

Pressure Valves: Modernising the Collateral Ecosystem



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Introduction

As a fiduciary to millions of savers, BlackRock believes strong, well-functioning capital markets are essential to growth and financial wellbeing. Our experience as a long-term investor shows that resilient market structures – particularly robust collateral frameworks that protect investors against risks such as counterparty credit risk – are critical in times of stress.

Today's collateral framework often requires investors to hold highly conservative cash and liquidity buffers to meet collateral demands. This creates a drag on productive investment and returns.

As we set out in our [ViewPoint: Pressure Valves – Relieving liquidity stress in capital markets](#), post-Global Financial Crisis (GFC) reforms have strengthened the system's resilience to counterparty credit risk, but at the same time hardwired volatility to immediate, synchronised liquidity demands, predominantly in cash. This cash requirement creates a system-wide mismatch: investors hold substantial high-quality liquid assets but must meet margin calls in cash, increasing the risk of forced sales and procyclical market dynamics.

In this paper, we look at how modernising the collateral ecosystem through better use of existing

collateral can ease liquidity stress and strengthen market resilience. We examine drivers of collateral demand – and the frictions that prevent assets from being mobilised quickly, predictably and at scale. We also explore how collateral eligibility constraints, legal and regulatory uncertainty and market infrastructure design mean that, in practice, an asset rich system continues to rely heavily on cash.

For our clients, this is not an abstract question. The availability and usability of collateral shapes portfolio resilience, liquidity costs and the ability to absorb shocks without forced asset sales.

We propose a two-part approach to modernising the collateral ecosystem:

- **Defining 'good' collateral:** A principles-based framework focused on the characteristics of assets that perform reliably throughout the collateral cycle.
- **Enabling collateral mobility:** Reducing frictions to support broader, practical use of these assets through improvements in transferability, regulatory clarity and eligibility frameworks.

Together, this approach aims to increase collateral availability, reduce forced asset sales and strengthen market resilience whilst building on post-GFC reforms.

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Pressure Valves: Modernising the collateral ecosystem

How broader use of high-quality collateral can ease liquidity stress and strengthen market resilience.

Key takeaways and recommendations

- **Post-financial crisis reforms transformed counterparty risk into liquidity risk:** Market volatility is hardwired to immediate, system-wide demand for cash collateral.
- **The global financial system is asset-rich but cash constrained:** Market participants hold substantial high-quality assets, yet collateral frameworks continue to rely predominantly on cash, creating a structural mismatch that can amplify stress.
- **Current dynamics risk reinforcing procyclicality:** In stressed conditions, rising margin calls can force asset sales or costly cash conversion, transmitting liquidity pressure across markets rather than absorbing it.
- **Mobilisation should replace liquidation:** We believe improving collateral availability and usability enables liquidity demands to be met by deploying existing assets, where practical, rather than selling them into stressed markets.
- **The solution is better use of existing collateral, not weaker standards.** Reform should focus on:
 - **Identifying 'good collateral':** Collateral eligibility should be driven by the asset's economic and operational characteristics, including liquidity, transparency, resilience and enforceability, and should not be determined by legal form alone.
 - **Including MMFs and ETFs within bilateral and centrally cleared Initial Margin frameworks:** Exchange Traded Funds (ETFs) and Money Market Funds (MMFs) should be treated in line with the risk of their underlying assets, if they already meet high collateral standards. This should reduce interpretive uncertainty and overly conservative haircut application.
 - **Promoting regulatory and supervisory consistency across bilateral and centrally cleared margin regimes:** Supervisory coordination should seek greater risk-consistency across bilateral (uncleared) and uncleared margin regimes. Treatment of collateral should be guided primarily by economic substance, legal exposure and asset characteristics rather than legal form alone, while recognising that Central Clearing Counterparties (CCPs) may appropriately apply differentiated requirements in some cases.
 - **Complement reform with other Pressure Valves:** These include strengthening repo market capacity and modernising market infrastructure to improve the speed, certainty and flexibility of collateral movement, as we outline in our paper, [*ViewPoint: Pressure Valves – Relieving liquidity stress in capital markets*](#).

