Bank of England

FINANCIAL CONDUCT AUTHORITY

Resilience of Money Market Funds

Discussion Paper

DP22/1

May 2022

How to respond

We are asking for comments on this Discussion Paper (DP) by **23 July 2022**.

You can send them to us using the form on our website at: www.fca.org.uk/dp22-01-response-form

Or in writing to:
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Responses to this DP will be shared with the FCA, Bank of England, and HM Treasury

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To **search** on a PC use Ctrl+F or Command+F on MACs.

Contents

1 Introduction

1.1 A resilient financial system allows real economy institutions to function efficiently while supporting the Government's economic aims for growth and employment. To be resilient, a financial system should have the resources and flexibility to respond to, and not amplify, a range of different shocks. A resilient financial system is able to support the economy in both good and bad times, intermediating between borrowers and savers to enable investment that supports economic growth. Companies and financial institutions across the economy need to manage their reserves of cash in a sustainable and robust way to support their operations, manage their risks and respond to events. One way in which the financial sector supports this need is through providing cash management products, including via Money Market Funds (MMFs).

1.2 MMFs are a type of open-ended investment fund (OEF) used in many jurisdictions. In the UK, they are authorised by the Financial Conduct Authority (FCA) under the UK Money Market Fund Regulation (UK MMFR). MMFs are considered to be a low-risk investment that gives investors a way to diversify credit risk and a place to hold rather than grow their assets, while aiming to give investors a return in line with short-term money markets. MMFs do this by investing in short-term debt securities, such as government bills, commercial paper (CP) and certificates of deposit (CD), reverse repurchase agreements and bank deposits. Among UK investors, MMFs are predominantly used by investment funds, pension funds, other non-bank financial institutions, non-financial corporates, local authorities and charities. Individual UK retail investors do use MMFs, but they account for a relatively small proportion of MMF assets.

1.3 Investors often use MMFs as a cash management product, but investments in an MMF are not guaranteed. MMFs offer daily redemptions on demand, often with same day settlement, despite many of the assets that they invest in often having a longer maturity. This creates a 'liquidity mismatch' in the difference between how quickly the assets in the MMF mature, and investors' expectation that they can realise their investment in the fund on the same day. Because of this mismatch, MMFs undertake 'liquidity transformation'. MMFs are subject to liquidity regulation that places limits on the amount of liquidity transformation they can undertake. The most recent regulations were brought in after the global financial crisis in 2008. But despite that regulation, MMFs may be unable to meet redemption requests precisely when demand for redemptions increases.

1.4 In March 2020, financial markets reacted to the unexpected effect on economic activity of the Covid pandemic and the public health measures introduced to contain its spread. This shock exposed underlying vulnerabilities in the financial system, which catalysed an abrupt and extreme dash for cash. As a result, financial markets experienced increased selling pressure, volatility and illiquidity. MMFs also came under severe strain across major currencies, including in sterling, as investors quickly sought access to cash. Investors redeemed their units in MMFs to make necessary payments elsewhere, such as margin payments. However, some investors may also have redeemed or made additional redemptions partly due to fear of being unable to redeem at a future date. Some MMFs struggled to maintain the required liquidity levels as set out in law and regulations, which increased the perceived (and actual) risk of funds being suspended, which in turn may have increased investor outflows from some MMFs.

1.5 The stress in financial markets was reduced when central banks in some jurisdictions undertook quantitative easing following the collapse of demand in the economy, and as governments announced measures to support corporate cash flow. This had the effect of reducing market volatility and increasing the supply of cash. Whilst there was no direct support given to sterling MMFs, the actions taken by central banks helped alleviate the redemption pressure on MMFs, allowing MMFs to benefit from that wider support.

1.6 Without those extraordinary measures, the redemption pressure on MMFs in the relevant MMF jurisdictions may have continued. Some funds may have chosen to suspend, and some 'stable Net Asset Value' (NAV) MMFs (see below) might not have been able to provide redemptions at par (that is, return investors' money in full). Suspending an MMF would mean that investors in the fund would not be able to add to, or redeem, their investment. Losing this access could have potentially had wide repercussions across the real economy and financial sector. It could have led to companies failing to make business critical payments, such as payroll, or to financial market participants being unable to meet margin calls, leading to the technical default of those institutions. These effects could have crystalised despite the fact that, overall, the possibility that an MMF might suspend should not have surprised investors. Under UK and EU law (UK and EU MMFR), any MMF marketing document must indicate, among other matters, that the MMF; is not a guaranteed investment, that an investment in MMFs is different from an investment in deposits, that the MMF does not rely on external support for guaranteeing the liquidity of the MMF or stabilising the NAV per unit, and that the investor bears the risk of loss of the principal.

1.7 While the shock itself did not originate in the financial system, there is evidence that certain structural features of MMFs amplified and reinforced the initial liquidity shock.

1.8 In November 2020, the Financial Stability Board (FSB) published a Holistic Review of the March Market Turmoil, and began work on policy options to enhance MMF resilience. In October 2021, the FSB published its Final Report on possible policy proposals to enhance MMF resilience. FSB members agreed to assess and address the vulnerabilities that MMFs pose in their jurisdiction by utilising the framework and policy toolkit set out in the report. The UK contributed to and worked with the FSB on the report.

1.9 This Discussion Paper (DP) is a contribution to an assessment of the vulnerabilities in MMFs and how much they contribute to risks to UK financial stability and investor protection. It aims to contribute to the debate about how to reduce such risks while also ensuring that the structure of the financial system and UK market support the needs of the real economy in a sustainable and robust way. It aims to gather views to inform the UK authorities' development of MMF reform proposals, and where possible, to set out the UK authorities' initial views on the possible effectiveness and proportionality of some reform options.

1.10 In relation to MMFs, UK authorities aim to adopt policy measures following feedback received from this DP that will:

i. Strengthen the resilience of MMFs and the financial system in supporting the UK economy.
ii. Reduce the need for future extraordinary central bank interventions of the kind that occurred in March 2020.

iii. Support the provision of sustainable and robust cash management financial services that meet the needs of users including at times of financial stress.

1.11 Chapter 2 discusses the current role of MMFs in the UK economy, who uses them and for what purpose, including on a cross-border basis. We also explore the MMF legal and regulatory framework.

1.12 Chapter 3 discusses the nature and extent of the systemic risk that MMFs pose and the vulnerabilities within their structure that may amplify risks to the UK, using past events as case studies.

1.13 Chapter 4 discusses the set of policy options the FSB proposed to enhance MMF resilience. Where possible, this chapter also puts forward the UK authorities' initial thinking on the possible effectiveness and proportionality of those options.

Who should read this Discussion Paper?

1.14 The DP discusses possible policy changes that would affect UK MMFs and their users. Such policy changes are also relevant to non-UK MMFs that are marketed to UK investors. It should be read by MMF managers and users, and by other participants in short-term funding markets.

Diversity impact statement

1.15 The issues of diversity and equality connected to the MMF sector are not necessarily correlated to the size of investment. In absolute terms, two investor segments, local authorities and charities, account for a relatively small percentage of MMF investments. However, in the UK, local authorities and charities provide services to those with protected characteristics that these people may not be able to access elsewhere. Some of the larger of these organisations use MMFs for cash management purposes. In pursuing the aims set out above (paragraph 1.10), the UK authorities will consider the needs of all MMF users, which may vary. For local authorities and charities, we will take into account their possible preferences as set out in paragraph 2.7 of Chapter 2.

Next steps

1.16 Please respond to this DP by 23 July using the details on the Contents page. The UK authorities will consider feedback in deciding whether to formally consult on one or more MMF reform proposals.

1.17 This document has been prepared by FCA jointly with the Bank of England, with the endorsement of Her Majesty's Treasury (HMT).

2 The role of MMFs in the UK economy

2.1 MMFs are a type of authorised open-ended investment fund (OEF) that invest in short term money market instruments. Globally, MMFs had over 7 trillion of assets under management (AUM) as at 31 December 2021. AUM of sterling-denominated MMFs have more than doubled since the 2008 global financial crisis, standing at around 280 billion at December 2021. This section sets out how UK investors use sterling MMFs, the role of sterling MMFs in markets, and explains the current legal and regulatory framework for MMFs that UK investors use.

Economic function of MMFs for UK investors

2.2 Among UK investors, MMFs are predominantly used by investment funds, pension funds, other non-bank financial institutions, non-financial corporates, local authorities and charities. Many investors use MMFs as part of their cash management strategies because MMFs offer 'same day liquidity'. Unlike other OEFs, MMFs tend to prioritise stability of value over maximising return, and aim to deliver rates consistent with the short-term money market.

2.3 MMFs historically offered higher yields than bank accounts that also offered instant access to cash. MMFs also allow investors to diversify counterparty credit risk, and outsource much of the risk management associated with investing with many different counterparties. As collective investment schemes, MMFs also give investors opportunities to access markets that they may be unable to reasonably access individually.

2.4 The way different types of investor use MMFs varies. Most UK MMF investors use sterling MMFs, although a number of large corporates and financial institutions based in the UK also use MMFs denominated in other currencies, including US dollars and euros.

2.5 Non-financial corporates (mostly large or medium sized) use MMFs as a way of managing cash balances. These balances may come from monthly payroll, from the proceeds of a bond issuance or in the run of up to large capital expenditure. Non-financial corporates often treat MMFs as similar to bank deposits, and many account for them as 'cash equivalent' on their balance sheets, despite MMFs being clearly labelled as investments. For example, Bank of England analysis estimates that around half of FTSE 100 companies use MMFs to some extent, and most of them classify those investments as 'cash equivalent'. An MMF investment can be classified as 'cash equivalent' if management and auditors agree that it is a short-term, highly liquid investment that can readily be converted to known amounts of cash, and that carries an insignificant risk of changes in value[1].

1 IFRS IAS 7, UK GAAP FRS 102.

2.6 Financial institutions, such as insurers, pension funds and other investment funds, also use MMFs as a way of managing cash, including as a place to hold cash they may use for margin payments. Margin calls may increase when market volatility increases, and financial institutions need to be able to access cash on demand to pay margin calls. Failure to access their cash could result in increased likelihood of default.

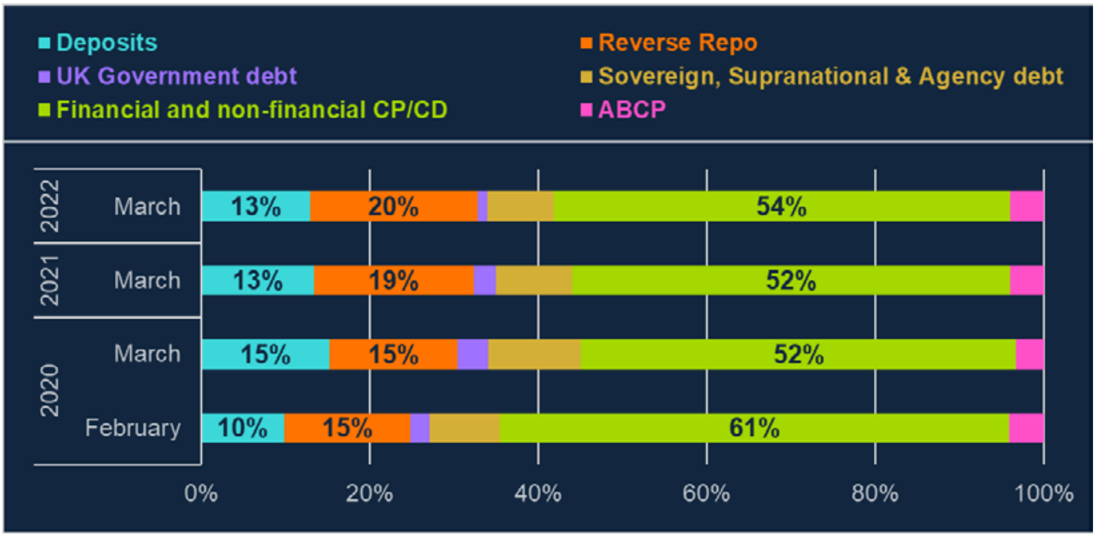
2.7 In the non-profit sector, local authorities and charities use MMFs to manage tax receipts and donations. Those institutions may be more sensitive to losses than financial institutions, no matter how small, given their not-for-profit mandate.

2.8 Individual UK retail investors account for a small proportion of overall MMF shareholders by assets.

Role of sterling MMFs in short term funding markets

2.9 While MMFs offer same day liquidity to their investors, MMFs provide a return by investing in assets with residual maturity (the length of time before an investment matures) longer than a day. MMFs typically invest in bank deposits, UK government bills, certificates of deposit (CD), commercial paper (CP), asset-backed commercial paper (ABCP) and reverse repurchase agreements (see Chart 1). This means MMFs run a liquidity mismatch, potentially increasing the likelihood of investor redemptions under some circumstances (see Chapter 3).

