Bank of England

Financial Stability in Focus: The FPC's approach to assessing risks in market-based finance

Financial Policy Committee
October 2023

Financial Stability in Focus

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The primary responsibility of the Financial Policy Committee (FPC), a committee of the Bank of England, is to contribute to the Bank of England's financial stability objective. It does this primarily by identifying, monitoring and taking action to remove or reduce systemic risks, with a view to protecting and enhancing the resilience of the UK financial system. Subject to that, it supports the economic policy of His Majesty's Government, including its objectives for growth and employment.

The Financial Stability in Focus sets out the FPC's view on specific topics related to financial stability. It complements the Financial Stability Report, which is published twice a year, and sets out the FPC's overall view of the outlook for UK financial stability, including its assessment of the resilience of the UK financial system and the main risks to UK financial stability, and the action it is taking to remove or reduce those risks.

The Financial Policy Committee:

Andrew Bailey, Governor
Jon Cunliffe, Deputy Governor responsible for financial stability
Ben Broadbent, Deputy Governor responsible for monetary policy
Dave Ramsden, Deputy Governor responsible for markets and banking
Sam Woods, Deputy Governor responsible for prudential regulation
Nikhil Rathi, Chief Executive of the Financial Conduct Authority
Sarah Breeden, Executive Director for Financial Stability Strategy and Risk
Colette Bowe
Jon Hall
Randall Kroszner
Elisabeth Stheeman
Carolyn Wilkins
Gwyneth Nurse attends as the Treasury member in a non-voting capacity.

The report was finalised on 26 September 2023. This document, unless otherwise stated, uses data available as at 30 June 2023.

For the avoidance of doubt, the Financial Stability in Focus is not intended to satisfy the requirements of Section 9W of the Bank of England Act 1998.

Contents

Executive summary

This Financial Stability in Focus (FSIF) sets out the Financial Policy Committee's (FPC's) approach to assessing risks in market-based finance (MBF) and ways it intends to develop this approach. It supports the FPC's **medium-term priority** to further improve risk identification in, and the functioning and resilience of, MBF.

MBF has grown significantly since the global financial crisis, and non-bank financial institutions (NBFIs) currently account for around half of UK and global financial sector assets. This has reduced the reliance of many UK businesses on banks and diversified their sources of finance and other financial services. But for the benefits of such diversification to be sustainable it is vital that MBF is resilient enough to absorb, and not amplify, shocks.

The FPC seeks to ensure the UK financial system is prepared for, and resilient to, the wide range of risks it could face so that it is able to continue to serve UK households and businesses.

To support this objective, the FPC has an established approach to identifying, assessing, monitoring, and responding to financial stability risks associated with MBF. Through this approach, the FPC has identified a number of vulnerabilities in MBF that could give rise to risks to financial stability. These risks have crystallised several times in recent years, and the FPC has recommended actions to enhance the resilience of MBF in a number of areas.

The FPC's approach to risk identification, assessment, monitoring, and mitigation in market-based finance

The FPC's risk assessment framework

Under its risk assessment framework, the FPC considers a range of vulnerabilities in MBF sectors (such as liquidity and maturity mismatch, and leverage) and market features (such as interconnectedness and concentration) that make these sectors and markets susceptible to shocks. Specific plausible risk scenarios are also used to identify how these vulnerabilities and features might interact and propagate

through the system to threaten financial stability; for example, through disruptions to systemically important markets and institutions that have consequences for businesses and households.

Building resilience and responding in stress

The system of MBF is global in nature, complex, and different parts of the system are highly interconnected, which creates a range of practical challenges for macroprudential authorities globally. There are also material gaps in the data available to assess financial stability risks in the system. As such, it is not realistic to expect that all risks can be identified in advance.

Where the FPC identifies material vulnerabilities, it considers how resilient sectors and markets are to shocks given these vulnerabilities. Absent sufficient resilience, the FPC seeks to take action, where possible, to remove or reduce risks to financial stability by building resilience in the system.

It is first and foremost market participants' responsibility to manage the risks they face, overseen by relevant sectoral regulators. But the collective actions of participants in response to shocks can weaken other firms, create and transmit stress to markets, and lead to the disruption of financial services provided to the real economy, even when individual actions seem rational when considered in isolation.

Resilience standards, and macroprudential policy more generally, aim to prevent such systemic risks that lead to disruption to the provision of financial services. Effective resilience for market-based finance therefore needs to cover both idiosyncratic and systemic risk, and be calibrated to appropriate levels such as for a severe but plausible stress.

The FPC has a responsibility to drive policy development and implementation, internationally and domestically, to support the stability of the UK financial system. The FPC considers domestic action alongside or independently from international action where this is expected to improve UK financial stability, may inform or accelerate international policy development, and would not have a negative impact on global financial stability. As one of the largest international financial centres in

the world, this is important not only to the UK economy but also to the global economy. As the International Monetary Fund (IMF) has determined, the stability of the UK financial system is a global public good.

At the same time, it is important to recognise that it would be neither feasible nor credible to build resilience to insure against every possible eventuality. There is therefore a role for central banks globally to ensure that their toolkits are sufficiently developed, such that they can respond effectively in exceptional stresses. The Bank of England ('the Bank') recently **set out its plans to develop a new lending tool for NBFIs** to help tackle future episodes of severe dysfunction in core markets that threaten UK financial stability.

Resilience standards for MBF must be developed in co-ordination with work to enhance central bank tools to respond in stress. That is to ensure that public backstops do not end up substituting for a failure to achieve the appropriate level of private insurance.

Developing the FPC's approach

The FPC continuously seeks to extend its approach, and this FSIF sets out some of the ways it is doing so. These include:

- **Enhancing and reviewing how it prioritises risk assessment and policy development.** Given the breadth of issues in MBF, the FPC will review its approach to prioritising issues for detailed analysis and policy development.
- **Improving its capability for system-wide analysis.** The **system-wide exploratory scenario (SWES) exercise** is an important step in building this capability.
- **Considering the potential role for macroprudential tools, including where additional resilience standards may be needed for NBFIs.** Effective MBF resilience should: (1) be specific and targeted; (2) cover idiosyncratic and systemic risk; and (3) be calibrated to an appropriate resilience standard such as to cover a severe but plausible stress.
- **Setting out how and when it will act domestically or internationally.** International policy is crucial to reducing vulnerabilities in MBF, but the FPC will also act domestically, where effective and practical.

- **Working with the Bank to ensure it has the tools to address dysfunction in MBF.** Such tools should act as a backstop, be designed in a way to minimise any increase in moral hazard and come with appropriate levels of private sector liquidity self-insurance. Indeed, it is vital that firms make progress on building their resilience to vulnerabilities as a counterpart to central banks developing new tools to support markets during periods of severe dysfunction

Next steps

This FSIF aims to advance the domestic and international debates on financial stability risks associated with MBF. The FPC welcomes feedback from interested parties on its approach to assessing and mitigating financial stability risks associated with MBF, and how it might be refined. Bank staff will seek to engage with interested parties over the coming months on the contents of this FSIF.

1: Background and context: ensuring the resilience of market-based finance

1.1: The importance of market-based finance (MBF)

MBF is an interconnected system of markets, non-bank financial institutions (NBFIs), and infrastructure.

MBF is made up of markets (eg, equity, debt, and derivatives markets) and different kinds of investment funds, insurers, intermediaries like broker-dealers, and market infrastructure like central counterparties (CCPs). These NBFIs are connected to each other and other parts of the financial system, including banks which often play key roles in MBF (eg, as broker-dealers). Crucially, they also affect the real economy through the various markets they operate in and through the services they provide. Collectively, these NBFIs, markets, and infrastructure form the system of MBF.

MBF provides financial services to support the wider economy.

These services include providing credit, intermediating between those seeking to invest their savings and borrowers, insuring against and transferring risk, and offering payment and settlement services.

MBF helps savers by offering a range of vehicles with different risk profiles through which to invest their cash. These vehicles include open-ended funds (OEFs) for investing in equity or bond portfolios, and Money Market Funds (MMFs) for placing cash in short-term, lower-risk instruments. In addition, MMFs are used for liquidity management by pension funds, investment funds, and corporates. In total, investors hold around £1.8 trillion in UK domiciled OEFs and £260 billion in sterling denominated MMFs.

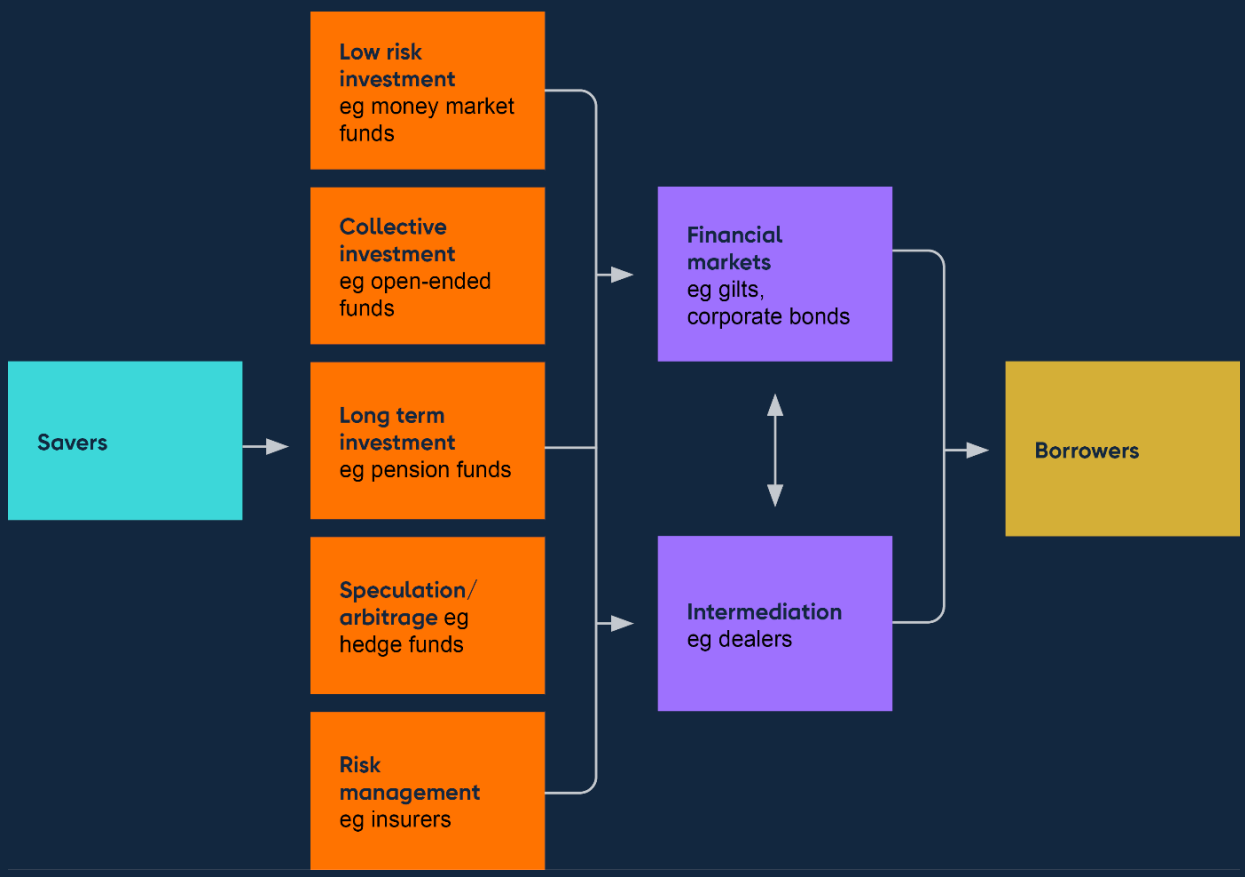
MBF also helps facilitate risk management in the economy via the provision of insurance and derivatives contracts. Derivatives enable non-financial businesses, as well as financial institutions, to transfer the risks they are exposed to in the course of their activities (such as changes in interest rates, exchange rates, equity and commodity prices) to other institutions with different risk profiles and appetites.

The ability of firms to take and manage risks in this way supports economic growth. As of December 2022, the gross notional value of outstanding global **over-the-counter (OTC) derivatives** stood at around **US$630 trillion**.

Figure 1 illustrates some of the major direct and indirect roles of MBF in the financial system and economy.