Conclusion

For BlackRock, modernising the collateral ecosystem is about helping clients navigate volatility more effectively while supporting resilient capital markets, without weakening standards. Thoughtful reform can reduce pro-cyclicality, preserve market functioning and improve the ability of investors to stay focused on long-term outcomes.

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Initial and Variation Margin – key drivers of collateral demand

The demand for collateral – hence liquidity – does not increase in a uniform way during market stress. It depends on whether Initial Margin (IM) or Variation Margin (VM) is being called – both support resilience, but they behave very differently.

IM is designed to ensure that sufficient resources are available to cover potential losses in the period between a counterparty default and the successful close-out or hedging of positions. It is calculated using historical market data over a defined lookback period to estimate how prices may move under a range of conditions. In cleared markets, CCPs typically use risk-sensitive models, such as Value-at-Risk (VaR), which explicitly incorporate stressed market scenarios. In bilateral markets, margin models are similarly calibrated to capture tail-risk events, ensuring resilience under extreme but plausible conditions.

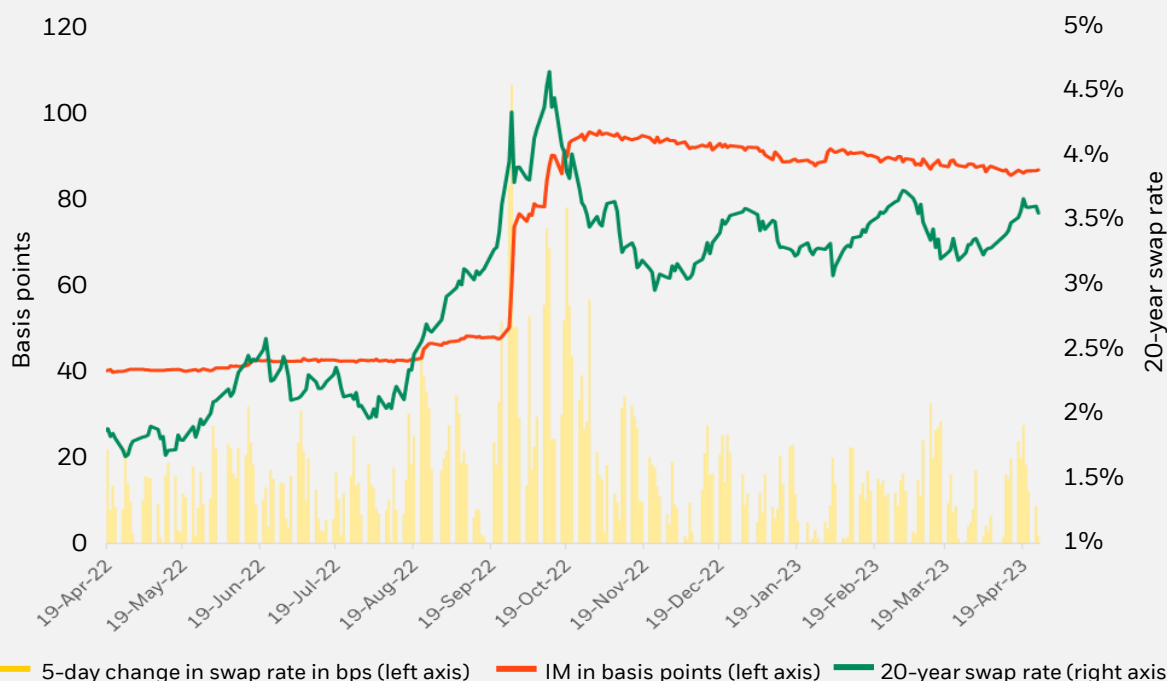
Since IM is calibrated to cover potential losses over a forward-looking horizon rather than responding to day-to-day market price movements, it tends to be relatively stable in ordinary conditions. But when volatility is sustained, or where new stress events are incorporated into margin calibration models, IM requirements can step up materially. CCPs and bilateral margin calculation agents may adjust models at their own discretion when they judge that current risks are not fully captured. These safeguards are important, but they can also create lasting steps up in collateral requirements, as stress observations remain in the lookback window and anti-procyclicality safeguards prevent margins from falling quickly.