Chart 1: Sterling MMF assets by type



Source: Crane Data, Bank of England calculations

Notes: CP = Commercial Paper, CD = Certificates of Deposit, ABCP = Asset backed commercial paper

MMF participation in sterling money markets

Market	Approximate MMF holdings (£bn)	MMF holdings as a share of total market
Government debt		
Gilt repurchase agreement (repo)	40	25-35% of overnight market
UK Treasury bills	6	10-20%
UK gilts with < 1 year remaining maturity	1	1%
Financial and non-financial corporate debt		
Deposits	35	45-50% of overnight market
Certificates of deposit	90	High, potentially up to 90%(1)
Commercial paper	33	
Asset-backed commercial paper	10	
Other assets	20	n/a

Source: Crane Data, UK Debt Management Office, Bank of England and market Intelligence

(1) Complete issuance data is not available, but market intelligence suggests a concentrated investor base, primarily MMFs.

2.10 MMFs are involved in government debt markets through two main channels: i) investments in short-term government debt and ii) reverse repurchase agreements ('reverse repos') backed by government debt (gilts).

2.11 Sterling MMFs account for a significant amount of overnight gilt repurchase agreement (repo) activity. In short-term government debt, sterling MMFs own a significant minority of UK Treasury bills, between 10-20% of the total amount outstanding. Sterling MMF holdings also consist of sterling debt issued by other (non-UK) sovereigns, government agencies and supranational organisations.

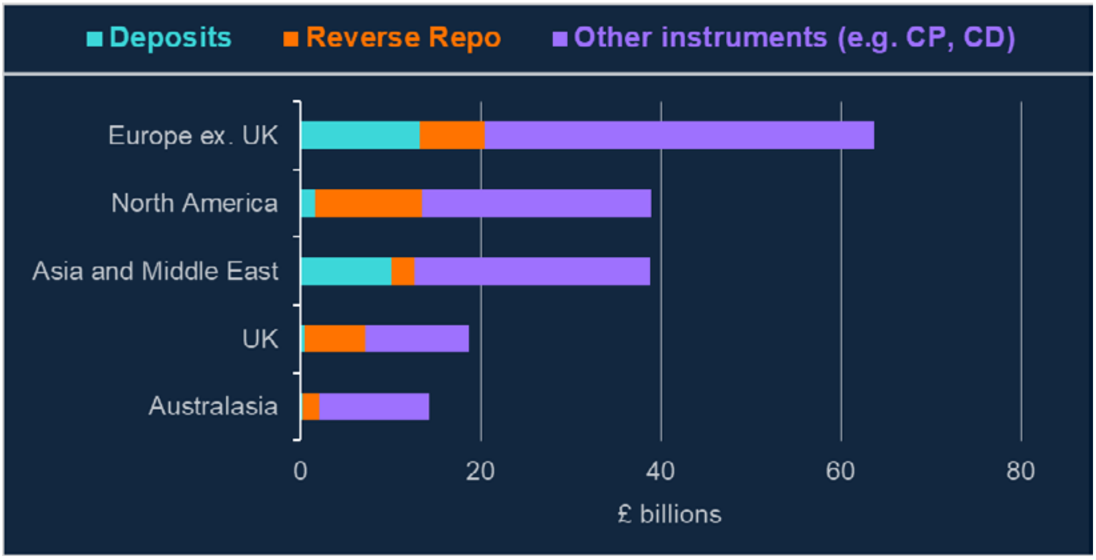
2.12 The share of Treasury bills and other forms of government debt in total sterling MMF holdings is small compared with other currencies and jurisdictions, particularly in the US and US dollar denominated funds in the EU. That may reflect a range of factors, including investor preferences, the dominant role of government-only MMFs in the US, and differences in the mix of government issuance between shorter and longer dated debt issued by jurisdictions[2].

2.13 The vast majority of sterling MMF exposures are to banks (over 90% of their assets). This includes exposures to banks as counterparties in reverse repo transactions. The largest exposures to banks are through CP and CD holdings. MMFs typically invest in CP and CD with an initial maturity of around 3-6 months. Such funding receives favourable treatment for banks under liquidity regulation relative to instant access deposits, and as such MMF investors can obtain a higher return than a bank deposit.

2.14 The banks that issue the CD and CP are typically branches or subsidiaries of non-UK global banks (see Chart 2), for whom MMFs represent a source of sterling funding.

2 For example, the average maturity of outstanding government in the UK is around 14 years compared with an average of 7 years for other G7 countries. See Chart A5 in HM Treasury's Debt Management Report: 2022-23) (See section 4 for an assessment of the impact on sterling MMFs of public debt quotas).

Chart 2: Sterling MMF exposures to financial sector counterparties by geography



Source: Crane Data, Bank of England calculations

Notes: Data from a sample of MMFs with total AUM of £204bn as of end-March 2022. Region refers to the region of the parent entity (i.e. group headquarters).

2.15 MMFs also make up a significant proportion of overnight wholesale bank deposits. Sterling MMFs' deposits with banks account for approximately 45-60% of the transaction volumes used to calculate the Sterling Overnight Index Average (SONIA). SONIA measures the rate paid by banks on overnight funds. SONIA has replaced the London Inter-Bank Offered Rate (LIBOR) as the dominant reference rate across sterling derivative, loan and bond markets.

2.16 Sterling MMF exposures to non-financial corporates are small, accounting for only £2 bn (1% of holdings). This reflects the relatively small size of this market compared to other currencies such as US dollars and euros.

Legal and regulatory framework for MMFs used by UK investors

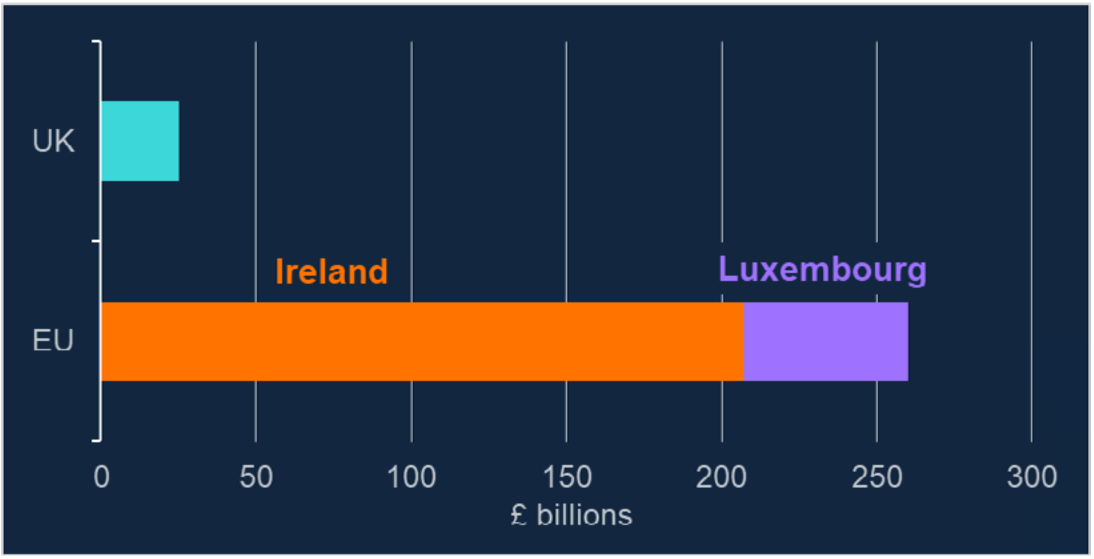
2.17 In terms of assets, UK investors predominantly use sterling MMFs domiciled in the EU (see chart below). EU MMFs come under the EU Money Market Fund Regulation (EU MMFR). UK MMFs must be authorised under the UK MMFR[3].

2.18 The EU law version of the MMFR was retained in UK law as the UK MMFR through the European Union (Withdrawal) Act 2018 (EUWA)[4].

3 Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds (the 'MMF Regulation') is the core EU legislation relating to EU MMFs. Although the MMF Regulation was directly applicable in the UK in 2018 (when it started to apply), some parts of the UK regulatory framework had to be modified. The Money Market Funds Regulations 2018 (SI 2018/698) enabled the FCA to authorise MMFs and enforce the provisions of the MMF Regulation. The FCA also made changes to its Handbook, mainly via the Money Market Funds Regulation Instrument 2018 (FCA 2018/37).

4 Sections 24 to 26 and Schedule 9 of the Financial Services Act 2021 amended Part 17 of FSMA and the UK MMF Regulation.

Chart 3: Sterling MMF assets under management by domicile



Source: FCA, Central Bank of Ireland, Banque centrale du Luxembourg and Bank of England calculations
Notes: AUM as of 28 February 2022

2.19 The UK and EU MMFR regulations distinguish between standard and short-term MMFs. The portfolio rules which specify certain requirements for the composition of the assets held by the MMF differ between these two types (see below). The regulations then further distinguish between MMFs and require them to be set up as one of the three types of MMFs:

i. Public debt constant NAV (PDCNAV) MMF (which must be a short-term MMF). This type of MMF can offer a 'stable NAV'. See Chapters 3 and 4, below, for more on this.
ii. Low volatility NAV (LVNAV) MMF (which must be a short-term MMF). This type of MMF can also offer a 'stable NAV'.
iii. Variable NAV (VNAV) MMFs (which can be either short-term MMFs or standard MMFs).

2.20 EU and UK MMFs must meet various regulatory requirements under the MMFRs. Some of those involve the liquidity of a fund's assets. For example, MMFs must hold a certain percentage of assets in daily liquid assets (DLA) and a certain percentage in weekly liquid assets (WLA), roughly corresponding to assets that mature within one business day and five business days respectively. These requirements ensure at least a minimum level of liquid assets are available in all MMFs, which will help them meet redemption requests and limit the maturity mismatch which MMFs can undertake. The precise percentage depends on the type of MMF.

2.21 MMFs also have limits on the weighted average maturity (WAM) and weighted average life (WAL) of their assets. These limit the interest rate risk and credit risk which MMFs can be exposed to. These requirements also vary by MMF type. MMFs have restrictions on the type of assets they can hold. MMFs must only invest in 'short term' money market instruments, defined as assets with a residual maturity of less than 397 days. MMFs must not invest in equities or commodities, and can only use derivatives for hedging interest rate or currency risk.

Requirement	Standard VNAV	Short term VNAV	LVNAV	Public Debt CNAV
DLA	7.5%	7.5%	10%	10%
WLA	15%	15%	30%	30%
WAM	< 6 months	< 60 days	< 60 days	< 60 days
WAL	< 12 months	< 120 days	< 120 days	< 120 days
Assets	Any short term	Any short term	Any short term	99.5% public debt

2.22 UK MMFs must be collective investment undertakings. In practice, they are Open Ended Funds (OEFs). Most are UK UCITS[5], although a small number are UK AIFs[6]. UK MMFs must meet the relevant requirements of the UK MMFR and the relevant rules and legislation governing the operation of (as applicable) UK UCITS, AIFs authorised under Financial Services and Markets Act (FSMA), or AIFs that are not authorised under FSMA but that are managed by full-scope UK AIFMs.

2.23 All currently-authorised UK domiciled MMFs are sterling denominated and are predominately used by UK investors. UK domiciled MMFs account for a relatively small proportion of overall sterling MMF assets (see chart above). There are 17 UK domiciled MMF funds/sub-funds with around £25 billion of AUM. Of those, 3 are LVNAVs with around £9bn AUM, and 14 are VNAVs with around £16bn AUM (Q3 2021 figures).

2.24 Around 90% of sterling MMF assets are in MMFs domiciled in the EU, mainly Ireland and Luxembourg LVNAV funds. They are mainly used by UK investors. Regulatory regimes for MMFs are standardised across the European Union via the EU MMFR. Ireland and Luxembourg are significant centres of fund management.

2.25 At present, for a non-UK fund to be marketed in the UK as an MMF, it must be:

i. an EEA UCITS which is a 'recognised scheme' under the Temporary Marketing Permissions Regime (TMPR) for EEA UCITS[7]. The TMPR is due to end in December 2025[8].
ii. an EEA AIF which has exited the TMPR for EEA AIFs and has notified the FCA of its intention to market the fund under the UK National Private Placement Regime (NPPR).

2.26 EU domiciled sterling MMFs were able to passport to the UK before the end of the transition period. EU domiciled sterling MMFs containing the bulk of sterling MMF assets are currently able to market to UK investors under the TMPR for EEA UCITS funds.

5 Authorised as UCITS (Undertakings for the Collective Investment in Transferable Securities) under section 243 or 261D of the Financial Services and Markets Act 2000 (FSMA).
6 Defined in regulation 3 of the Alternative Investment Fund Managers Regulations 2013 (SI 2013/1733) (AIFMD UK Regulation) as a UK AIF (Alternative Investment Fund).
7 The Collective Investment Schemes (Amendment etc) (EU Exit) Regulations 2019 (SI 2019/325)
8 An MMF which is EEA UCITS in TMPR could seek recognition under section 272 of FSMA without an equivalence determination under Article 4A of the UK MMF Regulation. However, section 272 is only available for funds that do not have the benefits of section 271A (the OFR for retail funds). Currently an FCA Direction prevents funds in the EEA UCITS TMPR from exiting that TMPR via s272.

