in addition to raising minimum liquidity requirements for MMFs to provide more substantial buffers in case of large-scale net outflows.
- The UK's consultation paper proposes that MMFs have at least one LMT available to use. The EU reached a political agreement to enhance the LMT toolkit for all openended funds, including requiring MMFs, to have at least one LMT available to use.

Reforms to improve the ability of MMFs to absorb losses continue to be the least widely available policy tools, both because jurisdictions do not consider credit risk to be a major vulnerability for MMFs and because policymakers' efforts have often focussed on making these funds more investment-like (i.e. allowing greater price variability or changes in redemption terms in stress) rather than cash-like (i.e. aiming at preservation of capital and liquidity for investors).

 Only China adopted further measures to improve the ability of MMFs to absorb losses, through the introduction in 2023 of a capital buffer for large MMFs. China was also the only FSB jurisdiction with measures of this type in place prior to 2021.

MMFs can also be exposed to excess redemptions from threshold effects, particularly during periods of intense demand for liquidity from their investors. To limit these, the 2021 FSB Report proposed: (i) the removal of ties between regulatory thresholds and the imposition of fees and redemption gates and (ii) the removal of stable NAVs. Eight jurisdictions (Argentina, Brazil, India, Indonesia, Mexico, Singapore, Switzerland and Türkiye) did not have such ties and also did not permit stable NAVs before 2021. Seven other jurisdictions (Canada, China, Hong Kong, Japan, Korea, Saudi Arabia, South Africa) did not have such ties but permitted stable NAVs. No jurisdiction reported removing the availability of stable NAV MMFs since 2021.

The US enacted reforms in 2023 to remove ties between regulatory liquidity thresholds and the imposition of fees and redemption gates. The UK has proposed to remove the link between liquidity levels and the use of LMTs.

As noted above, liquidity transformation was the MMF vulnerability most frequently identified by respondents. All jurisdictions except Australia indicated that in 2021 they already had measures to reduce liquidity transformation through limits on eligible assets and (for all jurisdictions except Australia, Brazil and Türkiye) minimum liquidity requirements.

Since then, new or higher minimum liquidity requirements have been introduced by China, India, Japan, Korea, Switzerland and the US. Higher minimum liquidity requirements have also been proposed by the UK.

The extent to which existing minimum liquidity requirements are calibrated appropriately to address MMF vulnerabilities has not been examined, but there is a significant variation between jurisdictions and MMF types, with minimum daily requirements ranging from 5% to 25% and minimum weekly requirements ranging from 15% to 50% of assets under management.

#### Recommendations

Based on the above findings, the peer review has identified the following recommendations:

- 1. FSB jurisdictions that have not yet done so should review their policy frameworks and adopt tools to address identified MMF vulnerabilities, taking into consideration the 2021 FSB policy proposals. Where relevant tools, such as minimum liquidity requirements, are already available, FSB jurisdictions should consider whether these need to be recalibrated to ensure their effective use and to maintain a sufficient level of MMF resilience, including by taking account of experience with previous stress events, potential cross-border spillovers and regulatory arbitrage.
- 2. The FSB will take the findings of this peer review into account in its monitoring of the vulnerabilities and policy tools for MMFs, including through enhancements of its annual NBFI monitoring exercise aimed at closing data gaps, and as it prepares to carry out the 2026 assessment of the effectiveness of jurisdictions' MMF policy measures in addressing risks to financial stability.

3.	IOSCO should consider the findings of this review when it revisits its 2012 <i>Policy Recommendations for MMFs</i> in light of the framework and policy toolkit in the 2021 FSB Report.

#### 1. Introduction

Money market funds (MMFs) are important providers of short-term financing for financial institutions, corporations, and governments. MMFs are also used by retail and institutional investors to invest excess cash and manage their liquidity. Addressing vulnerabilities in MMFs is a key element of the FSB's work programme to enhance the non-bank financial intermediation (NBFI) sector.

MMFs are subject to two broad types of vulnerabilities that can be mutually reinforcing: they are susceptible to sudden and disruptive redemptions, and they may face challenges in selling assets, particularly under stressed conditions. The prevalence of this liquidity mismatch, which crystallised during the March 2020 market turmoil, may depend in individual jurisdictions on market structures, use, and characteristics of MMFs. In practice, these two types of vulnerabilities have been significantly more prominent in non-public debt MMFs and can have system-wide effects when MMFs have a large footprint in short-term funding markets.

The FSB published in 2021 a report on *Policy Proposals to Enhance Money Markey Fund Resilience* (2021 FSB Report), with policy options to address these vulnerabilities by imposing on redeeming investors the cost of their redemptions; enhancing the ability to absorb credit losses; addressing regulatory thresholds that may give rise to cliff effects; and reducing liquidity transformation.<sup>3</sup> The objective of this peer review is to take stock of the measures adopted or planned by FSB member jurisdictions in response to the 2021 FSB Report, including those jurisdictions' evidence-based explanation of relevant MMF vulnerabilities and policy choices made. The review does not assess the effectiveness of those policy measures, as this will be the focus of separate follow-up work by the FSB in 2026.

The primary source of information for the review was responses to a questionnaire by authorities in FSB member jurisdictions, and by the European Commission and the European Central Bank (ECB). In addition, the FSB issued a call for public feedback in August 2023 on the areas covered by the review. The review also made use of the FSB jurisdictions' submissions to the FSB's annual NBFI global monitoring exercise.<sup>4</sup>

The report is structured as follows:

- Section 2 describes the forms, functions, and roles of MMFs in FSB member jurisdictions. It provides a basis for the subsequent stocktake of the progress made by FSB member jurisdictions in assessing and addressing MMF vulnerabilities in their domestic markets.
- Section 3 provides an overview of assessments of MMF vulnerabilities in member jurisdictions, including the main vulnerabilities, the circumstances under which the authorities consider these vulnerabilities could raise financial stability concerns, incidents of liquidity or credit stress in recent years, and cross-border or currency considerations.

See FSB (2021), Policy Proposals to Enhance Money Market Fund Resilience, October.

<sup>&</sup>lt;sup>4</sup> See FSB (2023), <u>Global Monitoring Report on Non-Bank Financial Intermediation 2023</u>, December.

 Section 4 takes stock of the policies (in place, being implemented, or proposed) to address identified MMF vulnerabilities and the extent to which these reflect the policy options discussed in the 2021 FSB Report.

Annex 1 lists summary features of MMFs across jurisdictions and Annex 2 provides a snapshot of MMF investor composition.

# 2. MMFs in FSB jurisdictions

## 2.1. Key features of MMFs in FSB jurisdictions

Although there is no unique definition across jurisdictions, MMFs can be described as open-ended investment funds that are managed with the aim of providing principal stability, daily liquidity, risk diversification and returns consistent with prevailing money market rates. In most jurisdictions, funds investing in short-term money market instruments while offering daily redemptions are considered MMFs. MMFs' structure and risk characteristics differ across jurisdictions (see Section 2.2 below). MMFs are interconnected with other parts of the financial system and with the real economy since they serve a broad range of investors (often for cash management purposes) and provide short-term financing to banks, other financial firms, non-financial firms, and governments. Hence, MMFs are important intermediaries in the short-term funding markets between investors with cash to lend and borrowers with short-term funding needs.

#### 2.2. Main differences and similarities in MMFs across jurisdictions

The definition and scope of MMFs can vary across jurisdictions. The different approaches adopted by regulators for the main features of MMFs may affect the investors' choices, depending on whether the goal is to make these funds more 'cash-like' rather than 'investment-like' (with the former aimed at preserving capital and liquidity for investors). At the same time, the definition of MMFs rules have repercussions on the preferences for potential MMFs substitutes like bank deposits or short-term bond funds. Certain jurisdictions adopt a broader scope of MMFs than others. For example, ultra short-term bond funds are regulated as MMFs in the EU but are not considered MMFs in the US. Relatedly, private liquidity funds in the US follow usually similar investment mandates as MMFs but are not registered as such, while they tend to be considered MMFs in the EU.<sup>5</sup>

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The US Securities and Exchange Commission (SEC) requires certain information regarding liquidity funds to be reported on Form PF, the confidential reporting form for certain SEC-registered investment advisers to private funds. Specifically, these advisers to private funds are required to report information about the "liquidity funds" they manage, which can resemble MMFs. Reforms in 2014 required any adviser managing a liquidity fund and having at least US\$ 1 billion in regulatory AUM attributable to liquidity funds and MMFs to report substantially the same portfolio information on Form PF as MMFs are required to report to the SEC on Form N-MFP. Moreover, in July 2023, the SEC adopted amendments to reporting by large liquidity advisers to provide a more complete picture of the short-term financing markets in which liquidity funds invest.

#### 2.2.1. Differences and similarities across dimensions

Types of MMFs by Net Asset Value (NAV). The nature of principal stability that MMFs aim to provide varies by jurisdiction and currency. MMFs with 'stable' NAV account for 82% of global MMF assets and are permitted in 16 out of 24 FSB member jurisdictions and currently offered in 10 jurisdictions (see Table 1 and section 2.3). These funds usually sell and redeem shares at par, valuing some or all assets at amortised cost rather than using mark to-market valuations. Stable NAVs are a feature of government and retail MMFs in the US, public debt constant NAV and low-volatility NAV (CNAV and LVNAV respectively) MMFs in the EU, and virtually all MMFs in China and Japan. EU LVNAV funds offer a constant NAV to investors; however, if the mark-to-market NAV deviates by more than 20 basis points, the fund must switch to mark-to-market valuations. Other MMFs have variable NAV (VNAVs) that fluctuate with the market value of their portfolios, although changes in their NAV are typically very small, consistent with the funds' objective of maintaining principal stability. VNAV funds include institutional prime and institutional tax-exempt MMFs in the US, short-term and standard MMFs in the EU and the UK, and all MMFs currently offered in Argentina, Brazil, France, Germany, Hong Kong, India, Indonesia, Italy, Mexico, Netherlands, Singapore, Spain, Switzerland and Türkiye.