VM operates differently. It reflects the current mark-to-market value of a position and is exchanged, typically daily, to settle realised gains and losses as prices move. Liquidity impact is driven less by modelling choices and more by the mechanical arithmetic of mark-to-market pricing. Figure 1 is a case study of IM and VM movements during the UK Gilt crisis of 2022.

Margin movements during the 2022 Gilt crisis

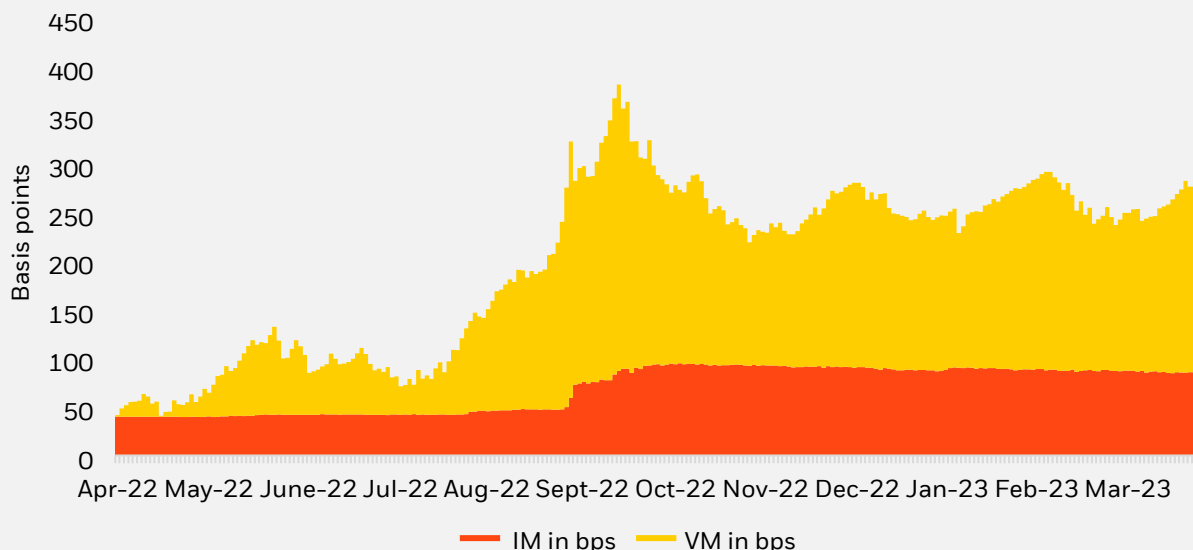
The autumn of 2022 saw volatility spike in the UK Gilt market. IM requirements for Sterling interest rate swaps at around 20-year maturity approximately doubled (see Figure 1). However, as the acute phase passed, requirements stabilised at a materially higher level, reflecting the fact that markets could be more volatile than previously assumed. This highlights a key feature of IM: it is sensitive to realised tail events, and the resulting step-changes can persist long after the stress itself has subsided.

Figure 1: Behaviour of Initial Margin during 2022 Gilt Crisis



Initial margin based on amount posted in a representative fund comprising of cleared swaps around the 20-year maturity.

Figure 2: Illustrative composition of Initial and Variation Margin during the 2022 Gilt Crisis



Initial margin based on amount posted in a representative fund comprising of cleared swaps around the 20-year maturity. VM calculated from a single 20-year swap struck at market close on 8th-Apr-22.

Source: Initial margin based on amount posted in a representative fund comprising of cleared swaps around the 20-year maturity. VM calculated from a single 20-year swap struck at market close on 8th-Apr-22.

The 2022 Gilt crisis illustrates how during stress episodes, VM typically generates the most acute, time-critical liquidity demands but once markets have stabilised, IM can still form a meaningful component of total collateral posted. We believe their combined impact creates a clear case for expanding collateral eligibility and reducing system-wide pressure. However, the unique mechanics and risk management purposes of IM and VM – and the specificities of cleared versus uncleared markets – require further exploration to define the right solution.