2.27 The Government recently legislated for a new regime for non-UK funds, the Overseas Funds Regime (OFR)[9]. This regime has two parts for MMFs.

i. First, such a non-UK MMF cannot be marketed to investors in the UK unless it is authorised and supervised in a country or territory which HMT has deemed equivalent under Article 4A of the UK MMFR. Before making a decision on equivalence, HMT will need to determine as to whether the law and practice of the relevant country or territory imposes requirements on MMFs which have equivalent effect to the requirements of the UK MMFR (an 'MMF equivalence determination').

ii. If there has been a UK MMFR equivalence determination, then there are two possible routes under the Financial Services and Markets Act (FSMA) by which such a non-UK MMF can be marketed to UK investors.

If to be marketed to Retail investors:

- For jurisdictions where HM Treasury has made an equivalence determination under sections 271A to 271S of FSMA (the OFR for retail funds[10]), a non-UK MMF domiciled in that jurisdiction can market to retail investors if the fund is recognised by the FCA[11].
- In the absence of an OFR for retail funds equivalence determination, the non-UK MMF manager can apply for the fund to be individually recognised under section 272 of (FSMA)[12].

If to be marketed to Professional investors:

- Alternatively, the fund manager could make a written notification to the FCA under the UK National Private Placement Regime (NPPR). This would allow the MMF to be promoted to professional investors or to other investors where a financial promotion exemption applies. This would be subject to the other NPPR conditions being satisfied[13]. Note that these exemptions allow non-UK MMFs to be promoted to important users of MMFs who may otherwise be categorised as retail clients, such as local authorities, and also larger and more sophisticated corporates and charities where they meet the relevant criteria in the exemptions.

9 The Financial Services Act 2021 introduced the OFR which encompasses two equivalence regimes: one for retail investment funds generally (under sections 271A to 271S of FSMA), and one which MMFs are required to separately meet (under Articles 4, and 4A and 6 of the UK MMFR).

10 Under the OFR for retail funds, HMT would determine whether the overseas jurisdiction's regulatory regime which applies to certain categories of fund gives a degree of investor protection which is at least equivalent to that given by comparable UK funds authorised under FSMA. The equivalence determination applies only to those categories of fund and those jurisdictions specified by HMT. Where HMT has found that the overseas regime provides equivalent investor protection, HMT has a power to impose 'additional requirements' on funds (such as MMFs) to ensure a greater level of comparability and consistency with UK funds.

11 Once an equivalence determination has been made (see Equivalence determinations), retail investment funds (including MMFs choosing to market to retail clients) are required to apply with the FCA to become recognised. A recognised fund is known as a" section 271A scheme".

12 FSMA section 272: this allows a non-UK fund to seek individual recognition from the FCA, to be able to market to the general public in the UK. In broad terms, section 272 requires the FCA to be satisfied that the scheme provides adequate protection for investors (section 272(2)), among other criteria. 'Adequate' is determined by reference to the law and practice applicable to comparable UK schemes authorised under FSMA.

13 The NPPR is a marketing regime which stems from UK AIFMD and requires (amongst other things) cooperation agreements between the UK FCA and the third country regulator of the fund manager. The NPPR does not provide for additional requirements to be imposed on funds.

3 Principles, public policy objectives and discussion of risks

3.1 MMFs can pose risks to the financial system due to how they are used, the liquidity transformation they undertake and their interconnectedness to other important counterparties (e.g. in bank funding markets). These risks were highlighted in the 'dash for cash' episode in March 2020 (see Box 1). Some LVNAV MMFs that invest in private sector assets came close to regulatory thresholds at which point they would have had to consider whether or not to apply liquidity fees, 'gate' withdrawals[14], or suspend entirely. These thresholds may have served as a focus point for investors worried about suspension and may have created a 'trigger point', driving additional redemptions.

3.2 Large scale outflows from a single MMF could raise fears that it and other MMFs could be suspended, triggering further large outflows from other MMFs. Suspension is a tool that protects investors under exceptional circumstances or an idiosyncratic stress. However, if multiple MMFs used by UK investors had suspended in March 2020, there could have been a significant threat to wider UK financial stability. This is because of the way MMF investors, including other open-ended funds, pension funds and insurance companies, use them to manage short-term liquidity and to meet margin calls. MMF suspensions can also have a negative impact on the wider economy. Depending on their level of exposure to MMFs, non-financial corporates and local authorities might not have been able to access enough cash in time to pay creditors, taxes or wages. Swift and decisive central bank actions supported the functioning of the financial system and eased financial conditions, which also reduced the liquidity strains on MMFs. While there was no direct official sector support of the MMFs themselves in the UK or EU, the underlying vulnerabilities within MMFs remain and could crystallise again in the future, including under less extreme circumstances than those in March 2020.

3.3 There are other ways that vulnerabilities in MMFs may affect financial stability, or exacerbate stress, given the role of MMFs in short-term funding markets. For example, a drop in MMF demand for certificates of deposit (CD) or commercial paper (CP) issued by banks can lead to increases in bank funding costs, or difficulties obtaining funding, given the significant footprint of MMFs in the market for sterling CP/CD. Falls in the provision of funding by MMFs in repo markets can also have knock-on impacts on the price and availability of cash for market participants looking to borrow on a very short term basis.

3.4 The UK authorities are therefore looking to:

- **i.** Strengthen the resilience of MMFs and the financial system in supporting the UK economy.
- **ii.** Reduce the need for future extraordinary central bank interventions of the kind that occurred in March 2020.
- **iii.** Support the provision of sustainable and robust cash management financial services that meet the needs of users including at times of financial stress.

14 Where a limit, often proportional/pro-rata, is placed on the amount an investor can redeem.

3.5 As set out by the FSB's October 2021 Final Report, MMFs are subject to two broad vulnerabilities:

i. They are susceptible to sudden and disruptive redemptions; and
ii. they may face challenges in selling assets, particularly under stressed conditions.

These vulnerabilities are due to a number of factors.

3.6 MMFs perform **liquidity transformation**, as the redemption terms of their units are not matched by the liquidity of the assets they hold. The FSB's report noted that, as MMF units can be redeemed daily or even intraday at no or limited cost, MMF investors may find it easier to liquidate MMF units than to sell other assets such as direct investments in money market instruments. When market liquidity becomes scarce and costly, incentives to redeem increase.

3.7 Liquidity transformation can also contribute to a first-mover advantage for redeeming investors in a stress event. Some of the assets held by MMFs may become illiquid under stressed market conditions. Assets such as CP and CD are typically held to maturity and trade infrequently in secondary markets even in normal times. This can affect MMFs' ability to sell these assets to meet redemptions or maintain sufficient cash buffers. Because of this liquidity mismatch, in times of stress early redeemers from the fund are more likely to receive their principal in full and on time – especially if the true costs of that liquidity are not passed on to redeeming investors.

3.8 In December 2019, the Financial Policy Committee (FPC) established three principles for achieving greater consistency between the liquidity of a fund's assets and its redemption terms. These principles relate to:

i. the liquidity of a fund's assets;
ii. the price received by redeeming investors for their units in a fund; and
iii. the redemption frequency and/or length of notice periods

3.9 The FPC has judged that the mismatch between the redemption terms and the liquidity of some funds' assets means there is an incentive for investors to redeem ahead of others, particularly in a stress. This first-mover advantage has the potential to become a systemic risk by driving increasing redemptions.

3.10 In addition to the liquidity mismatch, an additional incentive for pre-emptive redemptions driven by first mover advantage is potentially present in some types of MMF due to their ability to offer **subscriptions and redemptions at par** (a unit price of 100 pence in the pound) – the 'stable NAV' MMFs. Public debt CNAV and LVNAV MMFs may offer this feature. Stable NAV MMFs are explicitly set up so that the cost of liquidity is not passed on to redeeming investors, within defined limits. This is covered in more detail in the policy discussion below, in the 'Removal of stable NAV' section. The majority of sterling MMF assets are in LVNAV MMFs offering a stable NAV.

3.11 As a result of the stress on US MMFs in the 2008 financial crisis, US regulations were reformed so that MMFs used by institutional investors and that invest in private sector assets (mainly Prime MMFs) were no longer permitted to offer a stable NAV. Following this change, and others such as the introduction of gates and liquidity fees for certain Prime MMFs, there was a significant shift in the MMF sector as Government MMFs (which could still offer a stable NAV) grew substantially, while the prime MMF sector shrank in size.

3.12 In addition to the stable NAV issue covered above, other **threshold effects** can impact public debt CNAV or LVNAV MMFs. If they do not meet the 30% weekly liquid asset requirement, and outflows are greater than 10% of assets on a given day, the fund manager must decide whether to make use of liquidity fees, gates, suspensions, or instead to take no immediate action other than fulfilling the obligation in MMFR article 24(2)[15]. Fear about the use of these tools can create a first mover advantage and incentivise pre-emptive redemptions from such MMFs.

3.13 While in the Covid stress these thresholds are thought to have had less of an impact on investor outflows in sterling MMFs, there is more evidence for their impact in EU domiciled dollar MMFs. For US domiciled MMFs, where the threshold is based only on the 30% weekly liquidity level, and not outflows as well, funds with lower liquidity saw increased redemptions.

3.14 Regardless of the impact of thresholds in driving outflows in sterling MMFs, it has become an important metric for investors to monitor. It has led to fund managers of stable NAV MMFs such as LVNAVs often being unwilling to let liquidity drop below 30% despite this being permitted under the MMFR in certain circumstances. This limits the effectiveness of those funds' liquidity buffers. See the 'Removal of threshold effects related to liquidity levels, and usability of liquidity resources' section, below, including for a reference to the UK MMFR Guidance that FCA has published alongside this DP on some of these matters.

3.15 Important context for the possible risks of MMFs is that some investors use them for cash management and as a substitute for bank deposits. The use of MMFs in this way is indicated by their classification as 'cash equivalent' on many users' balance sheets. As stated above, cash equivalence is defined as "short term, highly liquid investments that are readily convertible to known amounts of cash and that are subject to an insignificant risk of changes in value"[16]. However MMFs are investment funds and do not share all bank deposit features:

i. As an investment, MMFs do not guarantee principal, and the investor must bear the risk of loss. MMF investments are equity liabilities, unlike bank deposits which are debt liabilities whose value is supported by equity capital. Another distinction is that an MMF is a pooled collective investment scheme.
ii. Many investors treat MMFs as cash-like, but MMFs cannot guarantee the availability of daily liquidity. Gating (where a limit is placed on the amount an investor can redeem), or fund suspension, is possible in some circumstances and may become more likely in a financial stress, precisely when investors are most likely to need cash. The requirement for the manager to act in the best interest of all fund investors may in certain circumstances lead the manager to conclude that it must suspend the fund.
iii. MMFs do not have access to central bank liquidity facilities and are prohibited from receiving external support under UK and EU MMFR.

3.16 Some investors use MMFs as a cash management vehicle, and may expect their MMF holdings to be available to meet unexpected liquidity needs. If investors assume MMF shares are low risk and resilient and they subsequently turn out not to be, this may trigger these investors to redeem.

15 In broad terms, this is a requirement for the MMF to adopt as a priority objective correcting the imbalance in the MMF's assets taking due account of the interests of unitholders.

16 IFRS IAS 7, UK GAAP FRS 102

3.17 Some MMFs can be highly susceptible to particularly large and sudden cash demands, and a concentrated or correlated investor base can worsen the problem. Market intelligence from March 2020 pointed to a lot of the redemption demands on MMFs coming from large investors who needed to meet margin calls.

3.18 Some of these vulnerabilities are linked. For example, the problem of liquidity mismatch is inherently linked to the extent to which the true costs of liquidity are passed on to redeeming investors, both in normal times and in a stress period. If the costs of liquidity are material and not passed on, then investors may have a greater incentive to redeem before the liquidity cost crystallises in a NAV adjustment. And as noted, stable NAV MMFs are explicitly set up so that the true cost of liquidity is not passed on to redeeming investors, within the defined limits set out in paragraphs 4.50-4.52 in Chapter 4.

3.19 Given these risks, UK authorities are looking to enhance the resilience of MMFs to address systemic risks and reduce the need for future extraordinary central bank interventions to support the sector. In considering further any possible reforms, we will balance these aims with the value of MMFs to users. We are likely to consult on proposals in due course.