Figure 1: Market-based finance provides important services

Key roles played by market-based finance in the financial system and real economy



Source: Bank of England.

And some financial markets are critical to the functioning of the UK financial system.

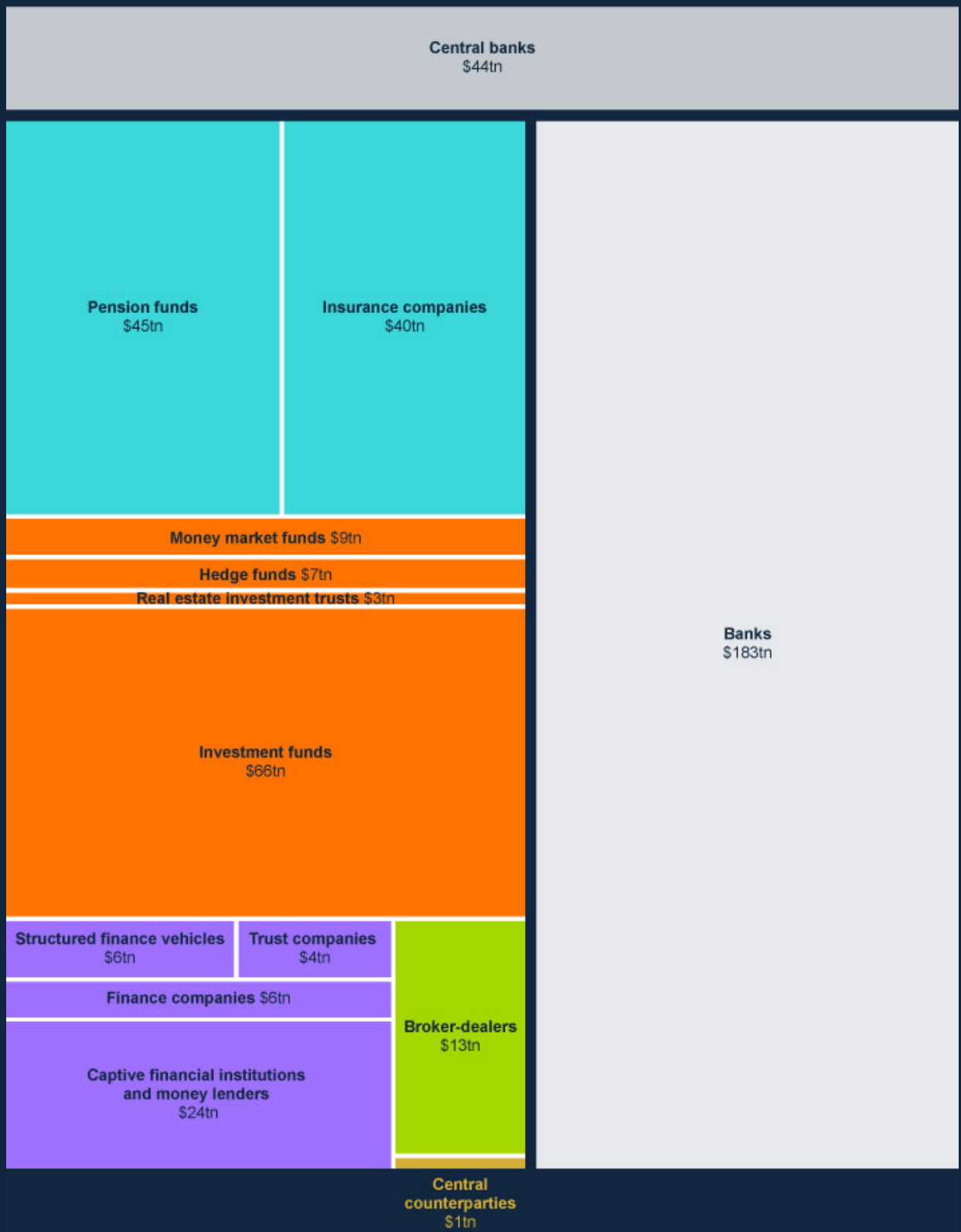
NBFIs are an important source of liquidity in critical markets, such as that for UK government bonds (or ‘gilts’), which provide finance to the UK Government. In addition, gilt yields are the benchmark for other borrowing rates for households and businesses, and the gilt market is vital to the functioning of financial markets and the transmission of monetary policy. Repurchase agreement (repo) markets – in which gilts are commonly used as collateral – facilitate the essential flow of cash and securities around the financial system. They enable the low-risk investment of cash, as well as the efficient management of liquidity and collateral by market participants. Furthermore, they provide the foundation for arbitrage activity in sterling financial markets, which supports price discovery and the efficient pricing of risk.

> **MBF has grown significantly, and NBFI assets account for around half of UK and global financial sector assets.**

MBF had been growing rapidly since before the global financial crisis in 2008 and its importance has been further recognised since then. Between the start of the global financial crisis and end-2020, NBFIs more than doubled in size, compared to banking sector growth of around 60%. As a result of this growth, the sector now accounts for around half of the total assets making up both the UK and global financial systems (Chart 1).

Chart 1: Non-banks make up a significant part of global financial system assets

Total assets of major financial sectors globally, as of end-2021 (US$ trillions)



Source: Financial Stability Board (2022), **Global Monitoring Report on Non-Bank Financial Intermediation**.

In the UK, MBF is particularly important in the supply of finance to businesses. As of early 2023, it accounted for approximately £740 billion (around 55%) of all lending to UK businesses (Chart 2). And it accounted for nearly all of the almost £425 billion net increase in lending to UK businesses between end-2007 and early 2023. While there is currently limited direct lending to UK households and smaller companies, MBF still plays an important role by freeing up financing capacity in the banking system. For example, around 9% of buy-to-let mortgage loans are securitised and can be financed by investors. In addition, it provides other important services directly to both households and businesses. For example, private pensions are an important vehicle for household savings, making up the largest component of **UK household wealth**, and insurance companies provide vital risk management services to households and companies.

Chart 2: MBF is an important source of funding for UK businesses

Composition of the current stock of UK private non-financial corporate debt (a)

Sources: Bank of England, Bayes CRE Lending Report (Bayes Business School (formerly Cass)), Deloitte, Eikon from Refinitiv, Financing and Leasing Association, firm public disclosures, LCD a part of PitchBook, ONS, Peer-to-Peer Finance Association and Bank calculations.

(a) One square represents approximately £14 billion. There are 100 squares, each representing 1% of the total current stock of UK corporate debt, rounded to the nearest 1%. Debt securities include bonds, private placements, and commercial paper. Non-bank loans to large corporates include lending by securities dealers and insurers, non-monetary financial institution syndicated loans, asset finance provided by the non-bank sector, and direct lending funds. These data are for private non-financial corporates using ONS consistent national accounts definitions, and excludes public, financial, and unincorporated businesses.

> **Because it provides vital services, disruption to MBF can lead to economic costs and have implications for growth.**

Through the activities and services it provides, MBF plays a key role in supporting the UK and global economies, which means that disruption can have a significant impact on financial stability and the real economy. These impacts can span across borders, with events in global financial markets having the potential to affect UK financial stability.

The rapid growth in MBF has also meant that counterparty exposures have grown in size and importance. These exposures have the potential to amplify price movements following a shock and so disrupt the provision of services, resulting in material impacts on UK financial stability and tighter financial conditions for UK businesses and households.

In the past few years, a number of stress episodes have highlighted the potential impact of vulnerabilities in the system of MBF. In particular, they have shown that material market dysfunction has the potential to lead to a tightening of financial conditions and a reduction in the provision of finance to households and to businesses. For example:

- In March 2020, the actions of some NBFIs amplified the initial market reaction to the Covid-19 pandemic to create a severe liquidity shock globally (the **'dash for cash'**). This severely disrupted market functioning, including in the UK, and threatened to harm the wider economy by tightening financial conditions for UK households and businesses through very sharp adjustments in asset prices and corporate and bank funding costs. The disruption only abated following significant policy action from global central banks.
- In March 2021, high levels of hidden leverage associated with equity derivative positions were a key factor in the default of Archegos. This episode led to sizeable losses for some global banks with inadequate risk management, which had the potential to impact the provision of finance to the real economy.
- Following Russia's invasion of Ukraine in February 2022, the stable functioning of some commodity markets, which play a vital role in the economy (including meeting demand for food and energy – refer to **July 2022 Financial Stability Report** (FSR)), was tested by extreme price volatility.
- And in late September 2022, the rapid repricing of long-dated UK government bonds generated stress and forced selling by leveraged liability-driven investment (LDI) funds. Had the Bank not intervened, this could have led to a further tightening of financing conditions and a reduction in the flow of credit to households and businesses (refer to **December 2022 FSR**).

1.2: The need for resilience in MBF

> **As the episodes described above have demonstrated, if improperly managed or managed without accounting for system-wide dynamics, vulnerabilities in MBF can create spillovers that can negatively impact the real economy.**

Many elements of MBF exhibit vulnerabilities, which are features that make sectors or markets more likely to amplify shocks, such as leverage and liquidity mismatch (Section 2.1.1). These vulnerabilities have the potential to lead to financial stability

issues because of interconnections within the financial system; indeed, recent stress episodes have highlighted that, if not properly managed, MBF vulnerabilities have the potential to generate spillovers across the financial system. These vulnerabilities and spillovers can in turn combine to create feedback loops that can compromise the resilience of the broader system and lead to disruptions to the vital services provided to the real economy and within the financial system. Policy action, including macroprudential tools and resilience standards, aims to reduce the likelihood of such disruptions happening, and their costs if they were to occur.

Existing regulation of NBFIs is mainly focused on ensuring fair outcomes for investors, suitable consumer protection, and market integrity, which can support, but not fully address, risks to financial stability. Past episodes of stress have shown that this might not be enough given the potential consequences of collective defensive actions that may seem rational individually but effectively amplify the impact of shocks.

1.3: The role of the Financial Policy Committee (FPC)

> **The FPC is responsible for protecting and enhancing the stability of the UK financial system, including MBF.**

It does this by identifying, monitoring, and taking action to remove or reduce risks to financial stability so that the financial system is able to absorb rather than amplify shocks and continue to provide vital services to businesses and households. As such, the FPC adopts a forward-looking approach that aims to take action to address vulnerabilities in advance of shocks occurring in order to reduce their impact should they crystallise, in addition to responding to vulnerabilities if and when they crystallise in response to shocks.

> **As part of its medium-term priorities, the FPC has set out its intention to further improve MBF risk identification, as well as the functioning and resilience of the system.**

To that end, the FPC takes an active role in the development of MBF policy responses domestically and through its contribution to the international policy agenda via the Financial Stability Board (FSB). It is also guiding the development

of the Bank's stress-testing approach including the **system-wide exploratory scenario (SWES)**, as well as efforts to address the quality and coverage of data on MBF.

The FPC has powers to act to mitigate risks to financial stability.

If the FPC identifies a potential risk to financial stability, it can use its power of direction or its power of recommendation to seek to remove or reduce that risk. Its directions are binding instructions that it can give to the Prudential Regulation Authority (PRA) and Financial Conduct Authority (FCA) requiring them to take certain macroprudential measures. The FPC can also make recommendations, including on a 'comply or explain' basis, to the PRA and to the FCA. In addition, it can make recommendations to persons other than the PRA and the FCA on a 'non-comply or explain' basis. For example, the FPC's resilience standard for LDI funds is set out as a recommendation to the Pensions Regulator (TPR) (Box B).

The FPC is also responsible for assessing the suitability of the regulatory perimeter, in line with its remit.

The FPC has a statutory power to make recommendations to HM Treasury in relation to the regulation of the UK financial system, to support financial stability. This includes recommending that activities move across the boundary between regulated and non-regulated activities – known as the 'regulatory perimeter' – and recommending changes in regulation for activities already within the perimeter where it identifies financial stability risks that cannot otherwise be addressed.