Designing collateral reform: Why Initial Margin is the natural starting point

The differences in how Initial Margin (IM) and Variation Margin (VM) behave shape how and where collateral reform is most feasible. Both can contribute to pro-cyclical liquidity pressure, but they do so in different ways. VM is typically the more immediate and time-critical driver of liquidity needs during stress, because it responds directly to mark-to-market moves. IM, by contrast, tends to adjust more episodically, but can still step up materially and remain elevated after a period of volatility. The most immediate demand for margin therefore tends to arise from VM requirements. In centrally

cleared derivative markets, VM is cash-only, reflecting a deliberate design choice by CCPs to ensure daily mark-to-market losses are settled with immediate liquidity, standardised valuation and low dispute risk, supporting default management and settlement finality. In Over-the-Counter (OTC) bilateral markets, counterparties have more flexibility under Credit Support Annexes (CSAs) and collateral schedules to agree non-cash VM, with appropriate haircuts and pricing adjustments. But this remains more bespoke, in part because what is posted as VM can affect pricing, valuation and risk metrics. These additional considerations around VM have important consequences for collateral modernisation.

IM is a buffer held against potential future loss. Because IM is designed to cover potential future exposure rather than settle daily mark-to-market gains and losses, expanding eligible IM collateral is less likely to affect daily valuation mechanics applicable to VM. Expanding IM eligibility can improve collateral efficiency without introducing the same valuation complexity. This matters because, while VM drives short-term liquidity calls, IM absorbs a large stock of collateral that is often held in cash or near-cash form. Where that stock is constrained by narrow eligibility frameworks, it cannot be deployed flexibly when VM

calls emerge. Broadening the range of assets eligible for IM can therefore leave more cash and high-quality liquid assets available to absorb spikes in VM, reducing idle buffers and increasing flexibility in stress.

For that reason, collateral expansion for IM is the most logical place to focus first. It indirectly benefits the whole portfolio without altering pricing mechanics, while the other Pressure Valves are more relevant to VM. For example, expanding repo market capacity increases the scope for assets to be converted to cash for VM without outright sales, while upgrading market structures through technologies such as tokenisation could reduce the reserves needed to meet VM demands by increasing the speed, certainty and reusability of collateral movement.

The challenge today: Frictions in an asset-rich system

Many investor portfolios have significant liquidity: a wide set of instruments that can be sold, financed, or otherwise transformed into cash. These portfolios may contain liquid or financeable assets even if they do not hold large cash buffers, but those assets are not always settlement-ready when margin calls arise.

There are two critical considerations in being able to produce trade settlement-ready resources in a timely manner, without destabilising price impact or operational bottlenecks. The first is assessing whether assets have the characteristics of good collateral; and second, how those assets are mobilised in practice. While the first step is essential for maintaining robust risk management, the second often defaults to conversion into cash, even where assets could

otherwise meet collateral needs directly. The need to convert liquid assets into cash introduces unnecessary trading, operational load and procyclical pressure without materially strengthening resilience.¹ Challenges emerge due to three sources of friction:

- 1. Eligibility:** Collateral schedules, documentation, and rules-based collateral eligibility frameworks can narrow what is acceptable in practice, even where an asset's characteristics would otherwise support reliable performance as collateral.
- 2. Form:** Assets may be held in structures or wrappers that are economically robust but operationally challenging to mobilise under time pressure.
- 3. Market plumbing:** The ability to transfer assets efficiently can be constrained by trade settlement mechanics, custody and account structures, and fragmentation across trading venues and infrastructures.

Because of these frictions, the default approach for many market participants is to mobilise liquidity by selling or financing assets to raise cash, then post that cash to meet collateral demand. A more resilient solution would be to meet time critical collateral demands by directly mobilising 'good collateral' wherever possible.

A framework for modernising the collateral ecosystem

The first consideration should be whether an asset can perform reliably as good collateral. Below, we set out four characteristics of 'good collateral'.

Characteristics of good collateral

- 1. Liquidity and convertibility:** Collateral should be capable of being converted into cash in a timely and predictable way, including under stress, supported by active markets, secured funding access or structural features.
- 2. Risk and valuation sufficiency:** Collateral should have transparent and observable pricing, predictable valuation behaviour across market conditions, strong credit quality and haircuts calibrated to realised and stressed risk.
- 3. Transferability:** Collateral must be capable of being transferred, controlled and enforced with legal certainty, supported by scalable settlement, custody and margining arrangements.
- 4. Legal and regulatory certainty:** Collateral frameworks should provide clear rights, enforceability, bankruptcy protection and proportionate regulatory and capital treatment so that eligibility is not constrained by uncertainty.