Table 1: NAV types permitted and currently offered

	CNAV and/or LVNAV	VNAV	
Permitted	Australia, Canada, China, EU, France, Germany, Hong Kong <sup>6</sup> , Italy, Japan, Korea, Netherlands, Saudi Arabia**, Spain, South Africa, UK, US	Argentina*, Australia, Brazil*, Canada, China, EU, France, Germany, Hong Kong, India*, Indonesia*, Italy, Japan, Korea, Mexico*, Netherlands, Singapore*, South Africa, Spain, Switzerland*, Türkiye*, UK, US	
offered EU <sup>7</sup> , Japan, Korea, Saudi France*, Arabia**, South Africa, UK, Italy*, K		Argentina*, Australia, Brazil*, Canada, China, EU, France*, Germany*, Hong Kong*, India*, Indonesia*, Italy*, Korea, Mexico*, Netherlands*, Singapore*, South Africa, Spain*, Switzerland*, Türkiye*, UK, US	

\*: VNAV only

\*\*: CNAV only

**Types of assets.** FSB jurisdictions restrict MMFs assets in various ways. In general, MMFs are permitted to hold only high credit-quality, short-term instruments, at least some portion of which are highly liquid. Examples of eligible instruments include commercial paper (CP), certificates of deposit (CD), bank deposits, government securities, and reverse repurchase (repo) agreements backed by eligible collateral. In some jurisdictions, the types of assets in which the MMF may invest dictates other aspects of the MMF, such as the type of NAV the MMF can offer. For example, in the UK and the EU, only public debt MMFs may be CNAV. In the US, only government and retail MMFs are allowed to operate as stable NAVs.<sup>8</sup> MMFs in the EU, UK, and

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An MMF that offers stable NAV (CNAV) may only be considered by the Hong Kong Securities and Futures Commission (SFC) on a case-by-case basis taking into account applicable international regulatory standards and requirements, and subject to proper safeguards associated with this feature. MMFs currently authorised in Hong Kong are VNAV MMFs only.

Whereas France, Germany, Italy and Netherlands currently only offer VNAV MMFs, EU jurisdictions that are not FSB members offer stable NAV and LVNAV MMFs (e.g. Ireland and Luxembourg).

<sup>&</sup>lt;sup>8</sup> Government MMFs invest in the short-term debt obligations of the US government (including the US Treasury and federal agencies) and repos collateralised by government securities. A retail MMF is defined as a MMF that has policies and procedures reasonably designed to limit all beneficial owners of the fund to natural persons.

Switzerland fall under two broad categories based on the residual maturity of the assets they invest in. <sup>9</sup> Jurisdictions also have requirements around asset diversification. <sup>10</sup> These requirements are part of the provisions established with the aim to make MMFs globally more resilient to stressed conditions in the markets. Often the requirements limit the share of assets (e.g. 5% or 10%) invested in a single issuer or asset type. Examples of rules applicable to the portfolios are provided in Annex 1.

**Eligible investors.** Some jurisdictions reported regulatory limitations on the investors that can invest in certain types of MMFs.<sup>11</sup> For example, in the US, regulations limit the availability of retail MMFs to natural persons, while institutional funds can be held by a wider range of investors, such as corporations, small businesses, and retirement plans. Even where regulatory limitations are not in place, institutional investors tend to own the overwhelming majority of MMF shares in these jurisdictions.<sup>12</sup> In the EU, for example, institutional investors accounted for 95% of CNAV shares, 98% of LVNAV, and 87% of VNAV MMFs at the end of 2022. MMFs in South Africa are accessible to both retail and institutional investors, with an increasing uptake by institutional investors such as corporate treasurers.<sup>13</sup> Chinese MMFs are mostly held by retail investors, although the share of institutional investors has been growing. Annex 2 summarises the investor composition of MMFs by jurisdiction.

**Foreign currency denomination.** MMFs are often denominated in local currency, with important exceptions in the EU, Hong Kong, Mexico and Switzerland. For example, at the end of 2022, in the EU, EU-domiciled MMFs denominated in USD and GBP represented 34% and 21%, respectively, of MMF sector assets under management (AUM). In Switzerland, USD-denominated MMFs comprised 48% by AUM, CHF-denominated MMFs comprised 37% and EUR-denominated MMFs comprised 13%. In Hong Kong, USD-MMFs comprised 49%. In Mexico, foreign currency denominated MMFs comprised 9% of the MMF sector. Most jurisdictions did not have information readily available on the currency denomination mix of MMFs.

**Liquidity limitations.** FSB jurisdictions generally require MMFs to meet daily and weekly liquid asset ratio limits to manage redemption requests. In the US, under the 2023 MMF reforms, all MMFs are required to maintain weekly liquid assets (WLA) of at least 50% of total assets. Government and prime funds must also maintain daily liquid assets (DLA) of at least 25% of total assets. In the EU and UK, CNAV and LVNAV MMFs have weekly liquidity ratios of 30% and daily liquidity ratios of 10%; VNAV funds have weekly liquidity ratios of 15% and daily liquidity ratios of 7.5%. The UK has proposed increasing daily and weekly liquid assets to 15% and 50%, respectively, for all MMF types, and to remove the link between the liquid asset ratios and

These categories are short-term MMFs and standard MMFs. In the EU and UK, short-term MMFs can be CNAV for public debt MMFs, or VNAV and LVNAV for non-public debt MMFs. Standard MMFs must only offer VNAV.

These are China, EU jurisdictions, Hong Kong, India, Japan, Korea, Mexico, Saudi Arabia, Singapore, Switzerland, UK and US.

<sup>&</sup>lt;sup>11</sup> These are Japan, Korea, South Africa, and US.

This is true of the EU, (including France, Germany, and Italy), India, Netherlands and the UK. Notable exceptions are China, Spain and Switzerland, where 64%, 82% and 91% (respectively) of MMF shares are held by retail investors. The retail vs institutional ownership data was not readily available for Hong Kong, Saudi Arabia, Singapore, South Africa and Türkiye.

Where an MMF is created mainly for institutional investors, the manager is encouraged to have a separate MMF for retail investors, and not to share the fund with retail investors, unless managers make clear disclosure of being invested in an institutional MMF.

Public debt CNAVs and LVNAVs are mostly denominated in USD and GBP and domiciled in Ireland and Luxembourg, while EUR-denominated MMFs are primarily structured as standard VNAVs and are mostly domiciled in France.

liquidity management tools. Japanese MMFs' liquid asset requirements are 30%. In India, MMFs must maintain liquid assets of (a) 10% or 20% (depending on the MMF type) or (b) a ratio specified in an enhanced liquidity framework, whichever is higher. 15 Liquidity limitations in these and other jurisdictions are provided in Annex 1.

Maturity limitations. MMFs in FSB jurisdictions are also limited by the asset maturity on a portfolio and individual instrument basis. On a portfolio basis, MMF maturity is limited by weighted average maturity (WAM) and weighted average life (WAL). The WAM measures the sensitivity of an MMF to changing money market interest rates, while the WAL is used to measure the credit risk and to limit the liquidity risk of an MMF's portfolio. The main rules established for this feature by jurisdictions are provided in Annex 1.

#### Key trends since 2020 2.3.

Globally, MMF assets reached US\$ 9 trillion at end-2022, following growth of 8.7% in 2021 and 2.9% in 2022. MMF assets are heavily concentrated in the US (58%), EU (18%, notably in Ireland, France and Luxembourg) and China (17%). 16 MMF assets as a share of domestic financial assets is highest in these jurisdictions and Argentina. CNAV funds accounted for 82% of global MMF assets and represented the largest type of MMFs in six FSB jurisdictions (Graph 1, RHS).17

In March 2020, COVID-19-related uncertainties triggered a system-wide 'dash for cash'. As cash-management instruments, MMFs experienced stress notably in the EU, UK and in the US, showing that existing liquidity requirements may not have been sufficient to ensure resilience against severe outflows. In some other jurisdictions such as China, Japan and Switzerland, MMFs did not experience stress.

In the US and China, between 2020 and 2022 overall MMF assets increased. In the EU, overall MMF assets slightly decreased from 2020 to 2022. EU CNAV MMFs have significantly reduced their government bond holdings from 66% of AUM in December 2020 to 24% in December 2022, and increased their repo market exposures from 22% to 67%. 18 LVNAVs and VNAVs have increased their exposures to credit institutions and other financial sector issuers, with a 33% rise in the case of LVNAVs and a 24% rise in the case of VNAVs between December 2020 and December 2022.

<sup>15</sup> The enhanced liquidity framework is based on redemption at risk (RaR) and conditional redemption at risk (CRaR) and takes into account factors such as the liability profile, investor group concentrations, and redemption patterns.

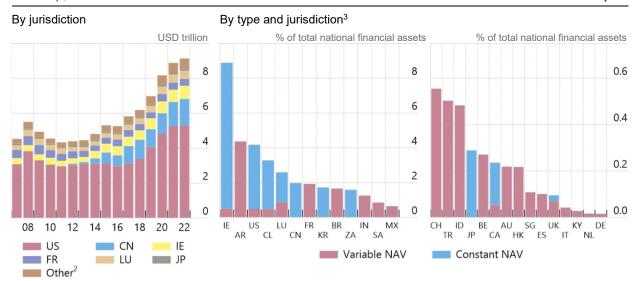
<sup>&</sup>lt;sup>16</sup> See FSB (2023), Global monitoring report on non-bank financial intermediation, December.

Canada, China, Japan, Korea, South Africa, US. In addition, CNAV funds are the largest type of MMF in Ireland and Luxembourg.

However, EUR-denominated VNAVs have significantly reduced their repo exposures in the same period.

#### MMF assets are concentrated globally in a few jurisdictions

29-Group, end-2022<sup>1</sup> Graph 1



<sup>1</sup> AR, AU, BE, BR, CA, CH, CL. CN, DE, ES, FR, HK, ID, IE, IN, IT, JP, KR, KY, LU, MX, NL, RU (up until 2020), SA, SG, TR, UK, US and ZA. <sup>2</sup> Other jurisdictions in 29-Group not displayed separately. <sup>3</sup> The bar for Ireland's constant NAV (8.4%) is not shown entirely because it is particularly high compared to the rest of the jurisdictions. Does not include data for Russia.

Source: FSB Global monitoring report on non-bank financial intermediation 2023.

In Switzerland, as rates started to rise around mid-2022, positive net inflows reached 10% during the first quarter of 2023, in particular CHF-denominated MMFs. The UK and EU identified that some MMFs experienced stress during the UK Liability Driven Investment (LDI) episode in September 2022 (see section 3.3). MMFs are often quite sensitive to rapidly changing macrofinancial conditions and risks of repricing in money markets. For instance, between February and April 2023, US MMFs experienced significant inflows during stress in the banking sector.