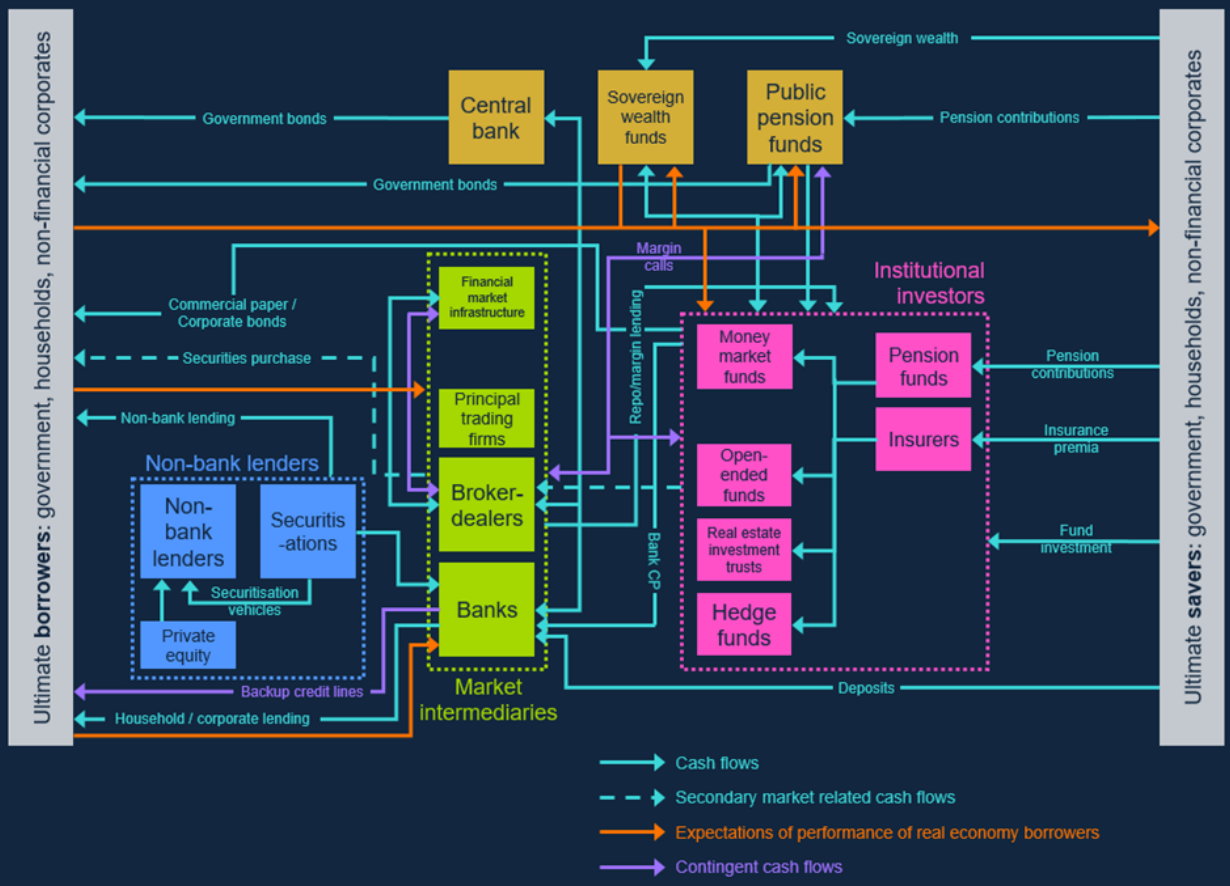
1.4: Challenges in assessing risks associated with MBF

MBF is a complex system, which makes assessing risks associated with it challenging.

Figure 2 provides a stylised illustration of how different elements of MBF interact with each other and the rest of the system. The complexity and interconnectedness of sectors, activities, markets, and participants make it difficult to identify all risks, or predict how these risks might transmit through the system.

Figure 2: Market-based finance is a complex system

Stylised illustration of MBF sectors and interconnections (a)



Source: FSB (2021), **Enhancing the Resilience of Non-Bank Financial Intermediation: Progress report**.

(a) Figure 2 illustrates how funds flow through the system between savers on one side and borrowers on the other side; savers and borrowers are thought to be government, households, and non-financial corporates. Between these savers and borrowers, funds go through a complex system of market-based finance represented by three main groups: institutional investors, non-bank lenders, and market intermediaries who sit between the other two groups and facilitate their transactions. Institutional investors comprise pension funds, insurers, money market funds, open-ended funds, real estate investment trusts, as well as hedge funds. Non-bank lenders include private lenders, securitisations, and private equity. Market intermediaries are financial market infrastructure, principal trading firms, broker-dealers, and banks. At the top of these three groups are central banks, sovereign wealth funds, and public pension funds.

The figure then draws the direction of funds between all these components of the system, and shows the complexity of the flow of funds, which circulate in different directions between and across all components of the system.

In summary, the system is made up of a diverse set of financial activities, entities, and infrastructures, and these are interconnected among themselves, to the banking sector, and to the broader economy.

A number of factors contribute to the complexity of the system of MBF:

- It is **international** in nature, with many entities domiciled in one jurisdiction, managed from another, and operating cross-border. This makes risk identification and assessment more difficult.
- It is **growing and evolving rapidly** in many areas, requiring the FPC and other authorities to stay agile in their monitoring of the system.
- There is a high degree of **interconnectedness** among markets and participants across MBF, both domestically and internationally, which means that issues experienced in one part of the system can easily cascade to others.
- Systemically important activities can often be carried out by **a large number of small entities**. This means the FPC needs to consider markets as a whole and the collective behavioural responses of firms in stress.
- **Limited transparency and data gaps** combined with regulation traditionally focused on market integrity and conduct, rather than prudential issues, are other important barriers to identifying, monitoring, and addressing risks effectively.
- **Fragmented regulation** of MBF, and the absence of international agreements and standards, mean that assessing risks and developing policy require co-operation across a wide range of authorities.

These factors highlight the importance of taking an holistic approach to assessing and building the resilience of the system, and continuously seeking to strengthen this approach.

1.5: The role of this Financial Stability in Focus (FSIF)

> **This FSIF is part of the FPC's commitment through its medium-term priorities to set out its approach to assessing risks associated with MBF in 2023.**

This FSIF sets out the FPC's approach to identifying and assessing risks associated with MBF, building resilience, and responding when disruption to market functioning occurs. It provides more detail on the FPC's approach than previous publications, and sets out how the FPC intends to continue to extend its approach further.[1] Given the importance of MBF to the UK financial system, and the

importance of the UK financial system globally, the FPC's work in this area is central to its primary objective for UK financial stability – which the International Monetary Fund (IMF) has determined is a **global public good**. [2]

2: The FPC's approach to risk identification, assessment, monitoring, and mitigation in MBF

In approaching risks associated with MBF, the FPC focuses on issues that have the potential to amplify shocks and create risks to UK financial stability and the real economy.

It is a necessary feature of any financial system that investors can make losses, including large ones, as well as gains. Shocks to the system can lead to sharp price movements in certain financial markets as well as a general increase in volatility. But this does not necessarily constitute a financial stability risk if important financial services to businesses and households are not significantly disrupted. The FPC is, however, concerned with helping to ensure that shocks are absorbed by the system rather than amplified by it.

Shocks can be amplified by the actions of market participants, which can interact with underlying vulnerabilities in the system.

Given the breadth and complexity of sectors, activities, markets, and participants in MBF, actions and behaviours in response to a shock can interact with existing vulnerabilities. This can cause disruptions in different parts of the system and lead to adverse effects on financial stability. For example, this can happen when, as a consequence of an initial shock, market participants take actions which result in an increased demand for liquidity that the system is not able to fully absorb.

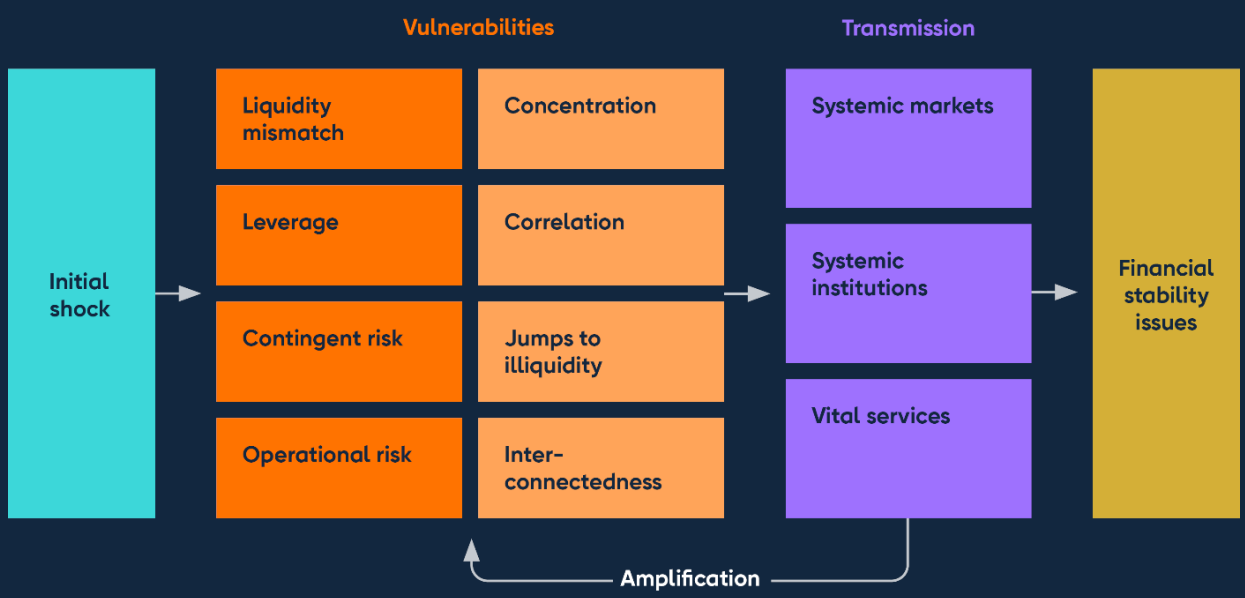
An amplified shock can become a risk to UK financial stability if it results in the crystallisation of underlying vulnerabilities that threaten the stable provision of financial services to UK businesses and households. As illustrated in Figure 3 below, this can happen directly through losses or the impairment of services provided, or indirectly via institutions and markets, given the high degree of interconnectedness that characterises the system of MBF.

To illustrate this, if MMFs had suspended redemptions following outflows in the initial market reaction to Covid-19 in March 2020 and not benefited from the interventions of public authorities (refer to the 2020 FSB **Holistic Review of the**

March Market Turmoil), there would have been a significant threat to financial stability in the UK and other jurisdictions. This is because MMFs are interconnected with, and could potentially spread risks to, other institutions, including other OEFs, pension funds, and insurance companies, which rely on MMFs to manage short-term liquidity and to meet margin calls. In addition, MMF suspensions can have a direct adverse impact on the economy; for example, if corporates and local authorities are unable to access their cash to pay creditors, taxes, or wages.

Figure 3: How vulnerabilities in market-based finance can affect financial stability

Vulnerabilities and transmission channels to financial stability



Source: Bank of England.

Therefore, in order to focus on the most important risks to financial stability, the FPC considers how vulnerabilities in MBF can amplify shocks across the broader financial system, and the extent to which this might impair the ability of the system to support households and businesses. This might happen through systemically important institutions or markets being disrupted, or through a disruption to the provision of vital services.

The FPC has an established approach to identifying, assessing, monitoring, and responding to financial stability risks associated with MBF.