How to enhance collateral mobility

- 1. Regulatory clarity:** Adoption of economically robust assets will remain constrained where there is uncertainty about enforceability, custody, settlement, or their treatment under prudential and market rules. Clear, consistent guidance can reduce interpretation risk for market participants and infrastructure providers and enable more scalable collateral models. This is particularly important where new workflows, including tokenised representations or Distributed Ledger Technology (DLT)-enabled processes, alter how control, transfer and settlement are evidenced.
- 2. Improving transferability:** Shorter settlement cycles, better post-trade interoperability, more efficient custody arrangements and improved infrastructure can all reduce the time and operational complexity of mobilising collateral. This also depends on support from key intermediaries, including dealers, custodians and CCPs, whose operational and risk frameworks shape whether collateral can be used efficiently at scale. Over time, new infrastructure models may also improve the ability to transfer, control and reuse collateral with fewer operational breaks.
- 3. Assessing substance alongside structure:** Too often, collateral eligibility is driven by legal form rather than economic substance. A look-through approach may be appropriate where, for example, an investment fund holds underlying instruments that would themselves qualify as collateral, and where the fund structure provides transparency, liquidity, governance and operational reliability.

The second consideration is that the sources of friction set out earlier should be low enough that an asset's use as collateral is practically possible. For many assets, progress will need to be made across three mutually reinforcing areas – set out above.

In the remainder of this paper, we provide examples of how this framework could be applied to MMFs

and ETFs, many of which hold high-quality assets that would otherwise be permissible as collateral. These examples illustrate how enabling a broader range of assets can help investors meet margin calls without undermining long-term investment objectives.

Case study: Money Market Funds as tools for efficient collateral management

MMFs are already today an important part of the collateral ecosystem. Many market participants who have ongoing margin-related needs use MMFs to manage their cash and liquidity positions.

In recent episodes of market stress in Europe – whether the COVID-related market disruptions in March 2020, or the Gilt market stress in 2022 – margin-related cash needs were a meaningful driver of flows in MMFs as investors' most liquid source of raising and reinvesting short term cash.²

Building a system where MMF shares can be more easily posted directly as collateral for margin, rather than forcing a user to redeem shares for cash (which not only create an outflow pressure on an MMF, but in a bilateral margin arrangement, create a pressure on the other counterparty to find somewhere to place the cash) could create greater efficiencies in the collateral ecosystem. It could also help alleviate unnecessary stress on short-term funding markets as a spillover effect of market volatility.³ Increasingly, this is technologically feasible today; DLT and tokenisation will make MMF shares easier to access and transfer. Tokenisation does not alter the risk management of funds themselves.

Key features of MMFs include:

- **Well-established regulatory frameworks:** MMFs operate within well-established and tightly supervised regulatory regimes in the US, EU, UK and many other jurisdictions. These regimes have in many cases been recently updated to ensure additional levels of resilience, based on observations around stress conditions in March 2020 and the gilt market stress of 2022. Regulatory regimes require high levels of liquidity provisioning, transparent valuation, independent custody, strong risk management, governance and oversight.⁴
- **Strong daily liquidity and low-price volatility:** MMFs hold cash-equivalent assets and are required to maintain sizeable daily and weekly liquidity buffers to meet redemptions through pre-positioned liquidity, rather than asset liquidation. This supports predictable and orderly behaviour in stressed conditions; and aligns closely with the characteristics of high-quality liquid assets (HQLA) recognised within collateral regulatory frameworks.

Frictions:

- **EMIR (margin) rules:** For cleared trades, Article 46 EMIR does not expressly recognise MMF units as CCP collateral. Instead, it requires CCPs to accept only highly liquid collateral with minimal credit and market risk, as further specified in RTS 153/2013 and subject to the CCP's risk-management framework, operating rules and supervisory oversight. In practice, major UK and EU CCP collateral schedules remain focused on cash and highly liquid securities, such as government or agency bonds, and MMF units are not widely accepted as initial margin collateral. For non-centrally cleared bilateral derivatives, the position is different.