# 3. Assessing MMF vulnerabilities

MMF vulnerabilities have been studied extensively in the academic literature and are documented in official reports and rulemakings. While March 2020 has been the most significant recent event, previous episodes like the financial crisis in 2008 and other jurisdiction-specific events have exposed structural vulnerabilities in MMFs. In both the 2008 and 2020 episodes of market turmoil, redemptions from certain types of MMFs did not abate until central banks and governments in several jurisdictions intervened in a decisive and substantial way. <sup>19</sup> These interventions, including some directly targeted at MMFs, alleviated stress in short-term funding markets and MMFs, but did not address the underlying vulnerabilities for MMFs. The prevalence of MMF vulnerabilities in individual jurisdictions may depend on market structures, use and characteristics of MMFs. Vulnerabilities have been more prominent in non-public or non-government bond MMFs that invest in riskier assets ("non-public debt MMFs"), such as corporate debt, and can have system-wide effects. In addition, significant cross-border funding and investing flows in some MMFs can transmit vulnerabilities across borders and markets.

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See FSB (2020), <u>Holistic Review of the March Market Turmoil</u>, November.

#### 3.1. Key MMF vulnerabilities

Twelve respondents reported MMF vulnerabilities (Table 2). Nine of these respondents, accounting for roughly 96% in AUM of the global MMF sector, consider that vulnerabilities associated with MMFs could raise financial stability concerns under certain conditions. Three respondents (India, Indonesia and Saudi Arabia) reported that identified vulnerabilities could not raise such concerns, citing the size of the MMF sector, the liquidity of MMF assets, and the role of regulation in addressing the identified vulnerabilities.

Table 2: Self-assessment on MMF vulnerabilities by respondents

	YES	NO
MMF vulnerabilities identified in their jurisdiction	China, EU, France, India, Indonesia, Japan, Korea, Mexico, Saudi Arabia, South Africa, UK, US	Argentina, Australia, Brazil, Canada, Germany, Hong Kong, Italy, Netherlands, Singapore, Spain, Switzerland, Türkiye
MMF vulnerabilities could raise financial stability concerns	China, EU, France, Japan, Korea, Mexico, South Africa, UK, US	Argentina, Australia, Brazil, Canada, Germany, Hong Kong, India, Indonesia, Italy, Netherlands, Saudi Arabia, Singapore, Spain, Switzerland Türkiye

Source: Jurisdictions' questionnaire responses.

Eleven of the 12 jurisdictions that reported MMF vulnerabilities mentioned the underlying liquidity mismatch as one of the main vulnerabilities in their jurisdiction. Liquidity mismatch makes MMFs vulnerable to pre-emptive runs and large-scale redemptions, particularly in the case of non-public debt MMFs. This mismatch arises from the difference between the liquidity of MMF asset holdings (or how quickly the assets mature or could be sold), and the redemption terms offered to investors, with the investors' expectation and ability to redeem their MMF investment being usually on the same day (see Figure 1). MMFs are indeed often used and valued by their investors as a short-term investment and 'cash management' vehicle. In a stress event, investors could seek to redeem their MMF shares to obtain liquidity and meet obligations elsewhere (e.g. to meet margin calls and/or redemption pressure, build precautionary cash buffers). This can lead to sudden and large redemption pressure on MMFs, as was observed during the March 2020 turmoil.

This dynamic can be further amplified by first-mover advantage in MMFs. For example, in the case where investors reassess an MMF's suitability and risk profile as a cash instrument or where there is the potential that fees, gates or other measures could get imposed, investors might decide to pre-emptively redeem their shares in larger amounts, especially when there is a fear that redemption in the future might not be possible due to an MMF's suspension of redemptions. Further, investors could, in some jurisdictions, also have the incentive to pre-emptively redeem their MMF shares to benefit from a CNAV or LVNAV before the potential conversion to a floating/variable NAV MMF, leading to spillovers from one MMF to another.

Figures include AUMs of MMFs from EU jurisdictions other than Germany, Italy, Netherlands, and Spain, as these did not report MMF vulnerabilities in their jurisdictions.

#### Figure 1: Illustration of MMF vulnerabilities

#### **INVESTORS**

In stress event investors **redeem MMF shares to obtain liquidity** (to meet margin calls, build cash buffers, etc.) creating sudden and large redemption pressure on MMFs...

Redemptions (further) incentivised by:

'First mover advantage' effect resulting from minimum liquidity thresholds requirements...

Incentives to pre-emptively redeem to benefit from CNAV/LVNAV before potential conversion to floating/variable NAV MMF

**Potential MMFs' suspension** of serving redemptions

#### **MONEY MARKET FUNDS**

**Liquidity mismatch** between assets and redemption terms makes MMFs vulnerable to sudden and large redemptions...

...it leads to MMFs struggling to meet redemptions due to limited liquidity of underlying STFMs and 'buy to hold' nature of assets...

...MMFs being forced to suspend serving redemptions

Degree of vulnerability depends on structure (fixed vs floating NAV), investor composition (proportion and type of institutional vs retail), currency of denomination (domestic vs foreign) and investors' reason for using MMFs

#### **CENTRAL BANKS**

The need for public support could arise to address market dysfunction and unintended tightening of financial conditions, leading to moral hazard risks



Can lead to cross-border spill-overs,
contagion effects across the wider financial
system with negative effects to the real
economy

MMFs confronted with large redemption pressure, and absent sufficient large liquidity holdings, can struggle to meet redemptions. This is mainly due to the limited liquidity of underlying short-term funding markets and the 'buy to hold' nature of assets. The potential for an MMF being forced to suspend and stop serving redemption requests can lead to contagion effects across the wider financial system, with negative effects to the real economy. Investors and companies losing their access to their cash holdings in MMFs could subsequently fail to make business-critical payments like margin calls and payroll, among others. This contagion effect can also occur from an MMF industry that only represents a small percentage of a jurisdictions' total fund sector. Overall, MMFs can transmit and propagate shocks within the financial system especially if their interconnectedness with other parts of the financial system or the real economy is high.

The degree of the exact vulnerability varies by jurisdiction and depends on the combination of various factors like MMFs' asset profile, specific structure (fixed vs floating NAV), the composition of its investors (the proportion and type of institutional vs retail), currency of

denomination (domestic vs foreign) and investors' reason for using MMFs, which affects MMFs' interconnectedness.

Several authorities did not consider there to be vulnerabilities associated with MMFs in their jurisdictions. This is largely due to the absence, or only a minimal existence of liquidity mismatch between MMFs' assets and their investor base in these jurisdictions. A few of these jurisdictions reported that their domestic MMF sector is only allowed to invest in high quality and liquid assets like cash, cash-like assets, and government bonds.<sup>21</sup> In contrast, investment in riskier assets like corporate debt is forbidden or only allowed in small and limited amounts.

Many authorities report instead that the absence of a stable/fixed NAV (as well as LVNAV) and the requirement that MMFs' NAV is valued on a daily basis are an important characteristic to provide additional resilience to an MMF.<sup>22</sup> In the view of these jurisdictions, a VNAV reduces investors' incentive for large pre-emptive redemptions. In some cases, MMFs benefit from the jurisdiction's central bank's position as an ultimate sponsor for the settlement of holdings in local government bonds or the provision of special liquidity facilities.<sup>23</sup>

#### 3.1.1. Asset profile: safe and liquid vs risky and illiquid securities

The asset profile of an MMF has been identified as a key feature that defines the degree of the underlying liquidity mismatch, and subsequently how vulnerable the MMF is to sudden and large redemptions. Some authorities that did not report MMF vulnerabilities in their jurisdiction noted as a reason the high quality and liquidity of the assets MMFs are holding or are required to hold. <sup>24</sup> In many cases these assets consist of cash, cash-like assets and short-term domestic government bonds. Two authorities reported holdings in the range of 90 to 95% of highly liquid assets. <sup>25</sup> Conversely, where MMFs are holding substantial amounts of riskier assets like short-term financial sector or corporate debt, authorities have identified such MMFs as more vulnerable to large and sudden redemption pressure. <sup>26</sup> Such MMFs may hold private debt like commercial paper and certificates of deposits that cannot always be sold off quickly, in sufficient quantities and/or with small market price impact to meet investor redemption pressure, usually because the secondary market can become very illiquid in a time of stress. <sup>27</sup> These MMFs have a larger underlying mismatch between the liquidity of their assets and the fund's redemptions terms. <sup>28</sup>

#### 3.1.2. MMF structure: fixed vs floating NAV

The structure of an MMF – whether it has a fixed or floating NAV – contributes to determine a first-mover advantage and can affect the investors' incentive to redeem shares during market turmoil (see Table 3). Several authorities reported that floating or variable NAV can attenuate

<sup>&</sup>lt;sup>21</sup> Argentina, Brazil, Canada.

<sup>&</sup>lt;sup>22</sup> Brazil, France, Germany, Hong Kong, India, Italy, Netherlands, Singapore, Spain, Switzerland, Türkiye.

<sup>&</sup>lt;sup>23</sup> Brazil, India.

Argentina, Brazil, Canada, India, Spain, Switzerland.

<sup>&</sup>lt;sup>25</sup> Argentina, Brazil.

<sup>&</sup>lt;sup>26</sup> EU, France, UK, US.

See FSB (2021), Policy proposals to enhance money market fund resilience: Final report, October.

<sup>&</sup>lt;sup>28</sup> See Graph 2-14 of FSB (2023), <u>Global Monitoring Report on Non-Bank Financial Intermediation 2023</u>, December.

first-mover advantage compared to constant or low volatility NAV. <sup>29</sup> As a result, in some jurisdictions only VNAV MMFs are permitted (see Table 1). In one case, domestic MMFs must have their NAV verified by a third-party valuer. <sup>30</sup> The actual or potential conversion from a constant NAV to a floating NAV in a stress period – which can happen with LVNAV MMFs in the EU and UK – can incentivise investors to pre-emptively redeem their shares to avoid losing the benefit of a stable share price.

#### 3.1.3. Investor composition: proportion and type of institutional investors vs retail

The degree to which MMFs are vulnerable to large, pre-emptive and sudden redemption pressure in stress also depends on the composition of their investor base (see Table 3). Compared to retail investors, large and sophisticated institutional investors (including other investment funds, asset managers, insurers and large corporate investors) traditionally respond differently in times of stress, when they may need to raise cash for example to meet margin calls or (in the case of other funds) redemption requests. They may also want to build precautionary cash buffers. A correlated investor base, such as a concentration of a particular type of investor, can also lead to large and sudden redemptions if these investors face similar shocks and short-term liquidity needs (e.g. margin calls). The LDI episode in the UK was an example for this. Where authorities reported that their MMFs are vulnerable to sudden disruptive redemption, there is in general a larger presence of institutional investors over retail investors.<sup>31</sup> In two jurisdictions, regulation can require that MMFs are separated or clearly distinguished for institutional or retail investors.<sup>32</sup>

Table 3: Additional features of MMF markets (as at end-2022)

Investor composition (institutional vs retail)	Mainly (>50%) institutional investors: Argentina, Australia, Brazil, EU, France, Germany, India, Italy, Korea, Mexico, Netherlands, UK, US	Mainly retail investors: Canada, <sup>33</sup> China, Indonesia, Japan, Spain, South Africa, Switzerland
Investor composition (foreign vs domestic)	Mainly (>50%) foreign investors: EU, Korea	Mainly domestic investors: Argentina, Brazil, Germany, Spain, Hong Kong, India, Indonesia, Italy, Japan, Mexico, Netherlands
Currency of denomination	Notable share (>30%) of foreign currency denominations: EU, Hong Kong, Switzerland,	Largely in domestic currency denomination: Argentina, Brazil, China, France, Germany, India, Italy, Japan, Korea, Mexico, Spain, UK, US

Source: Jurisdictions' questionnaire responses. See Annex 2 for details on investor composition.