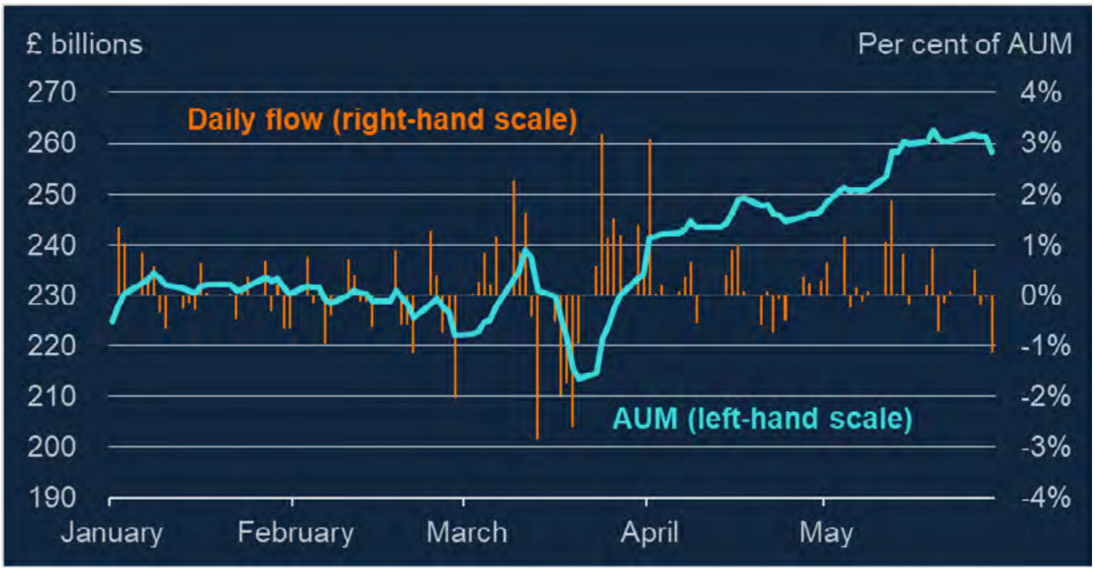
Box 1: March 2020 Covid Stress Case Study

3.20 In March 2020, financial markets reacted to the unexpected effect on economic activity of the pandemic and the public health measures introduced to contain its spread. This reaction began as a 'flight to safety', where investor appetite shifted from risky assets to more safe and liquid assets. It soon morphed into an abrupt and extreme 'dash for cash', in which investors sold even safe assets such as long-term government bonds to obtain short-term highly liquid assets.

3.21 MMFs that invest largely in non-government assets (Prime MMFs in the US, and LVNAV and VNAV MMFs in the EU) saw large outflows. Sterling-denominated MMFs (mostly EU domiciled LVNAVs) saw outflows of around £25 billion; or 11% of their total assets (Chart 4). Market intelligence suggests redemptions were largely driven by investors that use derivatives seeking to meet margin calls by redeeming their investments in MMFs. These outflows were extremely large compared to previously observed sterling MMF flows (see Czech et al (2021)[17]). Outflows across funds were unevenly spread, with three funds seeing outflows between 11-20 March of over 20% of assets (see Chart 5).

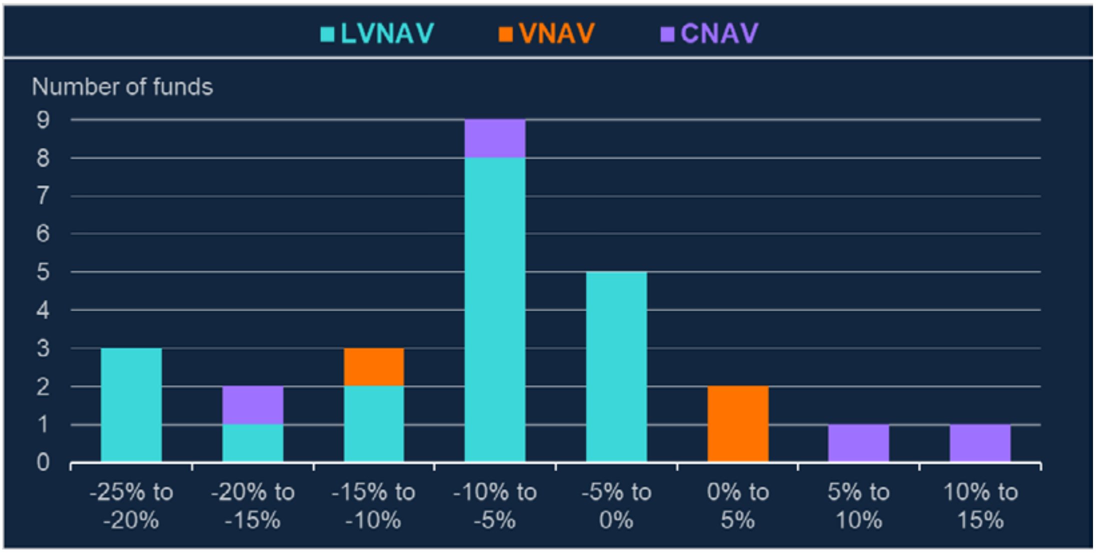
17 "The role of non-bank financial intermediaries in the 'dash for cash' in sterling markets", Czech et al, (2021), Bank of England Financial Stability paper No 47

Chart 4: Sterling MMF AUM and daily flows in 2020



Source: Crane Data

Chart 5: Sterling MMF cumulative flows from 11 to 20 March 2020 by fund



Source: Crane Data, fund websites

3.22 At first, the outflows were met by sterling MMFs running down their holdings of liquid assets, including withdrawing funds from gilt repo markets. But as the outflows increased, MMFs' ability to generate additional liquidity to meet redemptions was constrained, since some of the assets they held – particularly commercial paper (CP) and certificates of deposit (CD) – could not be sold under strained market conditions (see Czech et al (2021)). The degree of outflows varied between sterling MMFs, and some funds saw significant drops in liquidity, coming near or reaching the 30% minimum weekly liquid assets requirement that is relevant for stable NAV MMFs including the LVNAV MMFs. This raised the risk of higher redemptions for these funds for the reasons explained above.

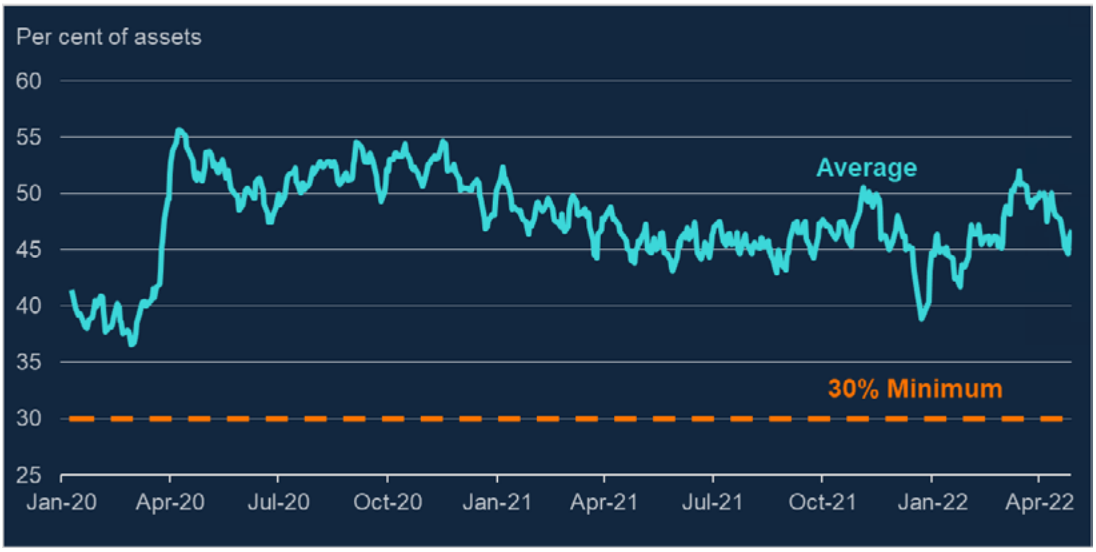
3.23 Other segments of the MMF industry had larger outflows. EU-domiciled US Dollar denominated LVNAV MMFs, also used by UK investors, saw outflows of more than 25% of assets (See FSB Holistic Review). These outflows and market volatility meant some of these funds came close to the 20 basis point threshold at which they would have to switch to variable pricing. If this collar was breached, investors redeeming from these funds would not have received their original investment in full as they may have expected. Euro denominated EU domiciled MMFs investing in private sector assets, both LVNAV and VNAV funds, also recorded significant outflows in mid-March (around 15% of assets). Funds that convert from offering a stable NAV to variable pricing may need to make operational changes. For example, no longer offering intraday redemptions. These changes could increase operational risk for both the fund and its investors, at a time when financial markets are already under stress.

3.24 In the US, outflows from prime MMFs were concentrated in funds aimed at institutional, rather than retail, investors. These outflows were partly due to concerns about prime funds' declining net asset values and the possibility of MMFs imposing liquidity fees or redemption gates should their weekly liquid assets fall below 30% of assets. Government MMFs, however, which invest in relatively more liquid assets, and offer stable pricing, experienced historically large inflows.

3.25 As market volatility subsided in response to central bank actions, including dedicated facilities to support short-term funding markets in some jurisdictions, sterling MMFs and those in other currencies improved their liquidity positions by allowing assets to mature and reinvesting in short-dated deposits, as well as via a resumption of investor inflows (Chart 6).

3.26 Since March 2020, sterling MMFs have increased their holdings of daily liquid assets (DLA) and weekly liquid assets (WLA), holding more liquidity than in the period immediately prior, and significantly more than required by regulation (see see Chart 6).

Chart 6: Sterling LVNAV MMF weekly liquid assets



Source: Crane Data

Notes: Based on a sample of 11 LVNAV MMFs with average total AUM of £129 bn.

3.27 Much of the increase in WLA has come through an increase in DLA, such as overnight deposits and reverse repurchase agreements (reverse repos). MMFs have also increased their holdings of short-term government debt.

4 Tackling risks to the UK financial system - discussion of policy options

4.1 In October 2021, the FSB published its Final Report on policy options to reduce vulnerabilities and enhance the resilience of MMFs. FSB members agreed to assess the vulnerabilities in their own jurisdictions and implement any necessary reforms using the policies outlined in the report.

4.2 This section of the DP discusses the FSB's policy options in the context of UK financial stability. The overall aim is to strengthen the resilience of MMFs and reduce the likelihood of future extraordinary central bank interventions of the kind that occurred in March 2020, ensuring that the financial system provides cash management financial services even during times of stress. Any proposals would be formally consulted on and informed by cost benefit analysis, which in part is likely to take into account the reduction in systemic risk and the increase in investor protection that could result.

4.3 In this assessment, UK authorities have been guided by the FPC's three key principles for fund design (see paragraph 3.8 in Chapter 3). Those principles intend to deliver greater consistency between the liquidity of assets and funds' redemption terms. Redeeming investors should receive a price for their units in the fund that reflects the discount needed to sell the required portion of a fund's assets in the specified redemption period, ensuring fair outcomes for redeeming, investing, and remaining investors. Redemption periods should reflect the time needed to sell the required portion of a fund's assets without discounts beyond those captured in the price received by redeeming investors. Therefore, the MMF reforms discussed in this section must be considered as a set, and not individually.

4.4 Feedback from this DP will help inform the calibration of potential policy changes to asset liquidity requirements and MMF redemption terms that addresses systemic risk whilst taking into account potential impacts on the provision of services to investors.

4.5 This work remains an international effort. Other FSB members, including the European Union (where over 90% of total sterling MMF assets are based), are also reviewing the rules that govern MMFs in their jurisdiction. UK authorities are committed to consistently high common global standards in the international financial system and welcome funds domiciled in other jurisdictions to market to UK investors in accordance with the UK regulatory framework that governs such activities.

4.6 Following the outcomes of these policy developments, HMT can under UK MMFR Article 4A consider whether non-UK domiciled MMFs face a regulatory and supervisory regime that has equivalent effect to the MMF regulation in the UK (as set out in Chapter 2). UK authorities must ensure that MMFs that undertake liquidity transformation, primarily in sterling, face sufficiently robust regulatory requirements if they are to market to UK investors. If policy approaches do not result in equivalent levels of resilience across jurisdictions, the resulting opportunity for regulatory arbitrage and spill-overs could result in a significant risk to UK financial stability.

4.7 The combined impact of both international and UK policies will determine the nature and extent of the systemic risk posed by MMFs. All authorities will need to ensure the financial stability risk is addressed. The best way of doing that is to work collaboratively across jurisdictions to ensure that reforms globally meet the FSB's objectives and strengthen the resilience of the global financial system. International cooperation has enhanced the resilience of the banking sector following the global financial crisis and UK authorities are leading international work on tackling vulnerabilities, reducing risks, and raising standards in non-bank financial institutions.

Asset-side reduction in liquidity transformation

4.8 One way to enhance the resilience of MMFs is to reduce liquidity transformation by requiring them to hold more liquid assets. Larger holdings of more liquid assets that are more readily convertible into cash either through their ability to be sold, or by maturing within a shorter period, would increase the ability of MMFs to meet redemptions.

4.9 As seen during March 2020, MMFs may not be able to use all liquidity resources equally to meet redemptions. Low levels of liquidity resources may cause investors to fear they will be unable to redeem in the future, and so prompt them to redeem earlier than they otherwise would. MMF managers may anticipate this and so seek to hold higher levels of liquid assets. The level at which MMF managers become concerned about investor redemptions may depend partly on regulatory thresholds (see 'Removal of threshold effects related to liquidity levels etc' section below). But even without those thresholds, it is likely that MMF managers will be reluctant to let liquidity resources fall too far.