- RTS 2016/2251 permits units or shares in UCITS to be used as eligible collateral where specified conditions are met, including daily pricing and look-through to eligible underlying assets. For MMFs, questions can arise as to whether particular exposures, including repo or reverse repo used for liquidity management, satisfy the look-through eligibility requirements or should be treated differently for collateral eligibility purposes. There is also a UK/EU divergence: UK EMIR has been amended to permit certain third-country funds, including EEA UCITS, to be treated as eligible collateral where specified conditions are met, while the EU RTS remains framed around UCITS eligibility for EU counterparties. This divergence can create cross-border complexity and supports the case for clearer, more consistent supervisory guidance.
- **Capital (CRR / Basel III) and Liquidity (LCR / HQLA) rules:** Prudential frameworks often treat MMFs less favourably than equivalent underlying assets, with higher capital charges, and conservative haircuts. While some supervisors permit a look-through approach under bank prudential rules, inconsistency remains with Capital Requirements Regulation (CRR) capital and liquidity frameworks, and UCITS constraints.
- **System architecture:** Market infrastructure and collateral workflows also do not yet support efficient transfer, pledge, and reuse of MMFs at scale, and systems across custodians, CCPs, and collateral managers are not configured for direct mobilisation of fund units. In practice, this means system defaults to cash: often, MMF units are sold down for cash posted as collateral – which is then reinvested in MMFs.

Recommendations

- See page 9 for our recommendations for policy-makers and industry to overcome these frictions.

Case study: Exchange Traded Funds as good collateral

We believe certain UCITS ETFs, specifically sovereign bond ETFs, and qualifying investment-grade credit ETFs whose underlying holdings meet EU EMIR's eligible collateral criteria,⁷ offer structural safeguards and market liquidity that make them well suited for use as high-quality IM collateral. Under the uncleared margin framework, units in qualifying UCITS ETF may be eligible as collateral where relevant conditions are met, including look-through to eligible underlying assets. However, despite formal eligibility, they remain significantly underused. This is not because of shortcomings in the fund itself, but because of frictions in prudential treatment and operational infrastructure.

Key features of these ETFs are:

- **Well-established regulatory framework:** UCITS ETFs provide strong oversight, transparency, daily valuation, and investor protection– the same safeguards policymakers expect of high-quality collateral. Under EMIR, qualifying sovereign bond and investment-grade credit UCITS ETFs already meet bilateral IM eligibility criteria on a look-through basis.
- **Scale:** ETFs such as short-dated government bond UCITS ETFs operate on a meaningful scale. More than 26 such ETFs <1 year maturity hold a combined \$59 billion in assets, and the largest short government bond ETF exceeds \$26.1 billion.⁸ They are used across a wide range of portfolio applications and supported by a deep, continuous, pan-European liquidity ecosystem.
- **Structure:** For ETFs where underlying holdings are liquid and suitable as collateral, the ETF structure supports transparent valuation and access to liquidity. Continuous trading, observable pricing and active primary and secondary markets enable timely valuation and resilient price discovery across a range of market conditions. This can strengthen collateral markets by supporting more reliable valuation, stable haircuts and greater asset utility where underlying bond market liquidity may deteriorate.⁹ For instance, during the March 2020 COVID disruption, ETF shares traded more frequently than many underlying bonds, making the market more observable and more liquid, not less.¹⁰

Frictions

- **Inconsistent treatment across margin and prudential frameworks:** Bilateral margin rules under EMIR apply a risk-sensitive look-through approach to ETFs, aligning treatment with the underlying assets. Prudential capital rules under

CRR/PRA also permit fund look-through to achieve more risk-sensitive capital treatment, but implementation can be operationally complex for banks. By contrast, the LCR framework does not recognise ETFs as high-quality liquid assets (HQLA), even where the underlying assets may qualify if held directly. Although not a barrier to their use as IM, this treatment may reduce incentives to hold and accept qualifying ETFs relative to the underlying assets. As a result, banks may face higher capital or liquidity costs for holding ETF exposures, creating a structural disincentive to use qualifying ETFs even where their underlying risk is comparable to sovereign bonds.