<sup>31</sup> EU, France, India, Italy, Mexico, UK, US.

<sup>&</sup>lt;sup>29</sup> Brazil, France, Germany, Hong Kong, Italy, India, Netherlands, Singapore, Spain, Switzerland, Türkiye.

<sup>&</sup>lt;sup>30</sup> India

<sup>32</sup> South Africa and US.

In Canada, 46% of MMFs (by value) are held by retail investors and 39% institutional, with no ownership data for the remainder.

#### 3.1.4. Other factors: Cross-border issues such as currency denomination

Foreign currency denominations and resulting cross-border implications have been reported by authorities to have additional destabilising impacts on an MMF (Table 3).<sup>34</sup> Most jurisdictions reported that their domestic MMF industry exclusively or to a large extent only invests in domestic currency-denominated assets.<sup>35</sup> However, in some cases, MMFs hold large parts of their assets in foreign currency-denominated assets.<sup>36</sup> MMFs denominated in a foreign currency usually invest in instruments denominated in that currency. The main risk is that a freeze of foreign markets where such instruments are issued and traded can generate cross-border spillovers. A major example is that of non-US banks and companies issuing CP and CD for their USD funding. Turmoil in USD-funding markets can have significant cross-border linkages, including via MMFs. This can lead to cross-border spillovers and regulatory arbitrage, as discussed further in Section 3.3.

## 3.2. Recent incidents involving MMFs and lessons learnt

There have been some liquidity or credit stress incidents in recent years besides the March 2020 market turmoil.

In September 2022, UK pension funds following LDI strategies faced collateral and margin requests. To meet these calls, pension and LDI funds redeemed their MMF shares. As result, some GBP-denominated MMFs located in the UK and EU experienced outflows that were even larger than those seen during the March 2020 dash for cash. LVNAV MMFs went into the LDI episode with some deviations in the NAV collar due to the interest rate rises that had occurred up to that point. The NAV deviations then widened due to the general market volatility at the time of the LDI crisis, in particular due to changes in market expectations on the short-term path for interest rates, which has the greatest effect on the value of MMF assets. Some LVNAV funds came close to breaking their collar, but none ultimately did. Market stress subsided only after the Bank of England's targeted intervention in the gilt market.

Some jurisdictions indicated that the macro-financial environment may trigger MMF stress. Korea indicated a temporary impact from the several rate hikes in Korea and in the US during the second half of 2022. In Canada, in 2020 rating downgrades could have affected MMFs in case funds had to sell assets to be compliant to minimum rating requirements. At the aggregate level, this could have resulted into several MMFs selling downgraded assets at the same time, which could have added to downward price pressure. To avoid this, Canadian authorities granted a 12-month relief from this rule to some MMFs, thereby avoiding market disruptions.

In South Africa, in the last two decades two banks failed, impacting their money market instruments held by MMFs. The authorities note that consequences were contained since only one MMF had reached the maximum limit to hold a single issuer with one of the two banks, they note that communication was key to safeguard investors' confidence.

<sup>34</sup> EU, UK

<sup>&</sup>lt;sup>35</sup> Argentina, Brazil, China, France, Germany, India, Italy, Japan, Korea, Mexico, Spain, UK, US.

<sup>&</sup>lt;sup>36</sup> EU, Hong Kong, Mexico, Switzerland,

In 2019, Argentinian MMFs experienced material market stress following the 're-profiling' (restructuring) of public debt. This triggered large MMF redemptions, which amounted to 52% of AUM within the week of 23 August. According to the Argentinian authorities, no MMFs faced issues in meeting these redemption requests.

#### 3.3. Cross-border effects and currency denomination considerations

Cross-border effects and currency denomination considerations are relevant because MMF portfolios can be composed of assets issued by foreign entities, MMFs can have a large foreign investor bases, and MMFs can be denominated in a foreign currency. Most MMF assets denominated in foreign currency are domiciled in certain EU jurisdictions, such as Ireland and Luxembourg. For example, the majority of MMF assets in Ireland and Luxembourg are denominated in USD and GBP. Around 90% of GBP-denominated MMFs are located in these two EU jurisdictions and are used by institutional investors for cash management purposes. While it may possibly improve asset diversification, holding large portfolios of foreign assets can expose MMFs to additional contagion from liquidity and credit shocks abroad. For instance, EU MMFs investing in public debt hold sizeable sovereign exposure towards issuers outside of the EU, the largest being US and UK treasuries. Sudden large-scale withdrawals from foreign investors may constitute another source of cross-border spillovers, particularly in jurisdictions such as Korea, Ireland and Luxembourg, where foreign investors represent respectively 91%, 76% and 59% of their NAV. Talf of jurisdictions did not have information readily available on domestic vs foreign ownership of MMFs in their markets, as of end-2022.

The implementation of MMF policy reforms would help promote resilience across jurisdictions and reduce the need for extraordinary central bank interventions. Reform measures should take account of jurisdiction-specific circumstances and policy priorities, as well as cross-border considerations including to prevent regulatory arbitrage that could arise from adopting divergent approaches across jurisdictions.

# 4. Addressing MMF vulnerabilities

The 2021 FSB Report noted that FSB members were assessing, or will assess, MMF vulnerabilities in their jurisdiction and address these by using the framework and policy toolkit in the Report, in line with their domestic frameworks. The policy toolkit sets out several mechanisms to address identified MMF vulnerabilities. They include imposing on redeeming investors the cost of their redemptions, absorbing losses, reducing threshold effects, and reducing liquidity transformation.<sup>39</sup> Under each category, a few representative options were identified and were accompanied by other alternative options, i.e. variants or extensions of the representative options. Furthermore, the 2021 FSB Report noted that a single policy option on its own may not address all vulnerabilities; accordingly, one consideration is how authorities can combine options to address all MMF vulnerabilities prevalent in the jurisdiction. This section aims

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In 2022, non-EU investors held roughly 53% of AUM of MMFs domiciled in the EU. This included 84% of CNAV MMFs, 76% of LVNAV MMFs, and 17% of VNAV MMFs.

Argentina, Australia, Canada, China, France, Saudi Arabia, Singapore, South Africa, Switzerland, Türkiye, UK, US. As of mid-2023, Argentina has requested such information, according to which foreign ownership of MMFs is minimal.

See FSB (2021), *Policy Proposals to Enhance Money Market Fund Resilience*, October.

to set out the progress that jurisdictions have made in considering and/or adopting the relevant policy options contained in the 2021 FSB Report to address said vulnerabilities. This section also outlines any complementary measures under consideration by jurisdictions expected to enhance MMF resilience, as well as any steps taken, or under consideration, to address concerns that the policies may lead to cross-border spillovers or regulatory arbitrage.

## 4.1. Imposing costs of redemptions on redeeming investors

#### 4.1.1. Overview of policies already in place in 2021

Certain features of MMFs can create a first-mover advantage for redeeming investors, which can amplify investor outflows and associated risks. Imposing the costs of their redemptions on redeeming investors can mitigate such risks. The representative options included swing pricing or economically equivalent measures, such as liquidity fees. 40 Twenty-one out of 24 respondents already permitted the use of LMTs that allow fund managers to pass the costs of redemptions on to the redeeming investors (anti-dilution LMTs), such as redemption fees, anti-dilution levies, and swing pricing. 41 These tools were typically available for use not only to MMFs but to all openended investment funds as a means to manage liquidity risk, even though anti-dilution LMTs are rarely used for MMFs. The most common primary purpose for the use of these tools is to protect the interests of remaining investors by providing fund managers with tools to mitigate liquidity risk.

The tools in place in 2021 were generally at the full discretion of the fund manager. The only exception was India, where the market regulator (Securities and Exchange Board of India) can mandate swing pricing for open-ended debt funds (including MMFs) during market dislocation.

In the EU, liquidity fees are available for use under the current EU Money Market Fund Regulation (MMFR). Canada and Brazil indicate that, although the relevant regulatory regime and fund offering documentation allow for swing pricing (or similar mechanism), in practice MMFs do not generally implement or use it.

Across most jurisdictions, the permitted use of tools that impose the costs of redemptions on redeeming investors must be disclosed in the funds' constitutive documents and in the offering documents before the fund manager can elect to use it.

The EU, Korea, Australia and Mexico noted that it would often only be in times of stress where these tools would be utilised. In some jurisdictions, fund managers do not need to advise the competent authorities when enacting swing pricing or similar mechanisms, and as a result no accurate data is available on their use.<sup>42</sup>

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<sup>40</sup> The 2021 FSB Report recognises that swing pricing may not be a suitable option for all MMF and highlighted the possibility to implement policies that are economically equivalent to swing pricing by imposing a cost on redeeming investors, in the form of liquidity fees or anti-dilution levies, rather than by changing the fund's NAV, when a fund's same-day outflows exceed a threshold.

<sup>&</sup>lt;sup>41</sup> All respondents, except for Indonesia, Japan and Saudi Arabia.

Australia, EU, Hong Kong and UK specifically referenced this in their response. The other jurisdictions were silent on this point. No jurisdiction confirmed they actively track the use of such tools.

#### 4.1.2. Reforms enacted or proposed since the publication of 2021 FSB Report

Several jurisdictions identify MMF vulnerabilities linked to the impact of large redemptions and first-mover advantage as relevant for the jurisdiction. 43 Limited progress has been made in adopting the relevant policy options set out in the 2021 FSB Report to address said MMF vulnerabilities; however, as noted above, regulatory frameworks for the majority of jurisdictions<sup>44</sup> already allow for the discretionary use of tools that enable fund managers to impose the cost of redemptions on redeeming investors (see Table 4).

A small number of jurisdictions have either adopted amendments to MMF rules or plan to do so in the future.