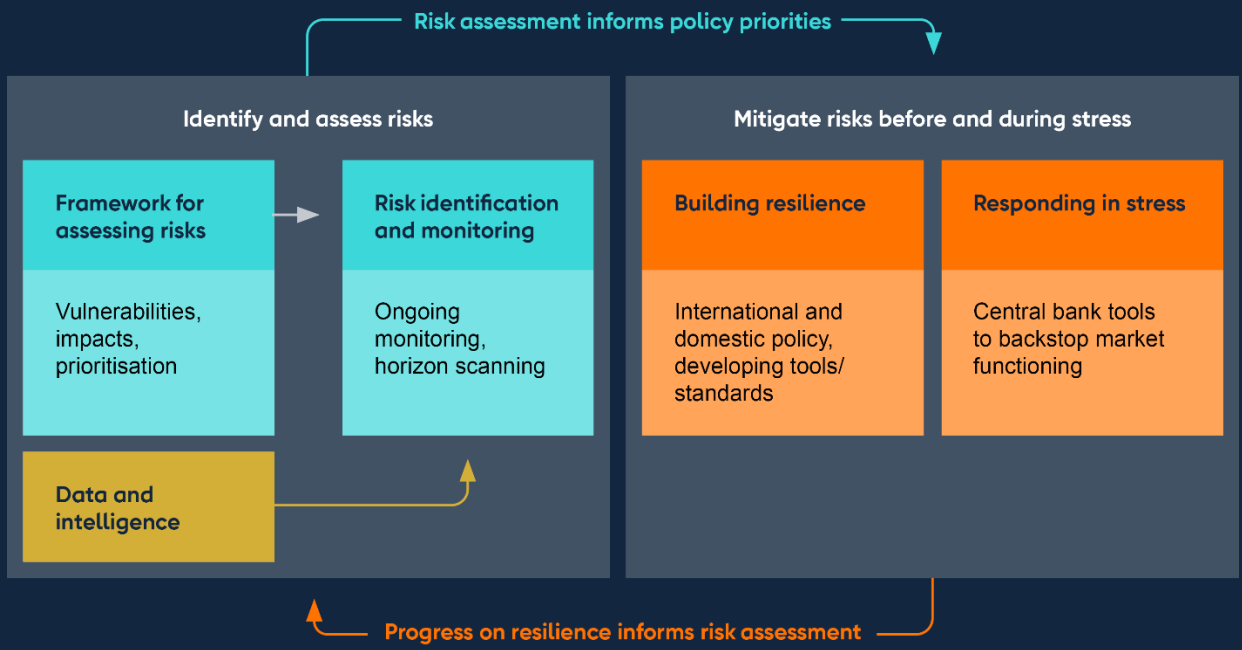
The FPC's assessments of financial stability risks associated with MBF are underpinned by a framework that considers vulnerabilities within the system of MBF, and the transmission channels through which these vulnerabilities can have an impact on financial stability and subsequently on the real economy. This assessment aims to prioritise monitoring, analysis, and policy work.

The FPC aims to take action to address vulnerabilities before they have crystallised, where possible, by building resilience. And to prepare for severe shocks, the FPC and Bank consider which tools they have to respond as necessary to support financial stability.

Figure 4 summarises the FPC's overall approach to assessing and responding to risks associated with MBF, which is discussed in more detail in Section 2.1.

Figure 4: The FPC has an established approach to assessing risks from MBF

Overview of the FPC's approach to financial stability risks associated with MBF



Source: Bank of England.

2.1: Risk identification, assessment, and monitoring

2.1.1: Assessment of vulnerabilities across the system of MBF

> **The FPC examines a range of factors that can make individual sectors, markets, and institutions vulnerable.**

The FPC considers two types of vulnerabilities:

1. **'Microfinancial' vulnerabilities.** These are inherent to particular business models and make individual NBFIs, sectors, and infrastructure vulnerable to shocks. The FPC primarily focuses on:

    - **Maturity and liquidity mismatch**, which can arise when assets are less liquid or longer dated than liabilities. This is the case, for instance, for many investment funds and commodity trading houses. These mismatches can expose weaknesses in liquidity risk management for funds leading to self-

reinforcing ‘run’ dynamics. In turn, this can cause funds to liquidate assets, engaging in fire sales, and putting pressure on asset prices.

- **Leverage**, which involves a firm increasing its exposure to a risk factor (such as asset prices or interest rates) beyond what would be possible through a direct investment of its own funds, typically using borrowing or derivatives. Leverage can amplify losses and so can lead to forced trading to deleverage and rebalance exposures. It can also lead to liquidity demands, if, for example, significant volatility triggers rapid increases in margin calls, as was the case in commodity markets following the Russian invasion of Ukraine. This would increase firms’ demand for liquidity, which could lead to asset sales, putting downward pressure on asset prices (refer to **With leverage comes responsibility – speech by Jonathan Hall**).
- **Contingent risk**, which can occur when changes in external factors lead to sudden shifts in the nature of a firm’s exposures. This could include a counterparty downgrade or default, actions by authorities to suspend markets (eg, due to extreme weather or other physical disruption), or new legal judgements or sanctions that impact the value of a firm’s assets. Events like these may lead to sharp ‘cliff-edge’ changes in asset valuations which may be difficult to hedge, or they might expose underlying correlations between counterparty risk and collateral valuations (‘wrong-way risk’).
- **Weaknesses in operational processes and risk management**, which can be characterised by: a lack of preparedness or resilience to severe but plausible shocks; inadequate or failed internal processes, people, and systems; and a poor understanding of credit and market risk in products, such as weaker underwriting terms in leveraged lending contracts. These can: increase exposure to shocks; result in material losses that may threaten a firm’s safety and soundness; and lead to disruptions to vital services or the functioning of systemically important markets and institutions. These types of weaknesses were observed in LDI funds, for example.

2. **‘Macrofinancial’ vulnerabilities.** These are inherent to market structure and the collective behaviour of individual institutions within those markets. A key consideration in MBF is how the different microfinancial vulnerabilities – described above – can interact, and how firms trying to protect themselves can lead to spillovers and feedback loops that propagate risks, such that individually rational actions lead to disruption to markets as a whole. Features of markets

that tend to mean microfinancial vulnerabilities interact in an adverse way include, for example:

- **High market concentration**, which can amplify price moves and increase the risk of interruption to vital services, especially where firms' liquidity demand is great compared to the system's overall supply. For example, LDI funds are significant holders of long-dated and index-linked gilts. This meant that, in September 2022, when these funds faced a correlated stress, there were few buyers of the gilts they needed to sell, which amplified market stress.
- **Correlation or herding by market participants**, which can arise where correlated positions of market participants amplify fluctuations in market prices such as when falls in asset prices force participants with similar trading strategies to sell assets, leading to further price falls. For example, in 1994, and again in 2003, correlated hedging of the negative convexity of US mortgage-backed securities (MBS) amplified the rise in dollar bond yields, as holders of MBS tend to sell fixed income securities as yields rise. Sharp and disorderly market moves, in turn, can cause direct and indirect losses to other institutions, including systemically important banks, potentially leading to tighter financial conditions for households and businesses.
- **Jumps to illiquidity**, which are instances where sharp and rapid increases in demand for liquidity overwhelm the capacity of markets to absorb it, resulting in sharp and amplified moves in prices and market dysfunction. This can be further amplified by the unwillingness or inability of securities dealers and other intermediaries, such as principal trading firms, to expand their intermediation activity by temporarily warehousing additional assets on their balance sheets. This was evidenced by the volatility in US overnight repo rates in September 2019, when the Federal Reserve had to take action to restore market stability. It was also at the centre of both the March 2020 'dash for cash', during which severe illiquidity crystallised in advanced economy government bond, corporate bond, and repo markets, and the 2022 LDI stress, which caused dysfunction in the long-dated gilts market.
- **Interconnectedness and opacity** across markets and participants can result in losses being transmitted to counterparties in a sudden way, driven in part by the lack of certainty on overall positions held in the market. For example, during the global financial crisis, the interconnectedness and lack of transparency in derivative markets amplified shocks in the financial system

(refer to **November 2017 FSR**). An opaque and poorly collateralised web of derivatives trades transmitted stress between market participants as they collectively rushed to manage counterparty credit risk. In response, G20 leaders agreed a number of improvements to OTC derivatives markets to increase transparency, prevent market abuse, and reduce financial stability risks. And in March 2020 during the 'dash for cash', MMFs, particularly those that invest in non-government assets, saw large outflows as investors redeemed MMF shares to obtain liquidity to make necessary payments elsewhere – in many cases to meet margin calls on derivatives.

The LDI stress in September 2022 is a good example of how microfinancial vulnerabilities can interact with macrofinancial vulnerabilities to amplify shocks with spillovers to the real economy, as is described in Box B.

No part or sector of the system of MBF can be assessed fully in isolation, so the FPC uses a combination of perspectives to identify and prioritise vulnerabilities

The system of MBF relies on the behaviour of a range of intermediaries and investors that, in combination, determine how well markets function and therefore whether, in the face of shocks, the system can continue to support the real economy and the rest of the financial system. To that effect, the FPC aims to consider a number of perspectives or 'lenses' to try to identify and prioritise vulnerabilities ahead of stress, as follows:

- A **business model** lens, through which the FPC assesses microfinancial vulnerabilities stemming from NBFI business models and sector characteristics.
- A **markets** lens, through which the FPC considers macrofinancial vulnerabilities by analysing and understanding the structure and dynamics across individual markets and how they interact as a whole.
- A **scenario** lens, through which the FPC uses scenario analysis to evaluate how micro and macrofinancial vulnerabilities may amplify stress. This approach looks at specific plausible system-wide risks or scenarios identified through regular horizon scanning. These scenarios are informed by data, market intelligence, and information exchange with internal and external stakeholders.

Using this combination of perspectives can help identify and prioritise the most material risks more comprehensively, particularly as looking through different perspectives can shine a different light on the same risks and allow the FPC to better gauge their potential impact on financial stability and, consequently, address them more effectively. Additionally, the FPC's use of these perspectives varies through time, adapting in an agile way to the prevailing risk environment and the FPC's judgements on priority issues (Section 2.1.3). For instance, in stress, the FPC will make more use of specific plausible scenarios relevant to the stress to identify and assess risks.

That being said, while considering risks through different perspectives improves the FPC and global authorities' ability to spot risks, the inherent challenges of assessing risks associated with MBF described in Section 1.4 mean that it is not possible that every risk can or will be identified.

> **MBF vulnerabilities previously identified by the FPC have primarily originated from weaknesses in specific business models.**

Disruption in MBF has been driven by problems and poor risk management originating within institutions or sectors, as borne out by recent stress episodes. As a result, the FPC identified and prioritised policy work on a number of microfinancial vulnerabilities, such as liquidity mismatch in OEFs and MMFs, and non-bank leverage, among others, which will be discussed further in Section 2.2.2.

But when assessing the extent to which specific microfinancial vulnerabilities might spill over to the rest of the system, the FPC must also consider the dynamics of the markets that businesses and sectors operate in. It considers their footprint in these markets too, and seeks to assess the impact of spillovers arising from vulnerabilities originating in specific business models to broader liquidity demand in markets and their potential impact on financial stability. For example, the FPC recognises that vulnerabilities in MMFs are particularly important for financial markets given both their use by market participants to manage short-term liquidity as well as their important role in repo markets. Vulnerabilities in MMFs can also have knock-on effects on the price and availability of cash in stress for market participants looking to borrow on a very short-term basis.

More broadly, the FPC has also assessed macrofinancial vulnerabilities that exist in financial markets. One such example is the ongoing work to assess the procyclicality of margin calls in stress, and whether market participants are adequately prepared to meet them. In a similar vein, the FPC has considered how variability in market liquidity in core markets acts as an important source of stress and has focused on market structure as a core potential vulnerability. This includes, for example, analysis of whether dealers in intermediated markets are capable of and willing to engage in intermediation in stress, whether market participants display 'preferred habitat' behaviour, and how certain markets are connected to other markets and the rest of the financial system.

Finally, The FPC's **July 2023 FSIF on interest rate risk in the economy and financial system** is an example of how the FPC conducts scenario-type analysis and considers impacts across the whole financial system and economy. Among other things, the July 2023 FSIF highlighted that liquidity risk from the use of derivatives – or leveraged products more generally – could arise if the users of such products lack sufficient liquidity to meet higher margin and collateral calls. The pressure of liquidity calls can lead to the fire sale of assets and a tightening in financial conditions for households and businesses.

2.1.2: Transmission channels to financial stability

> **Having identified vulnerabilities, the FPC then considers the impact that these vulnerabilities could have on UK financial stability.**

Identifying vulnerabilities enables the FPC to focus on the risks associated with MBF that could pose the most serious threats to UK financial stability.

Vulnerabilities can build up over time and create imbalances in the system. These imbalances can in turn amplify shocks and disrupt the stable provision of financial services to the rest of the system and the economy, resulting in a material impact on UK financial stability and tighter financial conditions for UK households and businesses.