4.10 Some combination of increases in liquidity requirements and making liquidity resources more usable would strengthen MMFs' ability to meet redemptions in stressed times. This would reduce the chance of redemptions resulting in the suspension of one or more MMFs. As discussed in Box 1, in March 2020 some sterling MMFs experienced outflows over 20% in just over a week. Some were unwilling to allow their WLA resources to fall below the 30% WLA threshold (as relevant e.g. for LVNAV MMFs), even though the relevant legislation permits this in certain circumstances, including in relation to redemptions. These two facts suggest that 50% WLA would have been needed to ensure that all MMFs could meet the redemption flows seen in March 2020. Other factors that might affect the appropriate level of liquidity resources include whether or not asset sales can be relied upon in a future stress to fund redemptions, and whether or not central bank action to calm financial markets and ease redemption pressure occurs in a future stress.

4.11 There are a number of ways to increase the liquidity of the assets MMFs hold, including some options already enacted in the UK/EU MMFRs:

- **i.** Placing minimum requirements for holdings of assets that mature within a certain amount of time (such as daily or weekly liquid assets)
- **ii.** Placing minimum requirements for holdings of assets that tend to exhibit higher market liquidity (such as holdings of high quality public sector debt)
- **iii.** Placing maximum limits on holdings of assets that tend to have lower market liquidity, particularly under stress, such as holdings of private sector issued certificates of deposit (CD) and commercial paper (CP)

Placing minimum requirements for holdings of assets that mature within a certain amount of time (such as daily or weekly liquid assets).

4.12 MMFR currently imposes requirements on MMFs to hold minimum amounts of both daily liquid assets (DLA) and weekly liquid assets (WLA).

Requirement	Standard VNAV	Short term VNAV	LVNAV	Public Debt CNAV
DLA	7.5%	7.5%	10%	10%
WLA	15%	15%	30%	30%

4.13 Eligible assets include those maturing within the given time frame (daily or weekly). For PDCNAV and LVNAV MMFs, a certain amount (up to 17.5%) of high quality government short term debt may also count towards WLA if they can be redeemed and settled within one working day. VNAV funds can also include a certain amount of shares in other MMFs as WLA.

4.14 The speed with which shocks can spread through financial markets may limit MMFs' ability to build liquid assets buffers through maturing assets and subscriptions. The UK authorities are therefore considering whether significant increases to liquidity requirements for MMFs would helpfully build additional resilience to stressed market conditions. Increases in DLA/WLA requirements, compared to the options discussed below, would allow MMFs more flexibility on which assets they invest in to meet the higher requirements.

Placing minimum requirements for holdings of assets that tend to exhibit higher market liquidity such as holdings of high quality public sector debt.

4.15 This option would require MMFs to hold a certain amount of assets such as short-term government debt, and could be required alongside DLA/WLA requirements (for example see the European Systemic Risk Board (ESRB) recommendations for EU domiciled funds). This short-term debt is typically more liquid than private sector debt such as CP/CD, and so would reduce liquidity mismatch, and facilitate meeting large redemption requests. However, in periods of stress, it may lead to multiple MMFs seeking to sell government debt simultaneously, which – if these holdings are material relative to the size of the overall market – may lead to impaired market functioning and contagion to other markets.

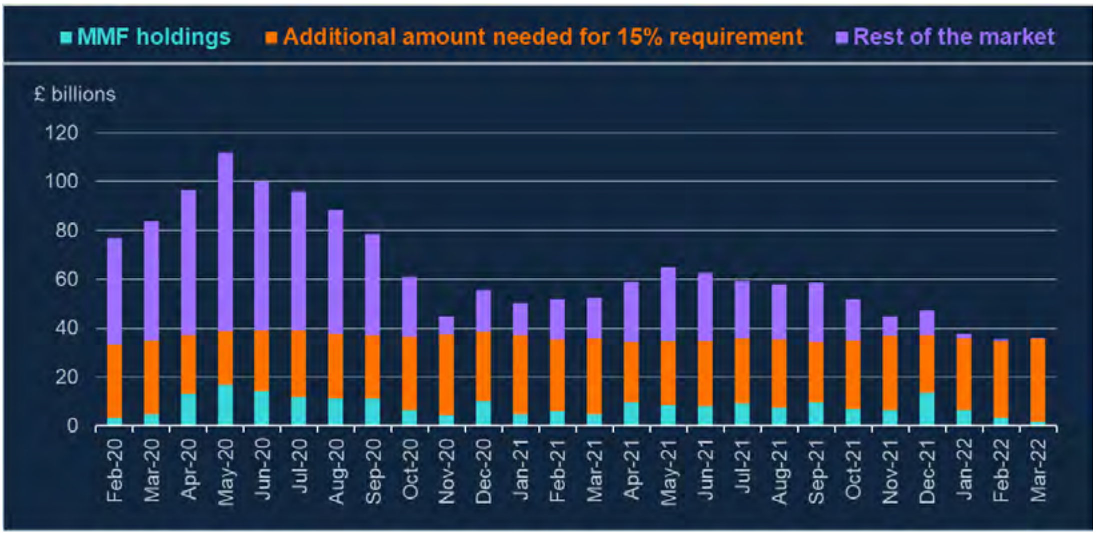
4.16 The eligibility of assets to meet new requirements would need to be considered carefully, as liquidity within government debt markets can also vary between issuers. Reverse repurchase agreements (reverse repos) secured by public debt may, in principle, be eligible to meet a public debt requirement. This would make it easier for MMFs to meet such requirements. If the aim is to reduce liquidity mismatch, the reverse repo should be of the same maturity as the settlement period for government debt.

4.17 At one extreme, MMFs could be restricted to investing only in short-term, high quality government debt (including reverse repos backed by government debt). Government focused MMFs are currently most prominent in US dollar denominated MMFs (in both the US and in the EU domiciled funds – the latter typically being in the PDCNAV form), reflecting a range of factors including investor preferences, regulatory reform, and the large size of the market for US short-term government debt. Permitting the use of 'government MMFs' only (restricting UK MMFs to invest in government or government backed debt only) would likely increase the resilience of the UK MMF sector. However, the size of the sterling MMF market is currently significantly larger than the combined size of UK Treasury bill and sub 1-year maturing UK gilt market. Therefore such a requirement may substantially restrict the total size of the sterling MMF market.

4.18 A less extreme option would be to require MMFs to hold a minimum proportion of assets in public debt instruments. Sterling MMFs increased their holdings of Treasury bills, one form of short dated UK government security, following the start of the pandemic, but they have retained a relatively small share of the market (see chart below). This share rises and falls as the overall size of the outstanding stock of UK Treasury bills falls and rises over time. Sterling MMFs can, in principle, invest in UK gilts with less than 1 year residual maturity, but in practice they rarely choose to do so. This may be in part due to higher interest rate risk on longer maturity assets.

4.19 Even an MMF public debt requirement of 15%, as being considered by some authorities in the EU, could pose challenges if such a policy were applied to all sterling MMFs. If it was met solely by holding UK Treasury bills, MMFs would have accounted for a significant share of past Treasury bill issuance (orange bars in Chart 7). Whether such a concentration would in fact occur depends on several factors, including whether there is a supply response to the increased demand for Treasury bills and whether there is less demand for MMFs that are subject to that constraint. Absent any supply or demand response, concentrated ownership of Treasury bills by a single set of investors would have implications for the dynamics of the market, reducing the diversity of ownership and potentially increasing the volatility in prices, volumes and liquidity conditions. Such potential outcomes would need to be considered carefully when assessing the costs and benefits of potential policy options.

Chart 7: Sterling MMF holdings of UK Treasury bills



Sources: UK Debt Management Office, Crane Data, Bank of England calculations

4.20 UK authorities are conscious of the potential implications of suggesting changes for UK MMFs that would not necessarily be practical if they were applied across all sterling MMFs.

Placing maximum limits on holdings of assets that tend to exhibit lower market liquidity, particularly under stress (such as holdings of private sector issued CD and CP).

4.21 This option would place an upper limit on the amount of less liquid assets an MMF can hold, such as CP and CD. Generally (i.e. under normal market conditions) MMF assets are held to maturity. While CP/CD can often be sold in normal conditions, they trade infrequently. In stress periods, when flows are typically one way (e.g. more sellers than buyers), it can be difficult to sell, as in March 2020. This reform option would have knock-on impacts on bank funding markets, as it reduces MMF demand for CP/CD. Such a reduction could also make banks less willing to accept deposits from MMFs. Market intelligence suggests deposits are often offered to MMFs in order to maintain relationships and therefore the market for CP/CD.

4.22 UK authorities are considering whether to consult on significantly increasing the liquidity requirements for UK domiciled MMFs that invest in private sector assets. In considering how much it might be appropriate to increase these requirements we will take into account, among other factors, the increase in resilience this may achieve, the collective impact of policies in other jurisdictions, as well as the impact on MMFs, their users and on the markets they operate in.

Discussion questions:

Q1: At what point might higher minimum liquid asset requirements start to affect the operation of and demand for MMFs? What impacts might you anticipate? How would you quantify that effect for different levels of DLA and WLA? For example, at an additional 20 to 40 percentage points for minimum WLA (as applied to both LVNAV and VNAV funds).

Q2: What is your view on the feasibility of a requirement for UK MMFs to only invest in public debt? Do you think such an option would need to permit reverse repurchase agreements secured on public debt to be feasible? How should requirements take into account differences in the liquidity between different types of public sector debt?

Q3: What is your view on the impact of a maximum limit on holdings of private sector assets? For example, a maximum of 40%? How might issuers respond if there was a change in demand for those assets from MMFs?

Q4: What is your view on the relative benefits and costs of the different types of asset requirements, such as increasing minimum DLA or WLA, requiring minimum public sector debt holdings, or imposing a maximum limit on holdings of CD/CP (or a combination of those measures)? Please consider increased resilience for MMFs in times of financial markets stress as part of your answer. If possible please provide data to support your views.

Removal of threshold effects related to liquidity levels, and usability of liquidity resources

4.23 Liquid assets (liquidity resources) are only useful if they can be drawn down when the fund faces increased pressure from redemptions. However, falling liquidity resources may be a sign the fund is in distress and may itself trigger further investor redemptions.

Threshold effects related to liquidity levels

4.24 There is widespread agreement across jurisdictions that requirements for managers of some types of MMF to consider imposing 'fees and gates' under certain conditions unnecessarily drove more investor redemptions in the March 2020 stress. The theory is that investors saw the links with the 30% minimum for weekly liquid assets (e.g. as for UK/EU CNAV and LVNAV MMFs, and US Prime MMFs) as a 'bright line' that would/could lead to 'fees and gates'. This resulted in investors monitoring MMF liquidity and redeeming ahead of the fees and/or gates being imposed. There is some evidence for this effect from the main MMF jurisdictions such as the US and EU. This effect exacerbates 'first mover advantage' (FMA).

4.25 Under the UK MMFR, there are certain conditions under which managers of those MMFs permitted to run a stable NAV (LVNAV or public debt CNAVs) are required to impose or consider whether to impose fees or gates.

4.26 There may be views in the market that under UK MMFR, LVNAV (and PDCNAV) MMFs that go under the 30% minimum for weekly liquid assets are essentially certain to impose fees or gates under article 34 of the UK MMFR. As the FCA confirmed in its Guidance of 23 May 2022 (FG22/3) , any such views of the UK MMFR are incorrect. However, if a LVNAV or public debt CNAV has weekly liquid assets below 10% of total assets, it must impose a fund suspension or liquidity fees.

4.27 To address this problem, UK authorities are considering whether to remove all links between specific liquidity levels in these types of MMF and the formal need for the manager to consider or impose fees, gates or suspend the fund. UK authorities believe that removing the formal link between liquidity requirements and the compulsory need for decisions on gates, fees or suspension, may increase the amount of usable liquidity resources available to MMFs.

Q5: **Do you agree that the regulatory links discussed in this section exacerbate first mover advantage and can drive additional unnecessary investor redemptions in a stress? If so, how much of a problem does it cause and how would you quantify it? Would you support a proposal to remove such links? If possible please provide data to support your views.**

4.28 The FSB report discusses the policy proposal of authorities approving the activation of fees and gates. The UK authorities remain of the view that the fund manager is best placed to make a judgement about whether the introduction of liquidity fees or gates is in the best interests of investors. The UK authorities are not minded to consider this policy option further.

Q6: **What is your view on whether authorities should approve the activation of liquidity fees or the imposition of gates?**

Other matters related to usability of liquid assets

4.29 As the FCA confirmed in its Guidance of May 23 2022 (FG22/3), a manager of a UK MMF that has gone under a liquid assets threshold (for example) should take into account fund investors' best interests when deciding what actions to take to return the fund to the relevant minimum, and when balancing the speed at which it returns to that minimum against investor outcomes. We also note that the legislation envisages that MMFs may drop below minimum liquid asset requirements due to redemptions, or reasons beyond the manager's control (see MMFR Articles 24(2) and 25(2)).

4.30 There are additional ways to make liquid resources more usable. In banking, the usability of capital resources is improved by making those requirements dynamic, such as with the countercyclical capital buffer for banks (CCyB). And in other contexts, requirements are defined as an average over a period rather than a fixed amount to be met. Those mechanisms are designed to reduce the stigma for an institution failing to meet requirements. This reduces the risk that less sophisticated investors might respond negatively to such failures, whilst still permitting maximum transparency and information for sophisticated investors.