- In July 2023, the US SEC adopted amendments to rules relating to MMFs to address identified MMF vulnerabilities. These include the introduction of a mandatory liquidity fee framework, as well as higher liquidity ratio limits. Box 1 outlines the US reforms.
- The EU is enhancing the availability of LMTs for all open-ended funds through the revision of the Alternative Investment Fund Managers Directive/Undertaking of Collective Investment in Transferable Securities Directive (AIFMD/UCITSD). 45 The new rules will also directly apply to MMFs and, as proposed, would require MMF managers to choose at least one LMT from a harmonised list, which includes tools - such as redemptions fees, swing pricing and anti-dilution levies -- that allow to pass the cost of redemptions to the redeeming investors. The new EU rules on LMTs are expected to enter into force in the course of 2024.
- The UK authorities published a consultation paper in December 2023 on reforms to MMFs, following a discussion paper in May 2022. The proposals include requiring MMFs to have at least one LMT available to use. 46 This would formalise existing good practice followed by UK MMF managers that already have such tools available.
- South Africa is redrafting current legislation and, as part of this, the proposed policy options in the 2021 FSB Report are being considered. The intention is to submit the redraft (following industry consultation) to parliament at the end of 2024 for adoption.
- Australia announced in March 2023 the scope of a review into the regulation of managed funds, which includes MMFs. Findings of the review are expected to be provided to the Australian Government in early 2024.

 $^{\rm 44}$   $\,$  With the exception of Indonesia, Japan and Saudi Arabia.

<sup>&</sup>lt;sup>43</sup> China, EU, France, Italy, Korea, Mexico, UK, US.

<sup>&</sup>lt;sup>45</sup> A political agreement was recently reached in the EU on this legislative review, but the legal text may be subject to further changes and still needs to be endorsed formally by the European Parliament and the European Council. More information is

See UK Financial Conduct Authority (FCA) (2023), <u>Updating the regime for Money Market Funds</u>, December.

#### Box 1: US MMF Reforms-- Liquidity Fee Framework

The SEC adopted amendments to certain rules that govern MMFs under the Investment Company Act of 1940. Designed to improve the resilience and transparency of MMFs, the amendments will require institutional prime and institutional tax-exempt MMFs to impose mandatory liquidity fees when a fund experiences daily net redemptions that exceed 5% of net assets unless the fund's liquidity costs are de minimis.

In addition, non-government MMFs must impose a discretionary liquidity fee if the fund's board (or its delegate) determines that a fee is in the best interest of the fund. The amended liquidity fee framework is designed to protect remaining shareholders from dilution and to more fairly allocate costs so that redeeming shareholders bear the costs of redeeming from the fund when liquidity in underlying short-term funding markets is costly.

These amendments were adopted in lieu of the swing pricing framework set forth in the initial proposal by the SEC. The SEC stated in the Adopting Release that it believes that the mandatory liquidity fee will reduce operational burdens associated with swing pricing while still achieving many of the benefits the SEC was seeking with swing pricing by allocating liquidity costs to redeeming investors in stressed periods.<sup>47</sup>

Table 4: Tools to impose costs of redemptions on redeeming investors

Tools	Jurisdictions with policies in place before the 2021 FSB Report <sup>48</sup>	Jurisdictions with reforms enacted after the 2021 FSB Report <sup>49</sup>
Redemption fees, anti- dilution levies, and swing pricing or economically equivalent measures	Argentina, Australia, Brazil, Canada, China, EU, France, Germany, Hong Kong, India, Italy, Korea, Mexico, Netherlands, Singapore, South Africa, Spain, Switzerland, Türkiye, UK, US	US

#### 4.2. Absorbing losses

#### 4.2.1. Overview of policies already in place in 2021

Reforms improving the ability of MMFs to absorb losses were the least widespread both before and after 2021. In the 2021 FSB Report, the FSB listed two example options for this category.

<sup>&</sup>lt;sup>47</sup> See page 27 of SEC (2023) <u>Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A</u>, July.

No jurisdiction currently mandates the use of such tools. They are generally available for use at the fund manager's discretion subject to limits in local legislation and fund offering documents.

Three jurisdictions (Australia, South Africa and UK) are in the process of consulting on MMF reforms, with Australia's review covering the regulation of all managed investment schemes. However, it is too early to definitely state what measures will be adopted at this stage. The EU has also published a proposal to increase availability and use of LMTs for EU-based investment funds, which includes MMFs.

The first was Minimum Balance at Risk (MBR), under which a small fraction of each investor's share would not be immediately redeemable. No jurisdiction either had or was considering MBR in 2021. The second option proposed was a capital buffer, which would provide a means to absorb losses to the fund's NAV. In 2021, only one jurisdiction (China) had a capital buffer for MMFs, with a requirement that fund managers keep 0.5% of the aggregate NAV of their MMFs in their risk reserve fund. The EU had included a 3% capital buffer in its 2013 proposal for MMFR, but in the final version it was replaced by liquidity fees and redemption gates.<sup>50</sup>

An alternative policy option in the 2021 FSB Report was allowing external support for funds and jurisdictions varied in their usage of this alternative. While China, Japan, and the US allow for fund managers to provide support for their funds, the EU does not. With respect to China, fund managers are required to support their funds if the market value of their assets deviates too far from their amortised cost.

#### 4.2.2. Reforms enacted or proposed since the publication of 2021 FSB Report

Only one jurisdiction adopted new measures related to loss absorption since 2021 (see Table 4). In 2023, the China Securities Regulatory Commission and People's Bank of China expanded capital requirements for "Important MMFs," which are defined to include MMFs with NAVs exceeding 200 billion yuan or over 50 million shareholders for more than 20 consecutive trading days. Fund managers of such MMFs will now be required to set aside 20% of total sales revenue as well as management and custody fees to reserves.

Some jurisdictions noted that the decision to forgo policies designed to improve the ability of MMFs to absorb losses is related to the other protections already put in place. The 2021 FSB policy proposals note that policies designed to make MMFs more 'investment-like', such as removing stable NAVs or allowing changing redemption terms in times of stress, may conflict with those designed to make MMFs more 'cash-like', such as introducing capital buffers. There policy makers focus on making funds more investment-like, capital buffers and MBR may be unnecessary. Correspondingly, authorities in jurisdictions without CNAV MMFs, such as Switzerland and Singapore, did not see capital buffers as necessary. Some jurisdictions noted that allowing external support is not only less necessary under an investment-like structure but believed that it may also be counterproductive in some cases. As noted in the 2021 FSB Report, allowing for external support has risks, including that a sponsor may weaken its financial position by supporting its MMFs, potentially making the sponsor unable to withstand a protracted or later shock and leading to contagion effects. This risk was cited in the EU MMFR as the primary reason to ban external support.

In the US, the SEC considered adopting a capital buffer in its 2023 MMF reforms. While recognising advantages of capital buffers for loss absorption, the SEC ultimately did not adopt this alternative because, among other reasons, it may be challenging to design and administer, would result in opportunity costs for fund managers, and that "a NAV buffer does not protect shareholders completely from the possibility of heightened rapid redemption activity during

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<sup>&</sup>lt;sup>50</sup> See European Parliament (2017), <u>Money market funds: Measures to improve stability and liquidity</u>, July.

<sup>&</sup>lt;sup>51</sup> See Section 6.2 of FSB (2021), <u>Policy Proposals to Enhance Money Market Fund Resilience: Final report</u>, October.

periods of market stress, particularly in periods where the buffer is at risk of depletion such as during March 2020."52

Table 5: Tools to absorb losses

Tools	Jurisdictions with policies in place before the 2021 FSB Report	Jurisdictions with reforms enacted after the 2021 FSB Report	
Minimum Balance at Risk	No jurisdiction	No jurisdiction	
Capital buffer	China	China	

#### 4.3. Reducing threshold effects

#### 4.3.1. Overview of policies already in place in 2021

MMFs can be exposed to threshold effects, particularly during periods of intense demand for liquidity from their investors. To limit threshold effects and the associated excess redemption pressure, the 2021 FSB Report mentioned (i) the removal of ties between regulatory thresholds and the imposition of fees and redemption gates and (ii) the removal of stable NAVs.

Several jurisdictions have addressed the ties between regulatory thresholds and imposition of fees and redemption gates, or did not have such ties before 2021 (see Table 6). The EU, UK and US explicitly had links between the breach of regulatory thresholds and the activation of LMTs:

- In both the EU (which encompasses five national respondents and the European Commission) and the UK, for public debt CNAVs and LVNAVs, fees and gates are to be considered when the fund's WLA falls below the 30% requirement and one-day redemptions exceed 10%, whereas full gating (suspension) of redemptions or fees become mandatory once WLA falls below 10%.
- In the US, before the adoption of the new amendments (see further details below), nongovernment MMFs were required to consider fees or gates if the fund's WLA fell below the 30% requirement and to impose a liquidity fee of 1% on all redemptions if the fund's WLAs fell below 10% of its total assets, unless the MMF's board determined that imposing such a fee would not be in the best interests of the fund.

The FSB 2021 report mentioned three alternative policy extensions and variants. Of these, only China and India had already in place one of these variants.<sup>53</sup>

The 2021 FSB Report also mentioned the removal of stable NAVs as an option to limit firstmover advantage when mark-to-market valuations differ from amortised cost valuation, and thus

<sup>52</sup> See page 331-332 of SEC (2023) Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A, July.

<sup>&</sup>lt;sup>53</sup> In China, a single investor shall not hold more than 50% of the total fund shares, and the more concentrated the investors of an MMF are, the higher are the requirements for liquidity risk management. In India, MMFs require a minimum of 20 investors and no single investor can hold more than 25% of the fund shares.

reduce threshold effects. Ahead of the report's publication, eight jurisdictions (Argentina, Brazil, India, Indonesia, Mexico, Singapore, Switzerland, Türkiye) out of 24 already did not permit stable NAVs in their respective markets.<sup>54</sup> In all these jurisdictions only VNAV MMFs can be authorised by the local authorities. In France, Germany, Italy, Netherlands and Spain, CNAVs, LVNAVs and VNAVs are permitted but the market is currently exclusively composed of VNAV funds.

#### 4.3.2. Reforms enacted or proposed since the publication of 2021 FSB Report

Two jurisdictions adopted or proposed reforms pertaining to the reduction of threshold effects.

The reforms adopted by the US in July 2023 sought to reduce threshold effects by removing the ties between breaches of regulatory liquidity thresholds and the use of LMTs. Effective October 2023, US MMFs can no longer suspend redemptions temporarily through a gate,<sup>55</sup> and the regulatory link between WLAs and fees has been removed.