To fully assess the impact that such imbalances may have on financial stability, the FPC considers three key transmission channels through which shocks can propagate:

1. Disruption to **systemically important financial markets**, ie, financial markets that provide financing or other important services to the real economy, and which cannot be easily substituted. Markets are disrupted when their functioning is seriously impaired leading to unwarranted tightening of financial conditions for UK households and businesses. Nonetheless, financial markets may – and should be able to – exhibit significant volatility but still function without impacting financial stability. As highlighted during the LDI stress, problems in NBFIs can transmit distress to markets that are systemically important, such as the government bond market, which in turn can have implications for the pricing of household and business credit linked to these markets if they fail to function effectively.
2. Disruption that could pose risks to **systemically important institutions**. Problems in MBF can impact providers of vital financial services, such as banks, insurers, and infrastructure providers, which often have significant exposure to NBFIs. For example, banks conduct repo and derivative transactions with hedge funds through their broker-dealer operations. If, for example, asset values fall suddenly, banks' exposures to hedge funds could become insufficiently collateralised, meaning that disruption in the hedge fund sector could lead to losses for banks, particularly where these banks do not have adequate risk management practices in place, and consequently spill over to the real economy through a reduction in the provision of credit.
3. Disruption to **the provision of vital services**, such as providing payment and settlement services, intermediating between savers and borrowers and channelling savings into investment, and insuring against and dispersing risk. Risks arise when the provision of one or more of these services from a sector is susceptible to rapid withdrawal, which can lead to an interruption of vital economic activity. For example, disruption to CCPs and the clearing and netting services they provide could have a significant impact on financial stability.

2.1.3: Output of the FPC's risk assessment and how the framework works in practice

> **The FPC uses this framework to prioritise further analysis and policy development towards the most material risks to UK financial stability.**

Taken together, this framework enables the FPC to focus on vulnerabilities in MBF that could pose material threats to UK financial stability (refer to Figure 5). In doing so, the FPC considers the materiality of the risks to the real economy that these vulnerabilities give rise to, as well as interlinkages across financial markets and institutions. The FPC's assessment relies on regular monitoring and horizon scanning at sector and market level by Bank staff, using available data, as well as domestic and international intelligence (Section 2.1.4). This allows the FPC to identify early on if new or previously identified vulnerabilities or interlinkages are increasing or crystallising in the areas which pose the greatest threats to financial stability.

> **Given the global nature, complexity, and interconnectedness of MBF, the FPC takes a judgement-led approach, informed by the FPC's views on the current conjuncture, risk environment, and outlook for the economy and financial markets.**

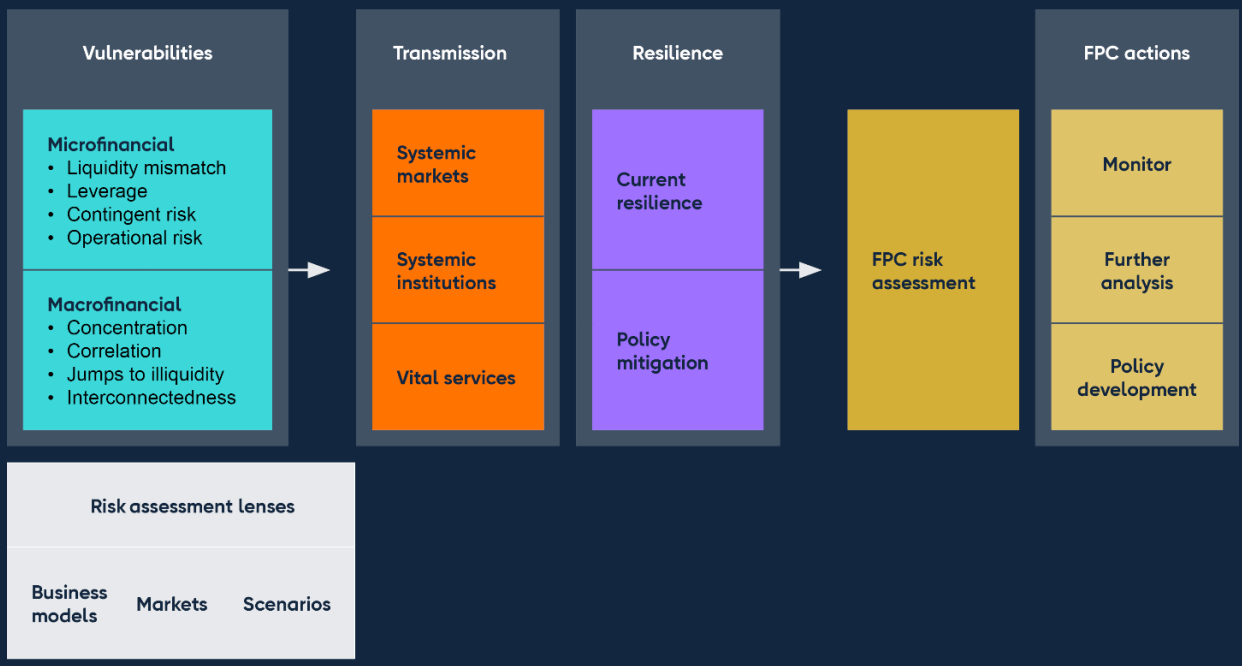
Based on its identification of the most material risks to UK financial stability, the FPC decides whether to commence or continue close monitoring of certain activities or sectors, or to launch in-depth assessments. Following these assessments, the FPC judges, where relevant, whether identified vulnerabilities will be addressed by domestic or international workstreams, or whether further action may be needed (Section 2.2). It may recommend changes to regulation, either by activities moving into the regulatory perimeter, or a change in regulation for activities already within the perimeter, as described in Section 1.3. In doing so, it will also consider whether it is necessary for action to be taken internationally given the global nature of MBF (Section 2.2.3).

In other cases, after identifying vulnerabilities, the FPC can judge that no further action is warranted on financial stability grounds. For instance, the FPC considered risks related to synthetic exchange-traded funds (ETFs) a number of times, and **in 2019 judged that the majority of ETFs do not appear to present a material risk to financial stability**. This is because the ETFs that could pose risks to financial stability if they grew further – those with less liquid underlying assets, those that use leverage or other procyclical strategies, and synthetic ETFs – accounted for only around one third of the ETF market. And the entire ETF market remained small relative to OEFs. However, this does not imply that vulnerabilities that were

once deemed less material will remain so indefinitely, and the FPC regularly reviews its assessment of vulnerabilities and updates its judgements where needed. This is largely supported by effective horizon scanning and risk monitoring.

Figure 5: The FPC's approach focuses on vulnerabilities, transmission channels and resilience

Factors considered in the FPC's approach to assessing risks from MBF



Source: Bank of England.

The FPC has used its framework to identify some important vulnerabilities, but it does not aim to predict specific shocks.

Using its framework, the FPC has been able to identify and monitor many of the vulnerabilities that were central to the 'dash for cash' and other stress episodes (Section 2.2.2). In many cases, the vulnerabilities in question were flagged prior to the stress episodes as having the potential to seriously impact financial stability.

But complex interactions within MBF and the wider financial system mean that vulnerabilities that are ostensibly small can turn out to have a large impact in stress. This was the case with LDI funds, for example, where pooled funds, which

represent a relatively small section of the market, combined with an unprecedented shock to generate a significant degree of stress in the much larger gilt market (Box B).

Furthermore, shocks hitting the financial system are often unpredictable, and can be unprecedented in scale. This has been forcefully illustrated in recent years with a pandemic and the Russian invasion of Ukraine, both of which led to unprecedented price moves that were associated with episodes that threatened financial stability. For this reason, the FPC does not attempt to predict specific shocks that might occur, nor does it seek to build resilience for every possible shock, and instead focuses on: (1) understanding vulnerabilities and transmission channels as described above; and (2) building resilience to a range of severe but plausible shocks as described in Section 2.2.

2.1.4: Data sources and intelligence

> **In undertaking its assessments, the FPC draws on a range of data and inputs from various sources.**

The FPC uses regulatory data and a range of commercial data sources, including financial market data and funds data. To the extent possible, quantitative data are used to monitor risks such as leverage and liquidity mismatch, but there remains a number of important gaps in existing data which are discussed in Section 3.2. In addition, the FPC uses survey data and market intelligence to help make assessments about individual sectors and market trends.

> **The Bank has access to data from a number of regulatory sources that it has invested in over time.**

Data from regulatory sources have been important in supporting the FPC when applying its risk assessment framework, especially as the Bank has developed its data capabilities and usage of these data over time. In assessing risks associated with MBF, the FPC primarily relies on:

- data from trade repositories collected and maintained under the European Market Infrastructure Regulation (EMIR);
- transaction data in financial instruments reported to the FCA under the Markets in Financial Instruments Directive (MiFID) framework;

- fund information including leverage metrics reported by some asset management firms to the FCA under the Alternative Investment Fund Managers Directive (AIFMD) and Undertakings for the Collective Investment in Transferable Securities (UCITS) frameworks;
- details of securities financing under the UK Securities Financing Transactions Regulation (SFTR); and
- data on secured and unsecured money markets from the Sterling Money Markets Data (SMMD) collection.

The Bank has also built monitoring capabilities for certain types of funds (eg, MMFs, property funds, ETFs, and OEFs) using data from commercial providers. For example, for most sterling MMFs, the Bank is now able to regularly monitor flows, as well as their holdings of liquid assets.

> **Regulatory and commercial data are supplemented by the FPC's use of survey data.**

Examples of surveys used by the FPC include:

- the biannual Hedge Funds as Counterparty Survey (HFACS), which provides the FPC with insights on hedge fund participation in repo markets, including the maturity and net position of their repo borrowing;
- the **Systemic Risk Survey** – which tracks market participants' views of UK systemic risks; and
- One-off, topic-specific surveys, such as the joint **Bank-FCA survey of OEFs** in 2020, which provided new information on the availability and use of tools to mitigate liquidity mismatch in OEFs.

Institution-focused data from surveys is complemented by analysis of developments in the liquidity and functioning of government bond, equity, and corporate bond markets, as well as the structure of related markets. This is also supported by information from the FSB's **Standing Committee on Assessment of Vulnerabilities**, which identifies and assesses global risks and vulnerabilities in the financial system and reports its findings through the relevant channels twice yearly.

> **Under the guidance of the FPC, Bank staff complement these sources of data by gathering a wide range of other intelligence.**

Supervisory intelligence from sectors regulated by the PRA and the Bank is used to gather information on MBF. **Market intelligence** also plays an important role as it can provide fresh qualitative information to supplement the FPC's analysis and insights on markets, products, and sectors for which little or no public data are available. Market intelligence can also flag sources of financial instability and provide context and narrative to more quantitative data sources.

Within the UK, the FPC and the Bank engage closely with authorities, including the FCA, TPR, and HM Treasury, on relevant issues. International engagement is also a key pillar of the FPC's approach. The Bank actively engages bilaterally with other central banks and international institutions, and in international fora, such as the FSB, to identify and assess risks to financial stability and to develop international policy responses.

2.2: Building resilience

2.2.1: Enhancing MBF resilience

> **Building MBF resilience is key to safeguarding the stability of the UK and global financial system.**

The resilience of MBF reflects the extent to which it can absorb, rather than amplify, shocks and thus continue to support households and businesses. The actions of a range of investors, intermediaries, and infrastructure collectively determine how well the system of MBF functions. Financial stability risks can arise when important markets fail to function, or more generally when the system is unable to supply the vital services on which the real economy relies. And because NBFIs are interconnected within the financial system, they can transmit stress – including to systemically important institutions, such as banks and CCPs.

> **One important way in which MBF resilience can be improved is by addressing the imbalance between demand for and supply of liquidity in stress.**

Consistent with the FSB's workplan (refer below), the FPC's work to identify ways to increase the resilience of MBF is currently focusing on three key areas:

- Preventing undue increases in the demand for liquidity from the non-bank financial system in stress, for example through greater NBFI liquidity

preparedness.

- Ensuring the resilience of the supply of liquidity in stress, for example through enhancing dealer intermediation and market structure reforms.
- Assessing what can, or should, be done by central banks to backstop market functioning effectively, without creating incentives for market participants to take on more risks.

Vulnerabilities within MBF can greatly add to demand for liquidity in stress, which can amplify shocks. Demand for liquidity can be driven: either by a need to reduce exposure to certain assets as a consequence of a change in the value of these assets (‘market liquidity’); or though the management of liquidity demands following increases in derivative margin calls (‘cash liquidity'); or through the forced unwinding of leveraged positions by non-banks, which can lead to asset sales, fund redemptions (in MMFs or OEFs), or borrowing to access cash. At the same time, the supply of liquidity from market participants who normally provide it, such as dealers and other market makers, tends to decrease in stress, as they seek to protect their own balance sheets and reduce their positions.