4.31 In the context of MMFs, several options are possible. These include:

- **i.** Allowing authorities to change the level of requirements dynamically in a stress.
- **ii.** Defining liquid asset requirements as an average over a period of days.
- **iii.** Allowing authorities to change the definition of the period over which requirements should be met.

4.32 These options do not affect the actual level of liquidity resources available to an MMF, but should positively influence how investors may perceive and react to changes in their liquidity levels. These options would be designed to reduce precautionary redemptions in stress and to build resilience in good times ahead of future stress.

4.33 It is also important to remember that MMF managers can choose to apply an anti-dilution tool where available or suspend the fund, at any point if they judge this to be in the best interests of fund investors. A constant NAV may have to be abandoned, per MMFR rules, and/or the best interests fund investors, if circumstances demand it.

4.34 UK authorities are considering other changes that may further increase the amount of usable liquid resources available to MMFs, including through different methods of defining requirements.

Q7: **Do you agree that the usability of liquidity resources could be improved by changes to how they are defined, such as defining requirements as an average over a period, or allowing authorities to change aspects of the requirements in a stress? What other changes should be considered that might make liquidity resources more usable? Which changes might be most effective at making buffers more usable? If possible please provide data to support your views.**

Q8: Under what circumstances do MMF managers consider selling assets to meet redemptions? How might that change as a result of policy options aimed at making liquidity buffers more usable (including policies that aim to reduce threshold effects, and policies that change how liquidity requirements are defined)?

Impose on redeeming investors the cost of their redemptions

4.35 As noted in the October 2021 FSB report, MMFs' susceptibility to sudden and disruptive redemptions occurs partly because their redemption terms are not aligned with the liquidity of their assets. Shareholders may be able to redeem at no cost, even when market liquidity is otherwise scarce and costly. These features can motivate redemptions and create a first-mover advantage for redeeming investors, especially in a market stress.

4.36 If investors leave an MMF with a value that is too high, in that it does not reflect the true cost of liquidity, this disadvantages remaining or subscribing investors. This is true even if no asset sales are necessary to fund the redemption, because the redemption would have decreased the overall liquid assets remaining in the fund. The remaining investors may also take a capital loss that should have been at least in part shared with those who had left the fund earlier. These effects are referred to as 'dilution' of the remaining investors.[18]

4.37 One way to minimise the first mover advantage for redeeming investors is to impose on them the true costs of their redemptions. Options that deliver this in practice would avoid these harms and vulnerabilities, and affect investor behaviour by reducing the incentive to redeem for precautionary reasons. This could reduce pressures on MMFs compared to other sources of liquidity when the demand for liquidity increases (or when market liquidity becomes scarce), as well as deliver better and fairer investor outcomes.

4.38 Swing pricing/anti-dilution adjustments or anti-dilution levies/liquidity fees are examples of liquidity management tools (LMTs). They can be used to reduce dilution, including dilution from bid-offer spreads widening in a stress and the estimated market impact of asset sales. The market impact component can increase when market liquidity becomes scarce, or when the size of asset sales increases. The market impact component is particularly likely to increase during times of market stress[19].

4.39 Stable NAV MMFs (public debt CNAV and LVNAV) are explicitly set up to provide redemption at par during normal market conditions, and to tolerate a certain defined amount of dilution to deliver that. LMTs can be used to prevent material dilution, and are more likely to be used in response to larger than normal redemptions[20]. Ensuring that the cost of redemptions are imposed on redeeming investors needs to be considered alongside the dilution issues raised by stable NAV operation in general. Investors should be aware that a stable NAV may have to be abandoned for various reasons and at any time, and the manager could also use liquidity fees or other LMTs - no MMF investment has guaranteed redemption terms.

18 Dilution also occurs when investors make subscriptions at a price lower than the NAV of the fund. Whilst this is an issue for investor fairness, the systemic risks from such dilution is lower than that for redemptions.

19 It can increase significantly when the marginal buyer shifts from one investor type to another, for example from dealers to hedge funds.

20 A stable NAV MMF that is redeeming all investors at par at a given time will not be using a LMT at that time.

4.40 UK MMFs are either UK UCITS or UK AIFs (whether FSMA authorised AIFs or otherwise). All managers of UK UCITS and UK AIFs have obligations to act in the best interests of the fund and the investors, and to treat them fairly[21]. As part of this, managers should consider the fairness of the outcomes for unitholders entering or leaving the fund, and managers may use a LMT to reduce dilution as part of acting in the best interests of the fund investors.

4.41 With swing pricing (also known as an anti-dilution adjustment), the price of a single-priced fund is modified, either upwards in the case of a net inflow, or downwards in the case of a net outflow, to reflect the actual or estimated level of dilution (the swing factor). So all transactions at a given valuation point have the same dilution adjustment, whether the investors are buying or selling.

4.42 Liquidity fees and anti-dilution levies operate on a similar principle, but apply to individual transactions, rather than the NAV of the whole fund, as with swing pricing.

4.43 The managers of all UK MMFs have provided in the relevant fund prospectus for one or more LMT to be available. Some UK managers have provided for swing pricing/anti-dilution adjustments, others for anti-dilution levies / liquidity fees. Some have provided for both. One runs the fund on a dual priced basis[22]. We acknowledge that stable NAV MMF managers generally prefer to provide for anti-dilution levies / liquidity fees, as it fits the operation of their funds better. Despite the disruption in financial markets in March 2020, no single priced UK MMF imposed liquidity fees or other LMTs on redeeming investors.

4.44 In general, MMFs managers might not apply a LMT because they did not think that material dilution was occurring, or because they may fear the potential stigma of being the first to do so, and that their imposing a LMT would lead to increased redemptions. One way to reduce stigma would be for the circumstances under which swing pricing or liquidity fees would be used to be made clearer in advance of a stress.

4.45 The UK authorities believe that for MMFs, the manager should avoid material dilution by ensuring that the cost of liquidity, where material, is substantively passed on to redeeming investors. UK authorities are considering whether this aim should be set out clearly in the UK regime. We will also consider whether the UK MMF regime should set out rules on matters relating to MMF managers' use of LMTs, such as liquidity fees or swing pricing. Options include mandating their use and setting rules on their parameters and how they should be calibrated. This could include specific rules on how MMF managers approach the task of calculating estimated market impact and other relevant matters. Any new policies should not introduce new threshold effects. We will also consider whether changes to the current MMFR general valuation rules may be necessary, including the mark to market and mark to model provisions in UK MMFR Article 29.

4.46 While acknowledging the wider applicability of some of the questions below to other types of OEFs, we are asking stakeholders to limit their answers to their views on MMFs.

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21 See COLL 6.6A.2R (Duties of AFMs of UCITS schemes to act in the best interests of the scheme and its unitholders) and COBS 2.1.4R (AIFMs' best interests rules)

22 For some funds, units are priced differently for redemptions and subscriptions. The manager offsets dilution costs by setting the fund's unit cancellation price at the NAV based on the bid prices of the underlying investments; and the fund's unit issue price at the NAV based on the offer prices of the underlying investments. The fund manager has the discretion to set its unit dealing prices at a tighter spread than the full spread between the issue and cancellation prices.

Q9: Are you aware of any cases in which a sterling MMF uses or has used liquidity fees or swing pricing? If yes, please provide details if possible.

Q10: Do you agree that UK MMF rules should be clear on the need for the manager to avoid material dilution? Please explain your response.

Q11: Do you think UK rules should be specific on how MMF managers should avoid material dilution in the way their funds are run, for example, with rules and guidance relating to LMTs? Please explain your answer.

Q12: Do you have any comments on the current MMFR valuation rules in relation to this issue?

4.47 The FSB report considered a policy idea whereby authorities would take powers to have the ability to order MMF managers to apply swing pricing in a certain way during financial stress periods (so-called 'macro-prudential swing pricing')[23]. Under this proposal, the authorities would set the swing parameters (factor and threshold). These could be calibrated by authorities on systemic risk indicators common to all funds, as well as specific fund-level factors (e.g. inflows/outflows, portfolio liquidity)[24]. In normal times, activating swing pricing (or other LMTs) would be left at the discretion of the MMF managers.

4.48 Such a policy would require authorities to define 'stress periods' and how they would calibrate and choose the swing parameters in real time. As the FSB Report noted, this would be challenging. The measure would depend on authorities being able to adequately monitor liquidity conditions in money markets as well as in individual funds (including having the necessary granular data). The judgement authorities make could differ from that the MMF manager would have reached in light of all the information it has. The authorities would take responsibility for the actions they force a MMF manager to take, which could be shown with hindsight to have been harmful to some or all relevant investors. The potential for authorities' intervening in this way during episodes of stress introduces additional risk and uncertainty for MMF investors. UK authorities believe that the MMF manager should be best placed to make a judgement about use of LMTs such as swing pricing, including in a period of financial stress. UK authorities will keep the use of LMTs by MMF managers under review.

4.49 In the context of other policies on swing pricing, and of the existing macro-prudential powers of the FPC, the UK authorities are not currently considering the macro-prudential swing pricing option[25].

Q13: Do you have any comments on the macro-prudential swing pricing option?

23 This policy idea is predicated on either all MMF managers being forced to provide for swing pricing in each funds' documentation, or on the ability of this power to be used by authorities even where a manager has not done so.

24 The use of systemic risk indicators could enhance the macroprudential component of this tool. These indicators could be chosen to reflect stress in money markets e.g. abnormal volatility in the yields of CP/CDs or the widening of short-term sovereign spreads.

25 The FPC is responsible for financial stability oversight in the UK. It has powers of direction and powers of recommendation, which can be used to help the FPC achieve its role in identifying, monitoring, and taking actions to reduce or remove systemic risks with a view to protecting and enhancing the resilience of the UK financial system.

Removal of stable NAV

4.50 Stable NAV refers to the ability of some MMFs (LVNAV and PDCNAV MMFs) to maintain subscriptions and redemptions at par despite some volatility in the value of the underlying assets. 'Par' refers to a unit price of 100 pence in the pound. As an integral part of offering redemptions at par, under the MMFR these funds are able to calculate the value of certain of their assets for redemption and subscription purposes using the amortised cost ('straight line') accounting methodology[26], rather than mark-to-market or mark-to-model (as well as round their NAV to 2 decimal places). Amortised cost is a methodology suitable for assets that will be held to maturity, and it does not take into account day-to-day fluctuations in an asset's value that may be caused by changes in market conditions or factors specific to the issuer. The rules explicitly provide for the par redemption price to be allowed to deviate from the underlying real NAV of the fund (as calculated using mark-to-market or mark-to-model), within certain limits either up or down. These 'collars' are 50 basis points (bps) up or down for CNAVs, and 20 bps for LVNAV MMFs. If the collar is breached, the fund needs to convert to dealing at a floating NAV as for a VNAV MMF. Users of stable NAV MMFs include larger non-financial corporates, local governments and charities, among others.

4.51 Therefore, rules for stable NAV MMFs allow a certain defined amount of potential dilution, as investors redeeming at the start of a stress can get out at par in a way that does not reflect the true cost of liquidity/the true (lower) value of the MMF's portfolio, to the disadvantage of remaining investors. If the MMF is forced to cease redemptions at par due to a decline in the real NAV, then subsequent redemptions will incur a capital loss of at least minus 20 or 50 bps. Such losses will not have been shared with those who redeemed earlier at par, when this was higher than the real NAV. Even if a stress in which real NAV dips below par ends and the MMF had maintained redemptions at par, those remaining in the MMF throughout will very likely have held a more illiquid portfolio and will have run the risk that other investors' redemptions could precipitate the MMF to breach its collar. The collars represent a breakpoint or threshold, and investors may be incentivised to redeem before the fund breaches the collar and the redemption price moves sharply from par.

4.52 Therefore stable NAV MMFs incorporate additional first mover advantage compared with floating NAV open-ended funds in general. As well as being a source of investor detriment, this could drive additional redemptions from such MMFs in a stress in a way that undermines financial stability. There is a question as to whether the possible dilution and related harms related to stable NAV operation are material.

4.53 As noted, evidence from major MMF domicile jurisdictions strongly suggests that in a large-scale market stress, private sector-backed MMFs suffer large outflows, while public debt backed MMFs receive large inflows. LVNAV MMFs invest predominately in private sector assets, while the PDCNAV must invest almost entirely (minimum 95.5%) in public sector assets. The evidence also indicates that public sector debt markets are less likely to become seriously illiquid in large market stresses than private sector debt markets. As set out above, the potentially material harms associated with stable NAV MMFs apply in practice when there are sustained redemptions and severe market stress in the relevant underlying asset markets. Therefore, we consider that these would potentially involve LVNAV MMFs, and would not likely apply in a material sense with PDCNAVs.

26 For LVNAV MMFs, amortised cost can be used for assets with a residual maturity of up to 75 days. There are other detailed requirements for use of amortised cost in the MMFRs.