The UK's December 2023 consultation proposed removing the link between liquidity levels and the use of LMTs.<sup>56</sup> Australia also announced in March 2023 a review of the regulation of all managed investment schemes which is considering, among other matters, the management of liquidity risk. South Africa is redrafting current legislation and, as part of this, the proposed policy options in the 2021 FSB Report are being considered.

No respondent eliminated the availability of stable NAVs. In the EU, a 2022 public consultation published by the European Commission sought feedback on this issue. Stakeholders warned that, should stable NAV MMFs disappear, investors would struggle to find adequate alternatives, which may in turn lower portfolio diversification and channel capital to less regulated products. The UK is consulting on proposals to increase the resilience of the LVNAV structure with additional stress testing requirements and new rules to enhance operational resilience, such as requiring managers to have in place effective arrangements, processes and systems which would allow the manager to switch to issuing and redeeming units at a floating NAV. The US discussed expanding the floating NAV requirements to a broader set of MMFs, but noted that retail investors have exhibited a lower propensity to runs during prior market stress periods compared to institutional investors. In addition, the SEC noted that government funds tend to receive inflows rather than outflows during periods of market stress, thus there may be reduced benefits of floating NAVs in terms of reducing run risk in these types of funds. Finally, they noted three additional points: (i) it may reduce the attractiveness of affected MMFs to investors and may result in significant reductions in the size of the MMF sector; (ii) if the floating NAV alternatives resulted in a decrease in the size of the MMF industry, they would adversely impact the availability of wholesale funding liquidity and access to capital for issuers; and (iii) the floating NAV alternative may involve significant operational, accounting, and tax challenges.<sup>57</sup>

authorised are VNAV MMFs only.

Prior to October 2023, all MMFs had the ability to impose a liquidity fee of up to 2%, or gate for up to 10 business days in a 90-day period, if the MMF's WLA fell below 30% of its total assets and the MMF's board determined that imposing a fee or gate was in the fund's best interests.

<sup>&</sup>lt;sup>54</sup> In Hong Kong, CNAV MMFs may only be considered on a case-by-case basis subject to proper safeguards. MMFs currently

The proposal expands on 2022 guidance issued by the FCA on removing the link between liquidity levels and the use of LMTs.

See pages 310-313 of SEC (2023) <u>Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A</u>, July.

Table 6: Tools to reduce threshold effects and remove stable NAV

Tools	Jurisdictions with policies in place before the 2021 FSB Report	Jurisdictions with reforms enacted after the 2021 FSB Report <sup>58</sup>	
Removal of / no ties between regulatory thresholds and imposition of fees and gates	Argentina, Brazil, Canada, China, Hong Kong, India, Indonesia, Japan, Korea, Mexico, Saudi Arabia, Singapore, South Africa, Switzerland, Türkiye	US	
Removal of/ no stable NAV	Argentina, Brazil, India, Indonesia, Mexico, Singapore, Switzerland, Türkiye	No jurisdiction	

#### 4.4. Reducing liquidity transformation

#### 4.4.1. Overview of policies already in place in 2021

The 2021 FSB Report outlines two representative options to reduce liquidity transformation that would make it easier for funds to meet large redemptions: (i) limits on eligible assets; and (ii) additional liquidity requirements. Limits on eligible assets would require MMFs to invest a higher portion of their assets in shorter dated and/or more liquid instruments. This would lower MMFs' exposures to less liquid assets such as CP and CD with longer residual maturity. Additional liquidity requirements would mandate that they hold minimum amounts of assets that can be readily converted to cash over a two-week horizon or less.

All jurisdictions except Australia indicated that in 2021 they already had measures in place that aim to reduce liquidity transformation. All of these jurisdictions had some limits on eligible assets, while 21 out of 24 jurisdictions had additional liquidity requirements (see Table 7).<sup>59</sup>

#### 4.4.2. Reforms enacted or proposed since the publication of 2021 FSB Report

Since 2021, eight jurisdictions have enacted or proposed policies to reduce liquidity transformation.

- New rules in China for Important MMFs have included a WLA requirement of 20% and restrictions on illiquid assets of 15%, where illiquid assets include, but are not limited to, reverse repurchase and bank term deposits that do not mature in 10 trading days or less.
- In India, in addition to mandatory liquidity buffer requirements (20% of net assets for liquid funds and 10% of net assets for all other MMFs), Mutual Funds are required to maintain additional liquidity, if any, calculated based on RaR and CRaR. The calculation

<sup>58</sup> Australia is currently reviewing the overarching regulatory framework and South Africa is launching public consultations.

<sup>&</sup>lt;sup>59</sup> Australia, Brazil and Türkiye did not have minimum liquidity requirements in place.

of RaR and CRaR is done after considering investor profile (i.e. possible outflows), concentration of investors and back-testing of historical redemption patterns. This framework came into effect 1 December 2021.

- Since 2023, mutual fund (including MMF) managers in Indonesia can use redemptions in-kind as a tool for managing liquidity in case of large unexpected or emergency events.
- In Japan, where the priority was on strengthening MMF cash-like features, new rules require that MMFs hold on a daily basis at least 30% of liquid assets that can be converted into cash on the same day.
- Korea introduced new rules limiting eligible assets (e.g. limiting CDs with a maturity of six months or less) and additional liquidity requirements to impose a minimum DLA of 10% and WLA of 30%.
- Switzerland introduced a new requirement on the proportion of liquid assets to be held, which must be at least 5% with daily maturity in Swiss currency or 7.5% with daily maturity in foreign currency. The changes came into force on 1 January 2022 with the aim of further improving the liquidity resilience of Swiss MMFs.
- UK authorities reported that the current existing MMF regulation is not sufficient to address the underlying MMF structural vulnerabilities in events such as March 2020. The UK macroprudential authority, the Financial Policy Committee, judged that MMFs should hold significantly more liquid assets, as an effective way to increase resilience. In December 2023, the UK's consultation included proposals to increase daily and weekly liquidity assets to 15% and 50%, respectively, for all MMF types.
- In the US, the July 2023 MMF reforms will require that all MMFs other than tax-exempt MMFs hold at least 25% of total assets in DLA and all MMFs hold at least 50% in WLA. 60 Prior to the amendments, these requirements were 10% and 30%, respectively.

South Africa indicated that the current re-drafting of the relevant legislation includes options for all the proposed policies in the 2021 FSB Report. In addition, while Australia did not identify liquidity transformation as a main vulnerability, it will consider liquidity requirements as part of its current review.

Authorities in the EU identified liquidity transformation as a main vulnerability and highlighted a wide range of work carried out in the EU related to MMF vulnerabilities following the March 2020 episode, which required significant central bank interventions to ease strains in money markets. <sup>61</sup> Both the European Systemic Risk Board (ESRB) recommendations and European Securities and Markets Authority (ESMA) policy proposals included the increase of MMF DLA

See the May 2020 ECB Financial Stability Review Special Feature on Recent stress in money market funds has exposed potential risks for the wider financial system.

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Tax-exempt MMFs are not subject to the DLA requirements due to the nature of the markets for tax-exempt securities and the limited supply of securities with daily demand features. See page 95 of SEC (2023) <u>Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A, July.</u>

and WLA minimum liquidity requirements as an option. <sup>62</sup> Euro area central banks endorsed the ESRB recommendations and are accordingly in favour of an increase of the DLA and WLA requirements for VNAVs corresponding with the ESRB calibration. <sup>63</sup> The report adopted by the European Commission in July 2023 did not at the current juncture make proposals to address this vulnerability. It mentioned that the representative FSB policy options are to some degree reflected in the existing rules under the MMFR. These include rules on eligible assets and liquidity requirements, which depending on their calibration can reduce liquidity transformation.

Saudi Arabia identified this vulnerability but indicated that current rules on liquidity transformation are sufficient. There, MMFs must ensure that they have liquidity equal to at least 10% of the fund's NAV or that they have investments with a residual maturity of not more than seven days.

Table 7: Tools to reduce liquidity transformation

Tools	Jurisdictions with policies in place before the 2021 FSB Report	Jurisdictions with reforms enacted after the 2021 FSB Report
Limits on eligible assets	Argentina, Brazil, Canada, China, EU, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Korea, Mexico, Netherlands, Saudi Arabia, Singapore, South Africa, Spain, Switzerland, UK, US	China, Indonesia
Additional liquidity requirements and escalation procedures	Argentina, Canada, China, EU, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Korea, Mexico, Netherlands, Saudi Arabia, Singapore, South Africa, Spain, Switzerland, 64 UK, US	China, India, Japan, Korea, Switzerland, US

One challenge going forward for authorities when reducing liquidity transformation is determining the calibration of the above policy options. While all jurisdictions have some version of these policies already in place, they need to be appropriately calibrated to reduce liquidity transformation. Ultimately, this will depend on the given jurisdiction, including the liquidity of short-term funding markets where MMF assets are traded, and the degree of potential cross-border effects. Table 8 below shows the distribution of DLA and WLA requirements across jurisdictions. There is a significant variation between jurisdictions, with minimum daily requirements (where in place) ranging from 5% to 25% and minimum weekly requirements (where in place) ranging from 15% to 50% of assets under management. FSB jurisdictions should consider whether these need to be re-calibrated to ensure their effective use and to

See ESRB (2021), <u>ESRB recommendations on reform of MMFs</u>, <u>December</u> and ESMA (2022), <u>Final Report: ESMA opinion on the review of the Money Market Fund Regulation</u>, February.

See the Eurosystem's response to the ESMA consultation.

<sup>64</sup> Switzerland requires mandatory stress tests for all types of MMF and the possibility of suspension must be inserted in the fund documentation.

maintain a sufficient level of MMF resilience, including by taking account of experience with previous stress events, potential cross-border spillovers and regulatory arbitrage.

Table 8: Daily Liquid Assets and Weekly Liquid Assets requirements

Jurisdiction	Mandatory liquidity buffer	Variabl	Variable NAV		e NAV
		DLA	WLA	DLA	WLA
Australia, Brazil, Indonesia, Türkiye	No	No	No	No	No
Argentina	Yes	Yes	No	n/a	n/a
Canada	Yes	5%	15%	n/a	n/a
China	Yes	No	No	5%	10% or 20% <sup>65</sup>
EU <sup>66</sup>	Yes	7.5%	15%	10%	30%
Hong Kong <sup>67</sup>	Yes	7.5%	15%	7.5% or higher	15% or higher
India <sup>68</sup>	Yes	No	No	n/a	n/a
Japan	Yes	n/a	n/a	30%	No
Korea	Yes	10%	30%	n/a	n/a
Mexico	Yes	No	No	n/a	n/a
Saudi Arabia	Yes	n/a	n/a	No	10%
Singapore	Yes	10%	20%	n/a	n/a
South Africa	Yes	No	No	No	No
Switzerland	Yes	5% or 7.5% 69	No	n/a	n/a
UK <sup>70</sup>	Yes	7.5% (15%)	15% (50%)	10% (15%)	30% (50%
US	Yes	25% <sup>71</sup>	50%	25%	50%

n/a: Not applicable

65 20% for "Important MMFs".