The resulting imbalance of liquidity supply and demand can lead to fire sales and other actions that can affect financial stability through the channels outlined in Section 2.1.2.

> **Individual market participants, overseen by sectoral regulators, are responsible for their own resilience in the face of shocks, while the FPC’s role is to consider the system as a whole.**

It is first and foremost market participants’ responsibility to understand and manage the risks they face through adequate internal controls and governance. And sectoral prudential regulators, such as the PRA and FCA, have a responsibility to oversee individual participants’ resilience and ensure markets are functioning effectively. More self-insurance on the part of firms should reduce the degree to which they need extra liquidity in stress.

However, the level of self-insurance that firms and sectoral regulators judge is appropriate may not be sufficient to support financial stability. The collective actions of participants have the potential to generate spillovers to financial stability, even when individual actions seem rational. It may be difficult for individual participants

to be fully cognisant of, and prepare adequately for, these potential spillovers. In some cases, they may not have the incentives or ability to do so. The FPC has a responsibility to identify and take action to remove or reduce risks to financial stability, and, as such, plays a key role in supporting the resilience of the UK financial system as a whole, taking into account spillovers and interactions within the system.

> **While central banks have a role to play to backstop market functioning, it is important they do not substitute for a failure to achieve the appropriate level of private insurance against liquidity risk.**

Central Banks have a key role in backstopping against exceptional risks: it is not feasible nor credible for the private sector to self-insure against every possible outcome. But the costs of providing public insurance against such exceptional risks are only worth incurring where the public benefit of intervening (or cost of not intervening) is large.

Excessive public insurance would be costly and dampen private incentives to manage risks if firms conclude that the public authorities may in the future be willing to cover part of the downside returns to their risk-taking activities. Hence, care is needed to ensure that public resources are not used to substitute for the failure of private actors to take appropriate steps to mitigate their own risks.

It is therefore important that private and public insurance against shocks are developed in a co-ordinated way. This means both NBFIs and central banks need to take actions to reduce risks to financial stability. NBFIs need to build stronger resilience against liquidity shocks, as outlined in Sections 2.2 and 3.3, and central banks should develop tools to insure against exceptional risks originating in the system of MBF, as described in Section 3.4.

2.2.2: Past FPC actions related to MBF resilience

> **The FPC has identified a range of key vulnerabilities and taken action in the past to enhance MBF resilience.**

Using its framework, the FPC has identified a range of key vulnerabilities in recent years and taken various actions to assess and mitigate them. The FPC regularly monitors these vulnerabilities, as well as the progress made on the actions to address them. This helps the FPC to prioritise policy workstreams, and, together

with its assessment of current market and economic conditions, to judge whether these workstreams are advancing at an adequate pace to achieve their intended objectives. Table A summarises the key vulnerabilities that the FPC has considered in detail, as well as current policies related to these vulnerabilities.

Table A: MBF vulnerabilities and policy initiatives

(a) Managing the demand for liquidity in stress

Identified vulnerabilities in MBF	Key findings and recommendations	Current policy initiatives
Liquidity mismatch in **MMFs**	• The FPC identified liquidity mismatch in **MMFs** as a key vulnerability in 2015 and 2021. • The FPC judged that MMFs should be able to withstand severe but plausible levels of investor outflows, and that holding more liquid assets is an effective way to increase MMF resilience and so reduce risks to financial stability.	• UK authorities will consult on specific measures later this year, following the **discussion paper** issued by UK authorities in May 2022. • Internationally, the FSB has also published **international policy proposals to enhance MMF resilience**.
Liquidity mismatch in **OEFs**	• **In 2019, the FPC judged** that the liquidity mismatch between redemption terms and some **OEF** assets creates a first-mover advantage to redeem in stress. • As a result, **the FPC set out principles for the design of OEFs** to better align redemption terms with the underlying liquidity of funds' assets. • The FPC judged that it would be beneficial to extend the notice periods of property funds to between 90 and 180 days, in line with the **proposals** made by the FCA in August 2020.	• Internationally, work on OEFs has been taken forward by the FSB and the International Organization of Securities Commissions (IOSCO). The FSB recently issued a **consultation paper** seeking to better align funds redemption terms with the underlying liquidity of their assets through a more consistent categorisation approach. IOSCO has published a **consultation paper** on guidance for the effective implementation of anti-dilution tools. • In 2023, the FCA **published findings** and **wrote to asset manager CEOs** on liquidity management frameworks.

Identified vulnerabilities in MBF	Key findings and recommendations	Current policy initiatives
Non-bank **leverage**	• **Leverage in non-banks** was identified as a key vulnerability in 2017 and further assessed via a deep dive in 2018 (refer to **November 2018 FSR**). • The FPC judged that it was important to enhance authorities' ability to identify and monitor risks from leverage across the financial system and develop their understanding of financial stability risks arising from a build-up in NBFI leverage, as well as strengthen risk management in providers of leverage. • As part of its assessment, the FPC also highlighted the need to monitor risks associated with the use of leverage by LDI funds.	• **Ongoing international work co-ordinated by the FSB** to assess the role of leverage in amplifying liquidity imbalances and, where necessary, take policy action is progressing and the **FSB has recently published** a report outlining further implications of leverage in NBFI intermediation. • Additionally, building on the events of the Autumn 2022 LDI stress, **the PRA recently published 'Dear CRO' letters** following their review of fixed income financing businesses. This comes after **'Dear CEO' letters published in 2021** in the wake of the Archegos failure.
LDI leverage	• The FPC judged that **LDI funds** should be able to withstand severe but plausible stresses in the gilt market; meet margin and collateral calls without engaging in asset sales that could trigger feedback loops; and improve their operational processes to meet margin and collateral calls swiftly when needed. It has set out a **resilience standard for LDI funds** consistent with its assessment of required resilience to support financial stability. • To achieve this, the FPC recommended that TPR take action to implement the standard, in collaboration with overseas regulators.	• In April 2023, TPR published **guidance on using leveraged LDI** and the FCA published **guidance on enhancing resilience in LDI**. • The FPC welcomed the steps taken by TPR and the FCA to ensure the continued resilience of LDI funds and will continue working with the FCA, TPR, and overseas regulators to monitor the resilience of LDI funds closely.

Identified vulnerabilities in MBF	Key findings and recommendations	Current policy initiatives
Liquidity demands from **margin calls** in stress	• In **2017** and **2021**, the FPC considered margin calls during high market volatility, including during the 'dash for cash'. • In 2022, the Basel Committee on Banking Supervision (BCBS), the Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) and IOSCO published a **consultative report on their review of margining practices in centrally and non-centrally cleared markets**.	• The FPC supports ongoing **international work co-ordinated by the FSB** to take forward further initiatives, including policy work on increasing transparency in centrally cleared markets; enhancing the liquidity preparedness of market participants as well as liquidity disclosures; and identifying data gaps in regulatory reporting.

(b) Increasing the resilience of the supply of liquidity in stress

Identified vulnerabilities in MBF	Key findings and recommendations	Current policy initiatives
Capacity of markets to intermediate in stress without compromising on the resilience of dealers	• The FPC identified the **fragility of market liquidity** as a key risk to the resilience of MBF in 2014 and commissioned a deep dive which was published in 2016 (refer to **July 2016 FSR**). • In July 2021, the FPC suggested that **market capacity could be enhanced by exploring ways to enhance dealer intermediation capacity as well as changes to market structure** (including greater central clearing of government bond and repo transactions, as well as the relative importance of different types of market participants).	• The FSB's work on **government bond liquidity** in 2022 suggested that jurisdictions explore increasing the availability and use of central clearing for government bond cash – and especially repo – transactions, as well as the use of all-to-all trading platforms. Better market and regulatory transparency could complement this. • Domestically, the FCA has introduced **changes** earlier this year to improve market transparency as part of the Wholesale Markets Review.

2.2.3: Regulatory and international co-operation

Resilience and regulatory action for NBFIs and financial markets need to be considered in the context of a diverse regulatory landscape.

NBFIs operate in a complex and fragmented regulatory landscape. In the UK, the PRA and Bank regulate and supervise insurers and CCPs. The PRA and FCA regulate broker-dealers. The FCA is the conduct and prudential regulator for a large number of investment funds and managers, as well as principal trading firms and trading venues. And TPR regulates work-based pension schemes.

Furthermore, there is a significant international dimension to building resilience in MBF. A large number of entities accessing UK markets are regulated overseas. And legal entities are often domiciled in one jurisdiction, but managed from another; this is particularly the case for investment funds.

All of this means that action to enhance the resilience of MBF requires significant co-ordination and co-operation between authorities, both in the UK and abroad.

Reflecting the global nature of MBF, much of the FPC's and Bank's work to enhance resilience needs to be undertaken internationally.

As previously noted, the high degree of interconnectedness and cross-border activity associated with MBF mean that global risks are most effectively addressed through internationally co-ordinated reforms.

International co-ordination can reduce the risks of cross-border spillovers, regulatory arbitrage, and market fragmentation. The recent market volatility episodes are a reminder of the underlying structural vulnerabilities in MBF and their potential to transmit risks to other markets. They underscore the importance of developing and implementing global policies to mitigate these cross-border risks.

The international work programme set up following the March 2020 'dash for cash' is therefore a crucial part of the FPC's approach to building resilience.

Given the benefits of internationally co-ordinated reforms to MBF, the FPC strongly supports work by the FSB to enhance the resilience of MBF and, as such, supports both UK and global financial stability.

The FSB's comprehensive work programme focuses on: increasing the resilience of MMFs and OEFs; improving margin practices and understanding drivers of illiquidity in core funding markets; and addressing the risks arising from leveraged non-bank investors, building on the lessons of the failure of Archegos and the LDI funds episode.

International regulators need to continue to work at pace to develop and implement appropriate policy reforms to address risks associated with MBF, and to reduce the likelihood and impact of future stresses.

> **The FPC also works to reduce vulnerabilities domestically where it is effective and practical.**

The FPC is more likely to consider domestic action where risks are entirely or predominantly UK-specific, and where its powers can be used effectively to mitigate those risks.

To address cross-border or global financial stability risks, the FPC considers domestic action alongside or independently from international action where this:

- is expected to improve UK financial stability, taking into account likely behavioural responses and the potential for regulatory arbitrage;
- may inform or accelerate international policy development; and
- would not have a negative impact on global financial stability.

When financial stability risks predominantly concern a small number of jurisdictions, the FPC and Bank seek to act with other authorities in groups with enhanced co-ordination, where this is feasible. For example, the Bank is working closely with both domestic and overseas regulators to monitor and reduce the vulnerabilities in LDI funds as well as to respond to the failure of Archegos.

2.3: Responding in stress

> **Central banks have tools to intervene where market dysfunction would threaten financial stability.**

As explained in Section 2.2.1, the FPC seeks to proactively build resilience in MBF. But it is not proportionate to expect that a level of resilience should be maintained that would guard against every conceivable size of shock or stress. Central bank

tools can therefore play an important role in supporting financial stability by providing a market backstop against shocks for which resilience cannot feasibly be built in advance.

Central banks have traditionally focused on providing backstop liquidity via the banking system and relying on banks to pass it on to other financial market participants. The Bank, for example, offers a **range of facilities** to banks and broker-dealers, including the Indexed Long-Term Repo and Contingent Term Repo Facility (CTRF).

Central banks globally have used these tools to address risks to financial stability in recent years. For example, in the March 2020 'dash-for-cash', central banks – including the Bank – stepped in to maintain monetary and financial stability by cutting interest rates and buying bonds, as investors sold off even safe assets such as long-term government bonds in order to obtain short-term highly liquid assets. The Bank also activated the CTRF, allowing banks to borrow central bank reserves (cash) in exchange for other less liquid assets as collateral.

And during the September 2022 LDI stress, the FPC recommended that action be taken by the Bank to restore market functioning after actions taken by LDI funds in response to a sharp rise in gilt yields threatened UK financial stability. The Bank launched a temporary and targeted programme of purchases of long-dated UK government bonds. The introduction of the facility, and its expansion in the final week of the programme, ensured the market had sufficient support to allow LDI funds to deleverage and rebalance their portfolios (refer to **December 2022 FSR**). Absent this intervention, the dysfunction would have likely resulted in further contagion from the system of MBF to banks and the real economy. In turn, this would have led to an unwarranted tightening of financial conditions and a reduction in the flow of credit to households and businesses.