4.54 Most sterling MMFs used by UK investors are LVNAV. Most of these are domiciled in the EU and their ability to market to UK investors is defined under post-Brexit regimes (see Chapter 2). A small number of LVNAV MMFs are currently domiciled in the UK. All these LVNAV funds must be operationally prepared to switch to a floating NAV if they breach the LVNAV collar or if the fund experiences negative returns. A stable NAV cannot be maintained if MMF returns become negative. This is because when rates are positive, MMFs can distribute a return to shareholders consistent with the interest earned on the assets. However, when rates are negative, the only way to pass on a negative return is for the NAV to fall below 100. Euro denominated PDCNAV and LVNAV MMFs, and all sterling PDCNAV MMFs, have switched to using a floating NAV and changed from 'distributing' to 'accumulating' share classes. Offering a stable NAV therefore also creates a structural change cliff-edge at very low interest rates.

4.55 We acknowledge that stable NAV features are important to some MMF investors. Alternatives for investors who cannot tolerate capital fluctuations day-to-day (as above, all MMFs are products with investment risk) and who wished to keep their money in UK entities could make deposits with UK banks. Alternatively, they may be able to invest in UK PDCNAVs, should any be launched, although the limited depth of sterling money markets may put a cap on the overall possible growth of the sterling PDCNAV MMF sector, wherever domiciled.

4.56 UK authorities are considering whether to consult on removing stable NAV from LVNAV MMFs. Any such change would not on its own address vulnerabilities associated with liquidity mismatches in private debt MMFs more generally. LVNAV MMFs would then be structurally similar to short term VNAVs . Depending on other policy choices, it is possible that LVNAV and VNAV liquidity requirements could continue to differ[27]. This would make them likely to offer different rates of return to investors. If investors value the higher yield on offer from lower liquidity requirements, they may choose to move their investments to the more risky product. That, in turn, may decrease the overall resilience of the sector.

Q14: **Do you think the investor protection and possible financial stability harms set out for LVNAVs are, or could be material? Please explain and provide evidence, including any relevant data, to support your conclusion on this.**

Q15: **Do different types of investor (e.g. retail, corporate or financial) value stable NAV offerings differently? What would be the implications for those investors if the stable NAV features of the LVNAV funds were removed?**

Q16: **What alternatives are there for MMF users who specifically need capital value preservation? How do the costs and risks of those alternatives compare with MMFs?**

27 This would be the case under, for example, the ESRB and ESMA recommendations.

Q17: For investors in sterling government MMFs, what was the impact of moving from distributing to accumulating share classes and the associated end of the stable NAV offering? Were there any implications for the accounting treatment of those MMFs? Were there any other costs associated with the change? If possible please provide data to support your views.

Q18: If stable NAV was no longer permitted for UK LVNAV MMFs, and assuming no other changes (e.g. to liquidity requirements), what do you expect to happen to demand for LVNAV funds relative to VNAV funds? What value would there be in retaining LVNAV as a UK MMF type?

Q19: Should UK public debt CNAV MMFs continue to be permitted to operate with a stable NAV?

Liability side reduction in liquidity transformation

4.57 The FSB report set out possible policy options that could reduce liquidity transformation by adjusting the redemption terms of MMF shares, rather than increasing the liquidity of their assets. This would be consistent with the FPC's principles for achieving greater consistency in the design of open-ended funds and aligning the redemption terms of a fund's liabilities with the liquidity of its assets.

4.58 Currently, MMFs typically offer daily redemptions with no notice period, and settlement at T+0 or 1 days. Some MMFs (especially but not only stable NAV MMFs) offer intraday dealing, multiple NAV strikes during the day and T+0 settlement. These liability side policy options include changing rules around:

i. **Dealing frequency** – this refers to how often an investor can subscribe or redeem from a fund. This could be set at less frequently than daily, for example, bi-weekly, weekly or even monthly. This option would allow managers to run the fund to target higher levels of maturing assets/cash balances for the periodic redemption days, in light of the redemptions experienced in normal times. However, it would not necessarily help the manager deal with higher than expected redemption requests on redemption days in a stress.

ii. **Notice periods** – this refers to the period between a redemption request and initiation of the redemption. This could be set at two days, a week, etc. This option would give the manager a chance to calibrate the portfolio to meet known upcoming redemption requests. The longer the notice period, the more this would help the manager, and the more liquidity mismatch would be reduced.

iii. **Minimum settlement periods** – this refers to the period between the initiation of a redemption and the final cash settlement of proceeds. This option would require a longer settlement period than current market norms. MMF settlement periods are often T+0 or T+1. For open-ended funds in general, settlement periods for unit transactions usually reflect the settlement period norm in the market for the underlying assets in which the fund invests.

4.59 Imposing longer minimum settlement periods could reduce liquidity mismatch as it would allow the manager to sell assets and receive settlement monies some time before having to settle the sale of the units by paying out cash to the departing unitholder (although in practice, the manager may likely wait for assets to mature). This option would have a somewhat similar effect to that of introducing a notice period. However, in this case the investor would know immediately at what price they have redeemed their units, although they would have to wait longer for settlement. This is because, with notice periods, investors will not know the price at which they are going to be redeemed until the redemption day. However, policymakers opening up a difference between normal settlement in the underlying markets, and minimum settlement for a fund investing in such a market, would go against a fundamental principle of how open-ended funds operate, in a way that changes to dealing frequency and notice periods would not.

4.60 Variations on these options would likely materially reduce liquidity mismatch in MMFs, depending on how they were calibrated. However, in all cases these options would fundamentally alter the offering to investors, by moving MMFs away from products with at least daily redemptions and T+0 or T+1 settlement.

4.61 Although the UK authorities see potential benefits in principle to liability side policy options to address MMF liquidity mismatch and resilience, they come with implementation challenges, larger potential costs for investors who value daily liquidity and in some cases less clear reductions in systemic risk. Assuming notice periods or other liability side policy options were introduced for UK MMFs, investors that require daily liquidity may need to rely on alternative options for their cash management needs. Other cash management products, such as bank deposits, have different risks and costs associated with them.

4.62 UK authorities are guided by the FPC's principles for open-ended fund design, which seek to achieve consistency between a fund's redemption terms and the liquidity of its assets. To achieve consistency and sufficient resilience for MMFs, UK authorities view increases to the liquid asset requirements and changes to ensure material liquidity costs are passed on to redeeming investors, if sufficient to increase resilience, as likely to be preferable to liability side options. For these reasons the UK authorities are of the view that liability side measures are less likely to be needed if adequate resilience can be delivered by these other policies. We welcome views on their pros and cons of these liability side options.

Q20: In what way might these three types of liability side policy options (reducing dealing frequency, imposing notice periods, and imposing minimum settlement periods) impact MMFs' ability to meet MMF investor needs? How might investors respond to these options? How might it affect investor liquidity management? What alternative cash management options do investors have, and what costs and risks are associated with the alternatives?

Q21: Which investors value intra-day settlement vs end of day settlement (T+0), T+1 or T+2 day settlement?

Q22: **The UK authorities are not aware of any MMFs in non-UK jurisdictions imposing limits on dealing frequency, or having non-zero notice periods, as a matter of general practice. Do you have any information to the contrary?**

Q23: **Do you agree with our assessment that policy options to increase the liquidity of MMFs' assets could achieve the outcome of reducing MMF liquidity mismatch such that these liability side options may not become necessary?**

Liquidity-based redemption deferrals

4.63 The FSB report discusses a policy option of 'liquidity-based redemption deferrals'. One design of this would allow only a fraction of each redemption request to be met on the same day. This fraction (e.g. 10% of holding) would depend on the share of liquid assets held by the fund. The UK authorities consider that this design would introduce the sort of regulatory threshold problems covered in the 'Threshold effects related to liquidity levels' section above related to MMF liquidity levels and the need for managers to consider/impose fees or gates. A design of this option which avoids threshold effects may end up being equivalent to notice periods. As such, UK authorities view asset side liquidity requirements as likely to be preferable to liquidity based redemption deferrals at reducing the liquidity mismatch in MMFs.

Q24: **Would liquidity-based redemption deferrals introduce the sort of regulatory threshold problems covered in the 'Threshold effects related to liquidity levels' section?**

Q25: **Is there a way to design liquidity-based redemption deferrals which avoids threshold effects? Would such a design be useful for MMF managers or investors or both?**

Redemption-in-kind (in specie transfer)

4.64 Redemption-in-kind is permitted for UK funds. This is a mechanism by which funds can distribute the underlying assets on a pro-rata basis to investors, as opposed to paying cash to honour redemptions.

4.65 If it could be transacted instantly with no frictions and for all investor types, redemption-in-kind would significantly increase MMF resilience as it eliminates liquidity mismatch entirely and a fund would never need to gate or suspend. It could also reduce fire sale risk, if investors who don't need the cash but fear losses due to forced sales could choose this option instead of redeeming cash. However, redemption-in-kind does not address wider financial system resilience as it passes the liquidity mismatch onto investors, who may still need to fire sell the assets to obtain the cash they need.

4.66 Redemption-in-kind is occasionally used in day-to-day operations. For example, if a large client moves their sizable money market fund exposure from units in a MMF to a personalised segregated mandate portfolio, moving the assets in specie could reduce transactions costs. We understand that such an arrangement takes weeks to set up and execute.

4.67 Redemption-in-kind is more frequently used in other fund markets, including for example with exchange traded funds (ETFs). It allows authorised participants (APs) to create and destroy ETF units with fewer market transactions than otherwise, and hence lowers overall transaction costs. However, APs tend to have the trading, settlement and custody infrastructure required to take possession of the assets. As the AP is the only counterparty to the fund for the transaction, it makes it operationally easier. Redemptions-in-kind are rarely used with end investors, particularly non-financial investors.

4.68 Redemption-in-kind may not be a practical option in a stress situation. MMFs typically carry well over a hundred separate lines of asset holdings. Some of these will have sizeable minimum holdings amounts, and so could not practically be shared out among numerous unitholders who are unlikely to have large enough exposures to the fund for this to be possible. Moreover, all investors would have to have suitable custody arrangements in place to receive the relevant securities. UK authorities would like to obtain more information on the benefits and costs associated with redemption-in-kind.

Q26: **On what occasions has redemption-in-kind been used for MMFs in the past? Under what kind of circumstances or conditions might it be used in the future? What benefits does it provide to investors?**

Q27: **What are the current barriers to offering redemption-in-kind to investors, either in normal or in stressed market conditions? How might those barriers be reduced or overcome?**

Q28: **Do you have any other comments on the use of redemption in kind for MMFs?**

Issues related to investor concentration

4.69 MMFs with a concentrated investor base, where there are a few dominant investors or a dominant investor type, may be more vulnerable in times of market stress if one or more of the investors seeks to redeem at the same time. The likelihood of even concentrated investors redeeming, including possibly at the same time, will partly depend on the particular characteristics of these investors. A concentrated investor base may not be a material problem with some investors/type of investors.

4.70 Fund managers' monitoring and management of investor concentrations in MMFs aims to reduce the likelihood of destabilising large redemptions. It also aims to mitigate the impact of large redemptions, perhaps through the prior warning the manager may be able to obtain through its relationship with the relevant investors. The UK and EU MMFRs (Article 27, 'Know your customer' policy) set out requirements for MMF managers to establish, implement and apply procedures to anticipate the effect of concurrent redemptions by several investors, taking into account investor concentration and behaviour. There are several other considerations managers must have in regard to this, as set out in the Article.

4.71 The FSB report mentioned the possibility of policy options such as imposing 'hard' investor concentration limits to reduce the risk that redemptions from a single large investor might trigger distress in a particular MMF. It noted that implementing this option could raise operational challenges for asset managers who must access data on investors' shares in a timely and granular manner and manage passive breach limits (e.g. where redemptions from other investors cause an investor to breach a limit through no action on their part). It noted that this option could also lead to higher correlation/contagion between MMFs with similar investor bases, where investors could liquidate positions across many funds simultaneously.

4.72 Under the UK and EU MMFRs, MMF managers have obligations to provide detailed reporting on their MMFs to the relevant competent authorities. This reporting includes information on investor concentration. Another policy option is for rules to be made so that MMF managers have to disclose publicly some information related to the level of concentration in their fund. This might help prospective MMF investors be more aware of and manage the risk of being affected by the behaviour of a few concentrated investors. However, concerned investors may already be able to get client concentration information from the manager. Prescriptive disclosure might also bring its own problems, especially in a financial stress, where increasing concentration could cause additional redemptions. UK authorities welcome views on the issues around disclosure of investor concentration.