Includes the EU and its Member States, among which France, Germany, Italy, Netherlands and Spain are FSB member jurisdictions.

<sup>&</sup>lt;sup>67</sup> Currently, only VNAV MMFs are authorised in Hong Kong but CNAVs may be considered by the SFC on a case-by-case basis subject to proper safeguards, including holding higher level(s) of DLA and/or WLA requirements.

<sup>&</sup>lt;sup>68</sup> "Liquid Fund" MMFs are required to maintain minimum liquid assets of 20%, while "Other open-ended debt scheme" MMFs are required to hold minimum liquid assets of 10%.

<sup>69 7.5%</sup> for assets in foreign currency.

Figures in brackets reflect those proposed by UK authorities in the December 2023 public consultation.

<sup>&</sup>lt;sup>71</sup> This provision does not apply to tax-exempt MMFs.

#### 4.5. Complementary measures expected to enhance MMF resilience

Section 5 of the 2021 FSB Report sets out potential complementary measures that could be considered in conjunction with MMF reform to enhance MMF resilience. Most jurisdictions are not considering adopting complementary measures at this stage. However, a small number did provide information on plans regarding complementary measures.

- India has adopted a backstop facility for Mutual Funds (CDMDF Corporate Debt Market Development Fund). CDMDF serves as a backstop facility for investment-grade corporate debt securities, providing stability and enhancing investor confidence in the market. CDMDF aims to enhance secondary market liquidity by creating a permanent institutional framework that can be activated during periods of market stress. The CDMDF acts as a safety net for mutual fund industry during times of market dislocation, providing support and stability to the corporate debt market.
- The UK indicated that a range of complementary measures to MMF reform are in place and other measures will be considered later this year based on the work being undertaken by the FSB on short-term funding markets.<sup>72</sup> After that work is complete, the UK will consider the findings for applicability to the UK's funding markets. The UK currently ask MMFs to stress test for liquidity, credit, rates, spreads, redemptions and macroeconomic systemic shocks.
- The US SEC also recognised that MMFs are not the totality of the short-term funding markets and that the reforms discussed in the Adopting Release for the recent MMF reforms may not solve all future issues connected to the short-term funding markets. However, it found that the events of March 2020 evidence that MMFs need better functioning tools for managing through stress while mitigating harm to shareholders, and accordingly adopted these amendments to achieve these key objectives.<sup>73</sup>
- Saudi Arabia indicated that it had recently adopted stress testing and transparency requirements within its regulatory framework for MMFs. A MMF manager must carry out a stress test at least twice a year to detect risks related to the fund and ensure treatment of these risks as soon as possible.
- In the EU, MMFR includes detailed reporting and periodic stress testing requirements for MMFs. The stress test parameters are defined by ESMA in coordination with the ECB.

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The UK is also consulting on operational resilience requirements on stable NAVs changing from dealing at constant to variable NAV and stress testing these requirements.

<sup>&</sup>lt;sup>73</sup> See page 18 of SEC (2023) <u>Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers;</u> <u>Technical Amendments to Form N-CSR and Form N-1A</u>, July.

# 4.6. Steps to address concerns that the policies may lead to cross-border spillovers or regulatory arbitrage

Two jurisdictions reported that they have taken or are considering steps to address concerns that policies may lead to cross-border spillovers or regulatory arbitrage.

- The UK noted that it was encouraging concerted international action through the implementation of FSB standards. This area is particularly relevant for the UK due to the fact that the vast majority (over 90% by assets) of GBP MMFs are domiciled outside of the UK, in the EU (Luxembourg and Ireland), as are other currency MMFs (e.g. USD-denominated) used by UK investors. The combined impact of both international and UK policies will determine the nature and extent of the systemic risk posed by MMFs.
- The EU noted that concerns regarding cross-border spillovers or regulatory arbitrage have been considered in the context of the AIFMD/UCITSD review which relates notably to use of LMTs by the investment fund sector, including MMFs, as part of the preparatory work for the European Commission proposal and during the negotiations. With regards to the potential for regulatory arbitrage within the EU, the European Commission are of the view that the proposed rules under AIFMD/UCITSD mitigate this risk by introducing a harmonised list of LMTs available in all EU Member States. In addition, ESMA will clarify the characteristics and circumstances for the selection and calibration of these tools across the EU. No other review relevant for the MMF sector is proposed at this stage by the EU.

Reasons provided by jurisdictions that are not considering steps in this area include the relatively small size of the MMF sector and/or the fact that MMFs are mainly held by domestic investors and their investments are domestic assets.

Annex 1: Summary features of MMFs across jurisdictions

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
Argentina	VNAV only	Single issuer limits, e.g. investments in a single type of issuance of a public sector bond cannot exceed 30% of a fund net worth. Rules on minimum diversification, e.g. no more than 20% of the investments can be assigned to a single issuer or to issuers with links to the same economic group.	MMFs are required to hold a liquidity buffer (deposits at Argentine Central Bank or local banks). The buffer must be constantly maintained and in the event of its total or partial use, be restored in the shortest term reasonably possible. Until the liquidity buffer has been reconstituted, no new investments for portfolios are allowed.	Fixed term deposits must have a maturity final date no longer than 95 calendar days from settlement. The WAL of these assets may not exceed 35 calendar days. MMFs' portfolios can only invest in debt instruments with a maturity no longer than one year.
Australia	MMFs are generally included in a sub-category of income funds called cash funds. VNAVs dominate market, but CNAVs are also offered.			
Brazil	VNAV only. NAV of MMFs must be valued on a mark-to market basis.	Subject to strict limits on portfolio composition: only government bonds or low-risk credit assets.		Max 1-year duration and portfolio average term of 60 days.
Canada	Canadian MMFs and US MMFs Canadian MMFs make up the majority of MMF investment in Canada. Industry standard is for Canadian MMFs to maintain a	Assets must be invested in cash, cash equivalents, securities with remaining term to maturity of <1 year and a designated rating, a floating rate of indebtedness (under certain	5% of assets must be invested in cash or be readily convertible into cash within one day, and 15% of assets must	Dollar-weighted average life limit <= 180 days, and dollar-weighted average term to maturity limit <= 90 days.

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
	constant NAV, but NAV is technically required to be variable.	conditions), or securities issued by one or more MMFs. Eligible assets exclude equities and commodities.	be invested in cash or be readily convertible to cash within one week.	
China	Most stable NAV, with some VNAVs introduced as pilots. Special provisions regulate Important Money Market Funds: MMFs that may have a significantly adverse impact on the capital market and the financial system due to their asset size, number of investors, or correlations with other financial institutions or financial products.	<b>G</b>	•	<=1 year: bank deposits, reverse repos, central bank bills and interbank CDs. <=397 days: bonds, debt financing instruments of nonfinancial corporates and asset backed securities.  Average term to maturity of MMF investment portfolios shall not exceed 120 days, and the average duration shall not exceed 240 days. The maximum average duration decreases as the concentration of shareholders increases.  For Important MMFs: average term to maturity of the investment portfolio shall not exceed 60 days; aggregate ratio of cash, treasury bonds, central bank bills
				policy financial bonds, and other financial instruments maturing within five trading days in the investment portfolio shall not be less than 20% of MMF's NAV.

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
European Union	either a short-term MMF or as a standard MMF. MMFR outlines three main types of MMFs: Public Debt Constant Net Asset Value (CNAV), LVNAV, and VNAV funds. Short-term MMFs can take the form both of stable NAV and VNAV while standard MMFs can only be a VNAV.	CNAV must invest at least 99.5% of its assets in public debt, reverse repurchase agreements secured with government debt and in cash.  LVNAV can invest in a limited list of instruments, including public debt, corporate debt, and reverse repurchase agreements.  VNAV can invest in a limited list of instruments, including corporate and public debt, similar to LVNAVs.  CNAV and LVNAV MMFs cannot invest more than 5% of assets in money market instruments, securitisations and ABCPs issued by the same body; 10% of assets in deposits made with the same credit institution (15% in EU member states with fewer viable credit institutions).  CNAV and LVNAV shall hold no more than 10% of the money market instruments, securitisations and ABCPs issued by a single body.  VNAV MMFs can invest up to 10% of assets in money market instruments, securitisations and ABCPs issued by the same body provided that the total value of such instruments does not exceed 40% of the value of its assets.	Standard MMFs, which can only be VNAVs, have minimum weekly liquidity ratio requirements of 15% and daily liquidity ratio requirements of 7.5%.  Short-term MMFs have differing weekly and daily liquidity ratio requirements depending on whether they are VNAV or not.  CNAV and LVNAV MMFs have weekly liquidity ratios of 30% (of which public debt limited to 17.5%) and daily liquidity ratios of 10%; VNAV MMFs have weekly liquidity ratios of 15% and daily liquidity ratios of 15% and daily liquidity ratios of 7.5%.	Short-term MMFs are limited to assets with a maturity of 397 days and standard MMFs are limited to two years with a 397-day reset.  Short-term MMFs (CNAV, LVNAV and VNAV) must have a WAM < 60 days and a WAL <120 days and standard MMFs (only VNAV) must have a WAM < 6 months and a WAL < 12 months.
Hong Kong	VNAV only. CNAV MMFs may only be considered on a case-by-	MMFs can only invest in short-term deposits and high-quality money	MMFs must hold at least 7.5% of the total NAV in	MMFs must maintain a portfolio with WAM <= 60 days, and