As the importance of MBF grows, it becomes increasingly important that NBFIs have appropriate self-insurance. But there are questions around what should be considered sufficient and when it is reasonable for NBFIs to rely on central bank tools to provide a backstop through tail risk insurance. Section 3.4 discusses some issues and key design questions around such central bank tools.

3: Developing the FPC's approach

The FPC is further developing its approach to identifying and mitigating financial stability risks associated with MBF.

As noted in Section 1, there are inherent challenges posed by MBF, including its global nature, complexity, and interconnectedness. These challenges underline the importance of the FPC continuing to develop and adapt its approach as the system of MBF evolves.

This section sets out a number of ways the FPC is developing its approach, including by reflecting on lessons from stress episodes.

3.1: Risk identification, assessment, and monitoring

The FPC is reviewing and enhancing its risk assessment framework to ensure its approach to prioritising risks, analysis, and policy development is as effective as possible.

Given the breadth of MBF, the FPC's work has typically spanned a broad range of sectors and markets. This has supported the FPC in identifying a number of vulnerabilities and driving the international MBF policy agenda forward. It is, however, important to consider the right balance between covering ample breadth across the system of MBF, and focusing on areas that warrant analysing in more depth. To achieve this, the FPC is reviewing its current risk assessment framework to judge whether this framework is enabling it to prioritise deeper analysis and policy work as effectively as possible.

To support effective risk assessment and improve prioritisation, the FPC is also considering how it could enhance its use of horizon scanning in a way that best supports its objectives. Enhanced horizon scanning can be supported by improvements in the use of data and market intelligence, as described in Section 3.2. This includes, for example, broader, more regular, and more structured engagement with external stakeholders, such as industry experts and other domestic and international stakeholders.

The SWES will highlight areas of interconnectedness and critical nodes in the MBF system, helping the FPC to prioritise its activity.

Having a system-wide view of financial stability risks is an important element to support the FPC in prioritising effectively. The FPC can enhance its capability for system-wide analysis by deepening its understanding of where interconnections exist between different parts of the MBF system (including between MBF and the banking system), and where feedback and amplification channels can arise.

Running the SWES is an important step in building this. It is an exploratory exercise, designed to improve the FPC's understanding of the behaviours of NBFIs and banks during stressed financial market conditions, and how these behaviours can combine to amplify shocks in a number of core UK financial markets. The focus of this exploratory exercise is on market resilience and its importance for UK financial stability rather than being a test of the participating firms themselves.

The information gathered from the SWES is expected to improve the FPC's understanding of what drives financial firms' stressed behaviours, and how these firms use financial markets to respond to stress. The exercise will bring together data and information from various parts of the financial system to develop both system-wide and sector-specific insights – thereby accounting for interactions and amplification effects within the financial system that individual financial institutions working alone cannot assess. And this will play an important role in how the FPC assesses its current framework, and how it might improve it to focus on areas that matter most for financial stability.

3.2: Improving data

Risk assessment in MBF requires a complex set of data and qualitative intelligence.

Data to support the assessment of risks associated with MBF would ideally be able to provide broad visibility of where vulnerabilities may be building up in the system as well as how these vulnerabilities could interact. In particular, data on participants' business models, activities, behaviours, and the markets they operate in, and on interlinkages between them and the rest of the system would be particularly valuable. Comprehensive data to assess risks associated with MBF would have to encompass, at adequate frequency, a large number of variables.

These would include, at least, balance sheet, transactions, net and gross exposures, asset holdings, and collateral data for a range of UK markets and participants. In practice, obtaining this data in full and on a cross-border basis is extremely difficult.

Nonetheless, quantitative MBF data alone, such as exposures data, will not be able to fully measure risk absent a broader set of assumptions on risk sensitivities and metrics. That is why the FPC complements its quantitative data with market intelligence and survey data.

> **To support the development of the FPC's approach and more effective prioritisation, it is essential to improve the coverage and quality of data available for monitoring, assessing, and mitigating risk.**

Given the global and fragmented nature of MBF, some important gaps remain in the data available, and this can impede the effectiveness of the FPC's risk assessment and actions to enhance resilience in the system.

Addressing these gaps in the data to provide a better view of risks and support UK and global financial stability, and how the FPC uses data more broadly, is a key priority. This will require a combination of: improvements to the type, quality, and coverage of the data; international efforts to share data across borders more openly and collaboratively; and a better understanding of contingent liquidity risk to determine the scale of the threat to financial stability. Relying on exposures data alone is sub-optimal, especially when positions are dynamic.

The FPC has previously set out its data priorities in a way that closely reflects and supports its policy priorities (refer to the Bank's July 2021 report **Assessing the resilience of market-based finance**). In particular, the FPC has identified key gaps in funds' exposures and leverage in MBF that limit its understanding of: (1) the liquidity demands of different institutions; (2) their preparedness to meet these demands; and (3) potential spillovers to the rest of the system. Additionally, the FPC highlighted the scarcity of data on the supply side of liquidity, with opacity around dealers' inventories of gilt and UK corporate bonds and, relatedly, data on holdings of sterling securities more generally. These gaps were also highlighted by the IMF in the **2021 UK Financial Sector Assessment Program**.

Work to remediate some of these gaps is underway. On data relating to NBFIs for example, the Bank's work depends largely on collaboration with the FCA, the Office for National Statistics (ONS), and other authorities. In particular, the Bank is working with the ONS to improve the quality, coverage, and granularity of the UK Financial Accounts as part of the **'Flow of Funds' initiative**, where the UK's data on the financial sector and financial flows are less detailed than those for many other advanced economies, including the US and EU. Flow of funds data will provide valuable additional information on 'whom-to-whom' exposures at sector level.

But this can only partially address existing data limitations. The UK is a leading global financial centre, with a large share of sterling securities and trading carried out by entities outside the UK and not reported to UK authorities. Therefore, considerable global co-operation and data sharing are required to remediate MBF data gaps effectively.

Also, transaction data alone, which covers flows rather than stocks, only give a partial view of potential financial stability implications; and exposures are dynamic and therefore not sufficient to determine the scale of risks. Building comprehensive knowledge of contingent risk is essential to effectively estimate the impact of exposures on UK financial stability.

In addition, the Bank will continue to invest in its existing data. For example, Bank staff are developing an analytical toolkit to improve the FPC's monitoring of counterparty exposures. This could help the FPC monitor the build-up of micro and macroprudential risks, as in the case of Archegos.

Bank Staff, under the guidance of the FPC, are also embedding more regular use of data analytics to get more out of existing datasets and build a deeper understanding of vulnerabilities in the system, including where they might crystallise. For example, staff are exploring ways to intersect data from different sources to try to plug some of the known data gaps, and also to provide a more holistic view of risks across the system and identify interlinkages and critical nodes. Work on the SWES will complement this approach and provide a system-wide view of risks through the data collected as part of the exercise.

Finally, there may also be instances where UK regulators could use their statutory powers to collect data on NBFIs, especially if risks are growing in a particular sector.

3.3: Building resilience

The FPC is developing its approach to macroprudential tools for MBF.

Macroprudential tools are forms of prudential regulation, or other requirements, that authorities use to ensure a stable provision of financial services to the real economy. These tools are designed to address issues of system-wide resilience that may not be fully captured by the regulation of individual firms. For example, requirements that vary over time or address spillovers from one sector to another.

While the FPC has a range of powers to enhance resilience generally, there are currently limited macroprudential tools available to address amplification triggered by MBF as a whole. This is also true internationally, where macroprudential policy development for MBF is at an earlier stage of development than for banks.

Existing proposals for the implementation of macroprudential tools for MBF are mostly aimed at reducing the probability and severity of fire sales. As discussed in Section 2.1.1, these can be driven by a liquidity mismatch in unsecured funds with open-ended structures (eg, OEFs and MMFs) or increased margin requirements in secured financing markets (eg, derivatives and repo). Some other discussions have focused on the role of macroprudential authorities in setting margin and haircut requirements, as well as central clearing. Box A gives an overview of the current public debate on macroprudential tools for MBF.

Alongside, and as part of, this international and academic work, the FPC will continue to engage with new thinking on macroprudential tools for MBF to see how effective they might be at mitigating risks. More work needs to be done on the types of tools that could be effective and on their detailed design. Several factors will need to be considered, including: the range of sectors involved in MBF; how to engage with other authorities given the heterogeneous regulatory landscape; and the potential costs and benefits of such tools, given the role that MBF can play in contributing to a more diverse financial system.

The FPC is also considering principles for MBF resilience more broadly.

Resilience standards that ensure that individual sectors absorb shocks rather than amplify them can potentially address a range of vulnerabilities (eg, liquidity mismatch, preparedness for margin calls, or leverage). They may be developed by microprudential authorities in pursuit of their objectives for the safety and soundness of individual firms, or by macroprudential authorities, like the FPC, seeking to achieve system or market-wide resilience. In many MBF sectors, there are limited resilience standards, given the historical focus of regulation on market integrity and conduct.

As a step toward such standards, the FPC is considering a set of principles that could guide their development. Setting out general principles for resilience standards promotes transparency and accountability around the FPC's thinking on this topic. It also ensures market participants understand the need to prepare both for idiosyncratic risks as well as the risk of spillovers in markets.

General principles are also important because the diversity of MBF means that a single resilience standard would not be appropriate. Resilience instead must be considered, and standards must be developed, on a sector-by-sector basis. General principles for MBF resilience would help to ensure consistency and coherence across different MBF sectors.

Resilience standards should:

1. **be specific and targeted**

- Any resilience standards developed by macroprudential authorities such as the FPC must be clearly linked to addressing the relevant financial stability risks.
- Resilience standards should tackle the relevant vulnerabilities as directly as possible.

2. **cover idiosyncratic and systemic risk**

- Resilience standards should cover the idiosyncratic risks faced by individual firms as well as risks to financial stability. This ensures that markets as a whole are resilient to shocks and can continue to function properly, even during stress events.

- Where resilience standards exist for microprudential purposes, macroprudential regulation should build on those where needed without duplication.
- Operational risk factors should be considered in the design of resilience standards. These will vary by sector along with the standards themselves, but the underlying goal is to ensure that where operational risk issues occur, they do not affect the functioning of the system of MBF and the wider UK financial system.

3. **be calibrated to appropriate levels**

- Resilience standards should be calibrated to appropriate levels. For example, they could be calibrated to ensure that MBF sectors and markets can continue to function in the event of a severe but plausible stress. Ensuring that MBF is resilient to such stresses will mean that it can support financial stability as well as the wider economy consistently.
- The costs of greater resilience also need to be considered.
- Finally, where data are less available and accessible in a sector, the FPC's ability to analyse and track vulnerabilities will naturally be lower. There may therefore be a case to calibrate resilience more conservatively for sectors with material data gaps, to provide more assurance in the absence of sufficient information.

The FPC continues to develop its thinking on where and how to apply these principles.

3.4: Developing central bank tools to deal with threats to financial stability from systemic market stress

As described in Section 2.3, the Bank, and other central banks, have a range of tools that can be used to address market dysfunction when required. However, the growing role of non-banks in the financial system means there are potential benefits from a financial stability perspective in supplementing traditional central bank liquidity tools. Recent stresses have demonstrated that providing liquidity support to the banking system is not necessarily sufficient to address stress in the wider financial system.

Backstops are more likely to prove effective if central banks provide more transparency about when liquidity will be available in advance.

Providing some high-level transparency about backstop facilities can help set expectations among market participants about the circumstances in which central banks will, and will not, act. While transparency can help market functioning in times of stress, it may also result in greater risk-taking if market participants assume central banks will always step in.

Central banks will need to develop a framework to decide: (1) in which markets dysfunction is likely to pose financial stability risks; (2) when financial stability is sufficiently threatened for intervention to be necessary; and (3) which tools will be required to target the underlying market vulnerability in question.

The Bank is working to develop the tools needed to deal with liquidity risks and considering the types of tools required in different scenarios.

The types of tools the Bank is considering include a collateralised central bank lending facility open to eligible NBFIs, and temporary, targeted asset purchases for financial stability purposes.