- **Fragmentation across cleared and bilateral margin frameworks:** EMIR prescribes minimum haircuts for bilateral IM while cleared IM eligibility and haircuts are determined within CCP risk frameworks and the regulatory standards CCPs must meet when expanding their collateral pools. This lack of consistency can limit the ability of qualifying ETFs to be used efficiently and at scale as collateral across cleared and uncleared margin frameworks, reducing collateral mobility and constraining broader netting and portfolio margining efficiencies.
- **Operational and workflow constraints:** Collateral management systems, triparty eligibility schedules, and bilateral CSA frameworks remain built around cash and sovereign bonds. As a result, qualifying ETFs that are technically eligible cannot be efficiently mobilised through standard operational channels, limiting adoption at scale even where the underlying exposure is equivalent.

Recommendations

- See page 9 for our recommendations for policy-makers and industry to overcome these frictions.

Recommendations to enhance the mobility of MMFs and ETFs

Money Market Funds

- **Provide consistent interpretation of best practises for managing liquidity and reserves across a range of different policy frameworks, including MMFs.**
 - Clear, cross framework supervisory guidance recognising MMFs as eligible collateral would be the ideal way to join up frictions between different regulatory frameworks in Europe. We expect that policymakers will most likely view MMFs which invest in government or public debt as the most appropriate starting point for this discussion – but we believe there are good reasons to consider a wider suite of MMFs, in particular in Europe. This clarification should promote greater consistency across different regulatory frameworks such as EMIR, CCR/Basel, MMFR, MiCA and e-money and existing client asset rules, which create ambiguities for a range of different market participants as to whether they can use MMFs to manage their cash and liquidity positions. This would ensure the same MMFs are recognised by all rules, reducing legal uncertainty and inconsistency while supporting scalable adoption.
- **Align prudential treatment with underlying asset risk.**
 - Capital and liquidity frameworks (CRR/Basel, LCR/HQLA) should reflect the economic characteristics of MMFs and provide supervisory guidance on risk-calibrated haircuts and more standardised treatment across firms. This would make MMFs a more efficient cash management tools for banks.
- **Strengthen risk management and supervisory guidance.**
 - Provide clearer expectations on how MMFs are risk assessed and managed as collateral, through consistent guidance on look-through approaches,⁶ appropriate haircut calibration and concentration limits that don't disincentivise usage. This will enable prudent and standard usage of MMFs across firms.
- **Enable direct transfer and pledge of MMFs.**
 - Policymakers and industry participants should support legal and operational frameworks for the direct use of MMF units as collateral, including clearer treatment of title transfer, security interests, segregation, custody and reuse (e.g., ensure alignment with settlement finality and financial collateral frameworks). This would reduce reliance on cash conversion and improve collateral mobility.

Exchange Traded Funds

- **Clarify and harmonise ETF treatment in margin eligibility frameworks.**
 - Supervisory guidance should set explicit, consistent criteria for qualifying UCITS ETFs across cleared and uncleared initial margin frameworks, based on the quality, liquidity and transparency of their underlying assets. This would reduce uncertainty, support practical adoption and align cleared frameworks more closely with bilateral rules where qualifying ETFs are already recognised on a look-through basis.
- **Align prudential and liquidity treatment with underlying asset risk.**
 - Apply consistent look-through treatment across margin, capital and liquidity frameworks so qualifying ETFs are not disadvantaged solely by their legal form where their underlying assets would receive more favourable treatment if held directly. This should include working with industry to make CRR/PRA fund look-through approaches more practical and scalable. It should also consider whether, and under what conditions, qualifying ETFs backed by HQLA-eligible assets should receive more risk-sensitive liquidity treatment.
- **Seek to improve coordination across regulatory frameworks.**
 - This should help ensure that qualifying ETFs eligible under bilateral margin rules are not subject to more restrictive treatment at CCPs, or penalised under capital and liquidity regimes, without clear, risk-based justification.
- **Industry participants should complement policy actions.**
 - Improve data transparency, standardisation, and validation capabilities, to enable more consistent application of risk-sensitive treatment in practice.
- **Embed ETFs in collateral workflows.**
 - Industry should include qualifying ETFs in standard collateral schedules, triparty eligibility lists, and collateral management infrastructure to reduce operational friction and support collateral mobilisation at scale.

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Important Notes

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