Q29: **Do MMF managers effectively manage investor concentration? If you are a manager, how do you monitor investor concentration in practice?**

Q30: **What is your view on hard limits, or a maximum percentage any one investor (or several investors or investor types) could invest in any one MMF?**

Q31: **What is your view on disclosing to investors in general the degree of investor concentration? For example, the percentage held by the top 10 shareholders of an MMF?**

Policies to absorb losses

4.73 As noted above, one of the main vulnerabilities MMFs have is being susceptible to sudden and disruptive redemptions. The prospect of losses may lead to investors pre-emptively redeeming, especially if redeeming investors are able to leave the fund at a price that does not reflect the impact that, for example, negative changes in credit quality (actual or perceived) could have on the portfolio. This latter point therefore has similarities with the issue addressed in the 'Impose on redeeming investors the cost of their redemptions' section above . However, the FSB report describes some additional policy options that are designed to absorb some losses, and so reduce the likelihood of destabilising redemptions. They are:

i. A "minimum balance at risk" – in which a fraction of each investor's shares cannot be redeemed immediately. Those shares that are held back would be subordinated to other shares, and would absorb losses in predefined events over a short period of time.
ii. A capital buffer for MMFs provided by the MMF manager or other external party. It would absorb losses in predefined events.
iii. Allowing sponsor support – MMF sponsors, such as banks or asset managers, would be permitted to provide funds that support the NAV of an MMF should losses occur.
iv. A 'liquidity exchange bank' – this would be a separate institution, funded by MMFs or other MMF stakeholders, that stands ready to purchase assets from an MMF to provide liquidity during stress periods.

4.74 As stated earlier, MMFs are not guaranteed investments, and losses are to be borne by investors. For stable NAV funds (PDCNAV and LVNAV funds), losses will be reflected in the underlying NAV of the fund. If that is sufficient to cause the fund to breach its collar, the MMF must float its NAV, and so pass on losses to investors. For variable NAV funds, losses will be passed on to investors through a change in the price of the fund. As such, MMFs do not need to 'absorb' losses, as they are quite properly passed onto the investors.

4.75 From a financial stability perspective, one of the UK authorities' main concerns is investors pre-emptively redeeming, and crystallising liquidity risk in an MMF, due to issues inherent in MMFs' structure. Investors may be more likely to redeem pre-emptively if mechanisms, such as those described here, provide protection against losses up to a certain size, but not beyond. The minimum balance at risk policy would have at least one of the drawbacks of the (liquidity based) deferred redemption policy option, covered in the liability side reduction liquidity mismatch section above, as such an MMF would no longer offer full-day liquidity to users that value this. Some of these policies would in some cases also fundamentally change the nature of MMFs – from that of the MMF manager as agent, towards MMFs becoming more like banks and/or an extension of other entities' balance sheets. We note that some of these policies would also be hard to calibrate.

4.76 The UK authorities' view is that other policies to address MMF resilience are preferable to the additional 'policies to absorb losses' listed above in this section. UK authorities are not minded to consult on these additional 'policies to absorb losses'.

Q32: Do you have any views on the additional 'policies to absorb losses' discussed in this section?

Issues related to the underlying short-term funding markets (STFMs)

4.77 Vulnerabilities in MMFs partly reflect, and should not be considered in isolation from, the features of and possible vulnerabilities in the underlying short-term funding markets (STFMs), also called the 'money markets'. Especially as MMFs have a large footprint in some parts of the STFMs in some important financial jurisdictions. For example, in the EU, MMFs buy more than half of the commercial paper (CP) issued[28].

28 Reference: ESMA February 2022 MMF Opinion

4.78 One key feature of some parts of the STFMs that MMFs invest in (especially MMFs that invest in private sector assets) is low levels of liquidity, even in normal times. This is not least because assets are often held to maturity. This is often the case with CP and certificates of deposit (CD)[29]. This affects the liquidity of the MMFs and their resilience, as well as possible solutions to improving both of these, as discussed above.

4.79 While recognising the international nature of many STFMs, the UK authorities will keep under review how structural reforms of some parts of the STFMs may be able to benefit those markets and have a positive indirect effect on MMF resilience. This process would require time and internationally coordinated work. The UK authorities are of the view that work focused directly on improving MMF resilience needs to be taken forward now, no matter what reforms of the underlying STFMs may eventually be enacted. In addition, it is not clear that any such measures would or could alter the characteristics of these markets that give rise to illiquidity during stress times.

4.80 The UK authorities are also keenly aware of the impact that some MMF reform policy options could have on the underlying STFMs, and on the economic functions they currently carry out. The UK authorities will take all such impacts, as relevant for UK MMFs, into account when formulating any potential policy proposals.

Q33: Do you have any views on underlying money market issues?

General Discussion Questions

Q34: Are there other threshold effects that may act to exacerbate MMF redemptions in a stress that have not been covered in this DP?

Q35: Are there any other potential rules changes to address MMF vulnerabilities that could have net benefits? If possible please provide data to support your views.

Q36: What are the advantages and disadvantages of MMFs as cash management type products for different types of users compared to other solutions, such as bank deposits? Are there any barriers to persons who need cash management services from using bank deposits, instead of MMFs? Do MMFs provide unique benefits to certain kinds of end users, and if so what are these? Would any of the possible reform options in the DP significantly impact MMFs' ability to provide these specific benefits?

Q37: Should the UK authorities consider rule changes to the information MMFs are required to disclose to investors?

29 The STFMs encompass many products and areas, including some in which MMFs are active, such as short-term and short (remaining) maturity government bills, CD (these are only issued by banks), CP, asset-backed commercial paper (ABCP) and reverse repurchase agreements. Other STFM segments include medium-term notes, variable-rate demand obligations, foreign exchange swaps, securities lending, prime brokerage and lines of credit.

Annex 1
List of Discussion Questions

Q1: **At what point might higher minimum liquid asset requirements start to affect the operation of and demand for MMFs? What impacts might you anticipate? How would you quantify that effect for different levels of DLA and WLA? For example, at an additional 20 to 40 percentage points for minimum WLA (as applied to both LVNAV and VNAV funds).**

Q2: **What is your view on the feasibility of a requirement for UK MMFs to only invest in public debt? Do you think such an option would need to permit reverse repurchase agreements secured on public debt to be feasible? How should requirements take into account differences in the liquidity between different types of public sector debt?**

Q3: **What is your view on the impact of a maximum limit on holdings of private sector assets? For example, a maximum of 40%? How might issuers respond if there was a change in demand for those assets from MMFs?**

Q4: **What is your view on the relative benefits and costs of the different types of asset requirements, such as increasing minimum DLA or WLA, requiring minimum public sector debt holdings, or imposing a maximum limit on holdings of CD/CP (or a combination of those measures)? Please consider increased resilience for MMFs in times of financial markets stress as part of your answer. If possible please provide data to support your views.**

Q5: **Do you agree that the regulatory links discussed in the 'Threshold effects related to liquidity levels' section exacerbate first mover advantage and can drive additional unnecessary investor redemptions in a stress? If so, how much of a problem does it cause and how would you quantify it? Would you support a proposal to remove such links? If possible please provide data to support your views.**

Q6: **What is your view on whether authorities should approve the activation of liquidity fees or the imposition of gates?**

Q7: **Do you agree that the usability of liquidity resources could be improved by changes to how they are defined, such as defining requirements as an average over a period, or allowing authorities to change aspects of the requirements in a stress? What other changes should**

be considered that might make liquidity resources more usable? Which changes might be most effective at making buffers more usable? If possible please provide data to support your views.

Q8: **Under what circumstances do MMF managers consider selling assets to meet redemptions? How might that change as a result of policy options aimed at making liquidity buffers more usable (including policies that aim to reduce threshold effects, and policies that change how liquidity requirements are defined)?**

Q9: **Are you aware of any cases in which a sterling MMF uses or has used liquidity fees or swing pricing? If yes, please provide details if possible.**

Q10: **Do you agree that UK MMF rules should be clear on the need for the manager to avoid material dilution? Please explain your response.**

Q11: **Do you think UK rules should be specific on how MMF managers should avoid material dilution in the way their funds are run, for example, with rules and guidance relating to LMTs? Please explain your answer.**

Q12: **Do you have any comments on the current MMFR valuation rules in relation to this issue?**

Q13: **Do you have any comments on the macro-prudential swing pricing option?**

Q14: **Do you think the investor protection and possible financial stability harms set out for LVNAVs are, or could be material? Please explain and provide evidence, including any relevant data, to support your conclusion on this.**

Q15: **Do different types of investor (e.g. retail, corporate or financial) value stable NAV offerings differently? What would be the implications for those investors if the stable NAV features of the LVNAV funds were removed?**

Q16: **What alternatives are there for MMF users who specifically need capital value preservation? How do the costs and risks of those alternatives compare with MMFs?**

Q17: **For investors in sterling government MMFs, what was the impact of moving from distributing to accumulating share classes and the associated end of the stable NAV offering? Were there any implications for the accounting treatment of those MMFs? Were there any other costs associated with the change? If possible please provide data to support your views.**

Q18: **If stable NAV was no longer permitted for UK LVNAV MMFs, and assuming no other changes (e.g. to liquidity requirements), what do you expect to happen to demand for LVNAV funds relative to VNAV funds? What value would there be in retaining LVNAV as a UK MMF type?**

Q19: **Should UK public debt CNAV MMFs continue to be permitted to operate with a stable NAV?**

Q20: **In what way might these three types of liability side policy options (reducing dealing frequency, imposing notice periods, and imposing minimum settlement periods) impact MMFs' ability to meet MMF investor needs? How might investors respond to these options? How might it affect investor liquidity management? What alternative cash management options do investors have, and what costs and risks are associated with the alternatives?**

Q21: **Which investors value intra-day settlement vs end of day settlement (T+0), T+1 or T+2 day settlement?**

Q22: **The UK authorities are not aware of any MMFs in non-UK jurisdictions imposing limits on dealing frequency, or having non-zero notice periods, as a matter of general practice. Do you have any information to the contrary?**

Q23: **Do you agree with our assessment that policy options to increase the liquidity of MMFs' assets could achieve the outcome of reducing MMF liquidity mismatch such that these liability side options may not become necessary?**

Q24: **Would liquidity-based redemption deferrals introduce the sort of regulatory threshold problems covered in the 'Threshold effects related to liquidity levels' section?**

Q25: **Is there a way to design liquidity-based redemption deferrals which avoids threshold effects? Would such a design be useful for MMF managers or investors or both?**

Q26: **On what occasions has redemption-in-kind been used for MMFs in the past? Under what kind of circumstances or conditions might it be used in the future? What benefits does it provide to investors?**

Q27: **What are the current barriers to offering redemption-in-kind to investors, either in normal or in stressed market conditions? How might those barriers be reduced or overcome?**

Q28: **Do you have any other comments on the use of redemption in kind for MMFs?**

Q29: **Do MMF managers effectively manage investor concentration? If you are a manager, how do you monitor investor concentration in practice?**

Q30: **What is your view on hard limits, or a maximum percentage any one investor (or several investors or investor types) could invest in any one MMF?**

Q31: **What is your view on disclosing to investors in general the degree of investor concentration? For example, the percentage held by the top 10 shareholders of an MMF?**

Q32: **Do you have any views on the additional 'policies to absorb losses'?**

Q33: **Do you have any views on underlying money market issues?**

Q34: **Are there other threshold effects that may act to exacerbate MMF redemptions in a stress that have not been covered in this DP?**

Q35: **Are there any other potential rules changes to address MMF vulnerabilities that could have net benefits? If possible please provide data to support your views.**

Q36: **What are the advantages and disadvantages of MMFs as cash management type products for different types of users compared to other solutions, such as bank deposits? Are there any barriers to persons who need cash management services from using bank deposits, instead of MMFs? Do MMFs provide unique benefits to certain kinds of end users, and if so what are these? Would any of the possible reform options in the DP significantly impact MMFs' ability to provide these specific benefits?**

Q37: **Should the UK authorities consider rule changes to the information MMFs are required to disclose to investors?**

Responses to this DP will be shared with the FCA, Bank of England, and HM Treasury.

Annex 2
Abbreviations used in this paper

Abbreviation	Description
ABCP	Asset-backed Commercial Paper
AIF	Alternative Investment Fund
AP	Authorised Participants
AUM	Assets under Management
CCyB	Countercyclical Capital Buffer for banks
CD	Certificates of Deposit
CNAV	Constant Net Asset Value
CP	Commercial Paper
DLA	Daily Liquid Assets
DP	Discussion Paper
ESRB	European Systemic Risk Board
ETF	Exchange Traded Fund
EU MMFR	EU Money Market Fund Regulation
EUWA	European Union Withdrawal Act 2018
FMA	First Mover Advantage
FMSA	Financial Services and Markets Act 2000
FPC	Financial Policy Committee
FSB	Financial Stability Board
FTSE	Financial Times Stock Exchange
HMT	Her Majesty's Treasury
LIBOR	London Inter-Bank Offered Rate

Abbreviation	Description
LMT	Liquidity Management Tool
LVNAV	Low Volatility Net Asset Value
MMF	Money Market Funds
NAV	Net Asset Value
NPPR	National Private Placement Regime
OEF	Open-Ended Fund
OFR	Overseas Funds Regime
PDCNAV	Public Debt Constant Net Asset Value
Repo	Repurchase agreement
Reverse repo	Reverse repurchase agreement
SONIA	Sterling Overnight Index Average
STFM	Short-Term Funding Market
TMPR	Temporary Marketing Permission Regime
UCITS	Undertakings for the Collective Investment in Transferable Securities
UK MMFR	UK Money Market Fund Regulation
VNAV	Variable Net Asset Value
WAL	Weighted Average Life
WAM	Weighted Average Maturity
WLA	Weekly Liquid Assets

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