A key policy question to consider is which non-banks might be eligible to access a NBFI lending facility.

In order to maximise effectiveness, a lending tool would need to be available to a broad range of participants with a significant presence in core markets. But as discussed in Section 2.2.1, this goal must be balanced against the need for the tool to act as a genuine backstop. An overly generous facility would not only put excessive amounts of public resources at risk; it would also incentivise greater liquidity risk-taking by NBFIs. That could undermine, rather than bolster, financial stability. The Bank will also need to consider which non-banks would be able to participate in any lending facility, given legal and operational constraints, as well as non-banks' willingness to use this facility.

The Bank is taking a two-step approach to design a facility that is effective in restoring stability, while incentivising NBFIs to act now to improve their own risk management.

As a first step, the Bank announced in September 2023 that it was embarking on the design of a facility allowing it to lend to insurance companies and pension funds (ICPFs), including LDI funds.[3] And, as a second and parallel step, the Bank will explore how access might be expanded over time in a way that reaches a broader range of NBFIs, while still meeting the backstop principle. This might be done, for example, by varying the terms of access (including prices and haircuts) according to firms' resilience levels and/or the efforts being made to reach an appropriate level of resilience.

The Bank's expectation would be to use any future NBFI lending tool ahead of asset purchases, where it can target the underlying vulnerability effectively. This is because collateralised lending presents fewer risks to public funds, and the stance of monetary policy, and less potential **moral hazard**. However, this tool may not be effective in all stresses. For example, central bank lending is not able to address stresses where asset sales are driven by NBFIs' need to reduce exposure to the assets or to deleverage. Temporary and targeted asset purchases may therefore be effective in situations that a lending tool cannot address. For example, they were effective in addressing dysfunction in long-dated gilt markets in Autumn 2022.

Box A: Public debate on macroprudential policy for MBF

Macroprudential policy for MBF is less developed than its banking equivalent. In particular, there are no instruments akin to the countercyclical capital buffer, which applies to banks. But over recent years there has been an active public debate about the need for and role of such tools.[4] These buffers aim to build resilience in good times so that they can be released in bad times, allowing banks to absorb losses and continue to support lending to businesses and households.

Most proposals for macroprudential instruments aim to reduce the probability and severity of fire sales. Potential fire-sale mechanisms are different for unsecured (eg, OEF) and secured (eg, derivative, repo) investment types and markets, and the proposals reflect that.

To reduce fire-sales risks from liquidity mismatch, proposals have focused on reducing the first-mover advantage, and therefore the incentive for runs by OEF and MMF investors. The FPC set out **three principles it judged would lead to greater consistency between the liquidity of OEFs' assets and liabilities**. These are: (1) OEFs should assess the liquidity of their assets consistently; (2) the price of units redeemed should reflect any costs incurred in asset sales which may be necessary to fund the redemptions (swing pricing); and (3) redemption notice periods should reflect the time required to sell assets without discounts captured in OEFs' price adjustments. Other proposals have been made along similar lines, for example by the Brookings Institution on **swing pricing** and **longer redemption notice periods**. The FSB suggested the use of **regulatory liquidity buffers** – increasing asset liquidity – to enhance the resilience of MMFs.

Forced sales in secured financing markets have the potential to occur because collateral values can fall, and margin and haircut requirements can rise rapidly and materially. A first **set of proposals** aims to increase liquidity preparedness for margin calls (particularly on the part of clients), for example by increasing the transparency of the models that CCPs use to calculate

margins. Going one step further, regulatory floors on margins and haircuts have been proposed and, in some cases, implemented to limit their procyclicality (eg, **EMIR** forces European CCPs to choose between three margin policies, one of which has a floor, while **FSB members agreed** to introduce a framework of haircut floors for some non-centrally cleared securities financing transactions).[5]

The **ECB** (among others) has gone further in proposing that macroprudential authorities be given powers to vary margin and haircut requirement add-ons. Add-ons would be relaxed in stressed periods, reducing the need for forced sales and so supporting financial stability in a stress in a similar way to the CCyB. To the extent that required collateral is relatively liquid, these add-ons would be similar to liquidity requirements. And to the extent that the liability counterpart to the add-ons is own funds, they would be akin to capital requirements. Regulatory margin requirements already exist but have not been used as a countercyclical instrument in recent years, although the Federal Reserve did vary margin requirements for stock purchases **between the 1930s and 1970s**.

Researchers at the IMF have proposed that central banks play a direct role by varying margin and haircut requirements on their own lending facilities. This would have added impact if some subset of financial system liabilities were forced **ultimately to be backed with access to the central bank discount window**, with collateral pre-positioned as security.

Other proposals have advocated taking a more market-led approach. For example, some proposals argue that hedging markets, such as the **commercial property futures market in the UK**, should be developed further. This would make it easier for NBFIs to reduce balance sheet mismatches that give rise to forced sales.[6] One **proposal** goes further, suggesting that institutions should bear the social costs associated with forced selling, by requiring them to purchase the right to sell in stressed periods ahead of time. To implement such a proposal, however, there would need to be a mechanism to prevent sales by participants who had not purchased the right to sell.

Finally, as well as reducing the need for forced selling, there have been proposals to make it easier for private buyers to step in during stress. Dealers play this role, but could do so more effectively if **more trades were centrally cleared**, reducing the demands on dealer balance sheets.

While such proposals are aimed at improving the resilience of MBF, it is important to take into account the potential costs alongside the benefits of their implementation when evaluating them, as well as considering the role that MBF can play in contributing to a more diverse financial system.[7]

Box B: Liability-driven investment funds resilience standard

LDI funds faced severe stress in Autumn 2022.

In Autumn 2022, UK government bond yields moved with unprecedented speed and scale. This caused significant falls in the prices of long-dated gilts – a portion of the gilt market concentrated in LDI funds. Because LDI funds were vulnerable to increases in leverage, and falling gilt prices reduced the value of their assets, they needed to post additional collateral on their secured borrowing and/or pay margin calls on derivatives. To meet these liquidity demands, as well as reduce leverage, LDI funds required that their defined benefit pension scheme investors provided more funding. But in many cases, operational barriers prevented pension schemes from providing funding quickly enough (refer to **With leverage comes responsibility – speech by Jonathan Hall** for more detail).

Where this rebalancing could not be achieved quickly enough, LDI funds were forced to sell gilts as their prices were falling into an illiquid market. This risked reinforcing the downward pressure on gilt prices and spilling over to broader market dysfunction, with the risk of a spiral of falling prices and collateral calls, as illustrated in Figure A.

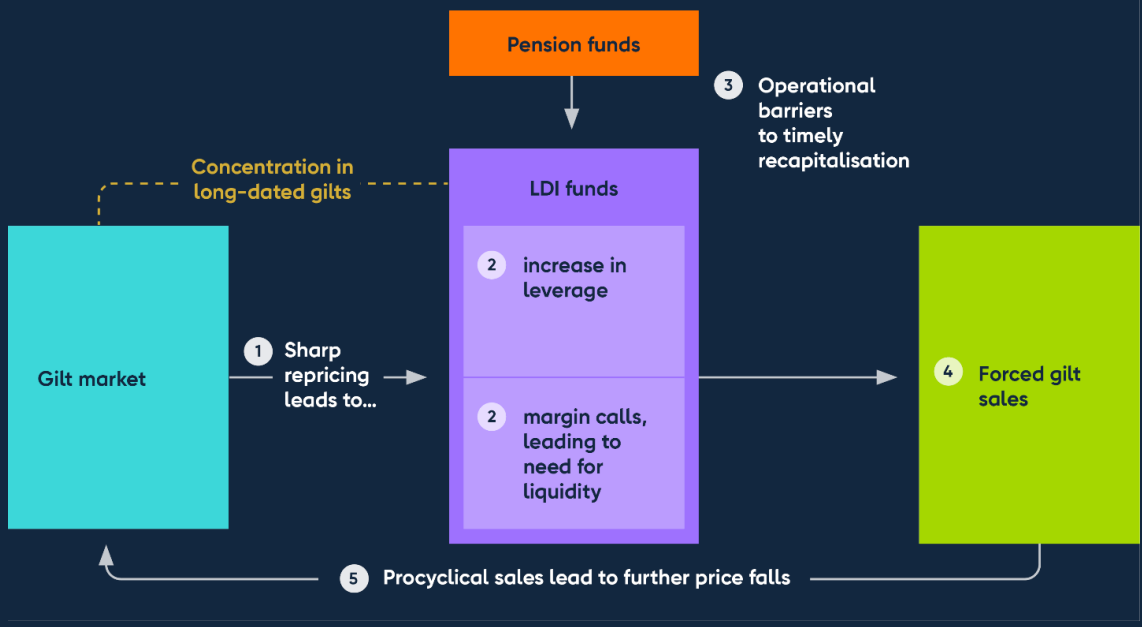
The issue was particularly acute for one section of the LDI industry – pooled funds, where a pot of assets is managed for a large number of pension fund clients who have limited liability in the face of losses. The speed and scale of the moves in yields far outpaced the ability of the large number of pooled funds' smaller investors to provide new funds to rebalance their positions. And so pooled LDI funds became forced sellers of gilts at a rate that would not have been absorbed in normal gilt trading conditions, never mind in the conditions that prevailed during the stressed period.

The concentrated and correlated nature of pooled LDI funds' exposures meant that their forced selling behaviour represented a sudden and profound shift in supply-demand dynamics; the self-reinforcing spiral it led to

threatened to cause further disruption across the broader gilt market (refer to **Risks from leverage: how did a small corner of the pensions industry threaten financial stability? – speech by Sarah Breeden** for more detail)

Figure A: Vulnerabilities in LDI funds meant they were forced sellers of gilts

Key channels and vulnerabilities in the LDI episode



Source: Bank of England.

In response to the material risks posed to UK financial stability, the FPC recommended that action be taken, and welcomed the Bank's temporary and targeted programme of purchases of long-dated UK government bonds. The introduction of this programme improved market conditions and allowed LDI funds to build resilience by deleveraging.

The FPC has set out a resilience standard for LDI funds.

The FPC has recommended a resilience standard for LDI funds in line with the principles in Section 3.3. The aim of the standard is to prevent forced gilt sales by LDI funds in the event of severe but plausible moves in yields –

forced sales that could otherwise lead to dysfunction in the gilt market and negatively affect financial stability.

The total amount of resilience that LDI funds should have should be made up of both a baseline and a systemic resilience component. The former would aim to capture the idiosyncratic risks of assets held by LDI funds; while the latter would aim to ensure that all LDI funds can absorb a severe but plausible historical stress, over the period of time needed to recapitalise the fund, without the need for forced asset sales so that step 5 illustrated in Figure A does not arise. The FPC judged that these factors meant that the size of the yield shock to which LDI funds should be resilient should be, at a minimum, around 250 basis points.

The standard is designed both to allow institutions to continue operating after withstanding a severe stress, and to ensure that systemically important markets remain resilient in stress.

> **The FPC is considering whether the principles underlying the LDI resilience standard could be relevant to other MBF sectors.**

The LDI resilience standard is based on the principles described in this section. These principles are relevant for other firms or sectors where insufficient resilience could lead to forced sales or other behaviours that amplify stress and potentially contribute to dysfunction in systemically important markets.

4: Next steps

This publication aims to advance the domestic and international debates on financial stability risks associated with MBF. The FPC welcomes feedback from interested parties on its approach to assessing and mitigating financial stability risks associated with MBF, and how it might be refined. Bank staff will seek to engage with interested parties over the coming months on the contents of this FSIF.

1. The FPC previously set out its approach to assessing risks in MBF in the **November 2017 FSR** and the Bank's 2021 report **Assessing the resilience of market-based finance**.
2. **London is ranked as joint largest financial centre globally according to City of London research**.
3. For more details on the Bank's work to develop a new lending tool for non-bank financial institutions, refer to **A journey of 1000 miles begins with a single step: filling gaps in the central bank liquidity toolkit - speech by Andrew Hauser**.
4. Also refer to **Strengthening the resilience of market-based finance**.
5. CCPs already apply minimum haircuts for cleared products.
6. For instance, some insurers hedge their exposure to residential real estate using contracts whose payoff is a function of a house price index ('no-negative-equity guarantee' hedges).
7. This was part of the rationale for encouraging a **revival in securitisation markets**.