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
	case basis subject to proper safeguards.	market instruments, and other MMFs authorised by the SFC or regulated in a manner generally comparable with the SFC requirements and acceptable to the SFC.  MMFs are also subject to the following portfolio diversification requirements:  (a) the aggregate value of an MMF's holding of instruments and deposits issued by a single entity may not exceed 10% of the total NAV of the MMF; and (b) the aggregate value of an MMF's investments in entities within the same group may not exceed 20% of its total NAV.	DLA and at least 15% of the total NAV in WLA.	WAL<= 120 days and must not purchase an instrument with a remaining maturity of more than 397 days (two years for government and other public securities.)
Indonesia	VNAV only.			MMFs can invest in domestic money market instruments and debt securities with a term of <= 1 year or a remaining maturity of 1 year.
India	VNAV only. Two types, depending on the maturity of the assets and the duration of the portfolio: (i) Overnight and Liquid Funds and (ii) Ultra-short duration, Low Duration and Money Market funds.	MMFs cannot invest more than 10% of NAV in debt instruments comprising money market instruments and nonmoney market instruments issued by a single issuer which are rated below investment grade. MMFs cannot invest in unlisted debt instruments including CP, except Government Securities and other money market instruments. MMFs can invest in unlisted nonconvertible debentures up to a	Open-ended debt funds: >= 10% of net assets in liquid assets on ongoing basis Liquid funds:>= 20% of net assets in liquid assets on ongoing basis. Funds may also be required to maintain additional liquidity	Based on category of the funds, MMFs are allowed to invest in money market instruments having maturity of 1 day (for Overnight Funds), up to 91 days (for 'Liquid Funds'), with a Macaulay duration of between 3 and 6 months (for 'Ultra short duration funds'), with a Macaulay duration of between 6 and 12 months (for 'Low duration funds')

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
		maximum of 10% of the debt portfolio of the fund. Total exposure of debt schemes of Mutual funds in a particular sector shall generally not exceed 20% of the net assets of the scheme. Total exposure of debt schemes of mutual funds in a group shall generally not exceed 20% of the net assets of the scheme. No investment in (a) any unlisted security of an associate or group company of the sponsor; or (b) any securities issued by way of private placement by an associate or group company of the sponsor. The listed securities of group companies of the sponsor which is in excess of 25% of the net assets.	calculated based on Redemption at Risk (RaR) and Conditional Redemption Risk (CRaR). This (RaR and CRaR) framework takes into account factors such as the liability profile, investor group concentrations, and redemption patterns.	and up to 1 year (for 'Money Market Fund').
Japan	Domestic investment trusts denominated in Yen and foreign investment trusts denominated in foreign currencies. VNAV possible (since January 2023) but in practice all CNAV.	In addition to public bonds, investments in general corporate bonds and CP with high ratings are allowed (but limited to 5% per issuer). Investments in derivatives transactions, foreign currency assets, and structured bonds with indeterminate redemption amounts at the time of acquisition are prohibited.	MMFs' liquid asset requirements are 30%.	<= 1 year for instruments At portfolio level, maximum WAM of < 60 days; WAL of < 90 days
Korea	MMFs are classified based on (i) the assets invested (won- denominated MMFs investing in won-denominated assets, and foreign currency MMF investing in foreign assets) and (ii) type of	Assets issued by the same entity should not exceed 5% of total assets for debt securities, 3% for CPs (highest grade), and 10% for investment securities and in investment securities	Funds to hold >= 10% of 1-day liquidity or >= 30% of 7-day liquidity	Average residual maturity (duration) of assets is 75 days for individual investor MMFs and 120 days for corporate investor MMFs. No differences between

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
	investors (corporate and individual investor MMFs).			domestic/foreign currency denominated MMFs.
Mexico	MMFs are fixed-income investment funds that invest in debt instruments in local currency, with high liquidity and high credit quality.  MMF portfolios are invested in securities issued or guaranteed by the Government of Mexico, as well as those issued by the Central Bank of Mexico, bank deposits and debt securities issued by credit institutions with either of the two highest national short-term credit ratings, granted by any credit rating agency.	The maximum investment in bank deposits and securities issued by the same credit institution shall not exceed 5% of the fund's assets. Investment in securities issued by a single development banking institution may not exceed 10% of the fund's assets. Reverse repos shall represent at least 40% of the fund's assets.		The duration of the Invested assets shall be less than one month. The maturity of the Mexican government securities and of bank deposits shall in no case exceed one year.
Saudi Arabia	Stable NAV only.	Allowable investments are money market transactions with a party or bank deposits with an institution regulated by SAMA or equivalent foreign regulator; debt instruments; derivatives; MMFs with a similar strategy; and debt instrument funds.	At all times, liquidity at least 10% of the fund's NAV.	Investments that have a maturity, or a remaining maturity, period not more than 7 days
Singapore	VNAV only; CNAV MMFs are not permitted. MMFs can invest in high quality bonds and other securitised debt instruments; high quality money market instruments; deposits placed with eligible financial institutions; and financial	Exposures to a group of entities should not exceed 10% of the NAV. A MMF should not invest in more than (i) 10% of each individual issuance of debt securities by a single entity, (ii) 20% of each tranche where the debt securities are issued under a debt issuance	In Singapore, MMFs are required to invest at least 10% of its NAV in daily maturing liquid assets and 20% in weekly maturing liquid assets.	MMFs must maintain a portfolio WAM limit of 60 calendar days for a short-term MMF, and 6 months for other MMFs.

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
	derivatives aimed at hedging positions.	programme and (iii) 10% of the money market instruments of a single entity.		
South Africa	Both stable NAV and VNAV MMFs are provided, with the former type prevailing.	Diversification limits are provided per issuer and in aggregate according to the 'quality' of the counterparty and its balance sheet. For example, MMFs are not able to invest more than 5% of the market value in money market instruments issued by entities which are not listed on an exchange (10% in aggregate).	A constant level of liquid assets must be maintained at 4% of the portfolio.	Final or residual maturity of instruments cannot exceed 13 months.  WAM of money market instruments cannot exceed 120 days. Weighted average duration of money market instruments cannot exceed 90 days.
Switzerland	Short-term VNAV MMFs with very short WAM and WAL and (common) VNAV MMFs with longer but still restricted WAM and WAL.	Short-term MMFs can only invest in sight or time deposits with a term to maturity <= 1 year and in high-quality money market instruments.  (Common) MMFs can only invest in sight or time deposits with a term to maturity <=1 year and in high quality money market instruments and in investment-grade sovereign issuance. In addition, MMFs are subject to portfolio diversification requirements.	The fund management company determines the proportion of liquid assets to hold, which must be at least 5% with daily maturity in Swiss currency or 7.5% with daily maturity in foreign currency.	Short-term MMFs are limited to assets with a maturity of 397 days (1 year for sight or time deposits) and standard MMFs are limited to two years with a 397-day reset. Short-term MMFs must have a WAM < 60 days and a WAL < 120 days and common MMFs must have a WAM < 6 months and a WAL < 12 months.
Türkiye	Two types of VNAV MMFs with a different degree of liquidity of the assets: classic VNAV MMFs and 'short term debt instrument funds.'			VNAV MMFs are not allowed to hold securities with date-to-maturities longer than 184 days and the average date-to maturities of their holding are limited to 45 days. Turkish Short Term Debt Instruments Funds must have a monthly weighted average date-to maturities of 25-

Jurisdiction	MMF Types	Asset Diversification Requirements	<b>Liquidity Limitations</b>	<b>Maturity Limitations</b>
				90 days. Also, MMFs and short- term debt instruments funds can only invest in securities whose maturity can be calculated.
United Kingdom	CNAV, Short-term LVNAV and standard and short-term VNAV MMFs.	CNAV and LVNAV MMFs cannot invest > 5% of assets in money market instruments, securitisations and ABCPs issued by the same body; 10% of its assets in deposits made with the same credit institution. VNAV MMFs can invest up to 10% of its assets in money market instruments, securitisations and ABCPs issued by the same body provided that the total value of such instruments does not exceed 40 % of the value of assets.	Standard MMFs: minimum weekly liquidity ratio requirements of 15% and daily liquidity ratio requirements of 7.5%. Short-term MMFs: differing weekly and daily liquidity ratio requirements depending on whether they are VNAV or not. CNAV and LVNAV MMFs: weekly liquidity ratios of 30% and daily liquidity ratios of 10%; other funds: weekly liquidity ratios of 15% and daily liquidity ratios of 7.5%. CNAV and LVNAV MMFs: subject to mandatory fees and gate if their WLA fall below 10%.	Short-term MMFs must have a WAM of less than 60 days and a WAL < 120 days and standard MMFs must have a WAM of less than 6 months and a WAL < 12 months.
United States	MMFs are classified based on the type of investor (retail or institutional) and portfolio	Diversification requirements include: (i) generally restricting MMFs from investing more than 5% of total assets in any one issuer while treating certain affiliated entities as single issuers for	MMFs are required to maintain WLA of at least 50% of total assets. Prior to the amendments, the daily	Rules on the maturity restrictions include: (i) prohibiting a MMF from acquiring portfolio securities with remaining maturities greater than 397 days; (ii) limiting the

Jurisdiction	MMF Types	Asset Diversification Requirements	Liquidity Limitations	Maturity Limitations
	(government, tax-exempt, or prime).	this purpose; and (ii) restricting a fund from investing more than 10% of total	and WLA requirements were 10% and 30%,	dollar-weighted average maturity (WAM) of the MMF's portfolio
	Government and retail MMFs can use a stable NAV whereas institutional prime and institutional tax-exempt MMFs are required to use VNAV to sell and redeem shares.	assets in securities issued by or subject to demand features and guarantees from a single issuer.	respectively. Government and prime funds must also maintain DLA of at least 25% of total assets.	securities to 60 calendar days; and (iii) limiting the dollar- weighted average life (WAL) to maturity to 120 calendar days.

Annex 2: Investor composition of MMFs by jurisdiction (2022)

Jurisdiction	Institutional	Retail	Domestic	Foreign
Argentina	95%	5%	n/a	n/a
Australia	71%	29%	n/a	n/a
Brazil	88%	12%	99.9%	0.1%
Canada	39%	45.7%	n/a	n/a
China	36%	64%	n/a*	n/a*
European Union	93.1%	6.9%	47.4%	52.6%
France	88.3%	11.7%	n/a	n/a
Germany	71%	29%	54%	46%
Hong Kong	n/a	n/a	93%	7%
India	82.5%	17.5%	99%	1%
Indonesia	0.2%	99.8%	99.9%	0.1%
Italy	82%	18%	95%	5%
Japan	0%	100%	100%	0%
Korea	91%	9%	9%	91%
Mexico	99.7%	0.3%	98.6%	1.4%
Netherlands	98.9%	1.1%	100%	0%
Saudi Arabia	n/a	n/a	n/a	n/a
Singapore	n/a	n/a	n/a	n/a
South Africa	n/a	n/a	n/a	n/a
Spain	18%	82%	99%	1%
Switzerland	9%	91%	n/a	n/a
Türkiye	n/a	n/a	n/a	n/a
United Kingdom	77.5%	22.5%	n/a	n/a
United States	90%	10%	n/a	n/a

<sup>\*</sup> Chinese MMFs are mainly for domestic investors, with very rare participation of foreign investors. n/a means the information is not readily available in the jurisdiction.