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15 November 2023

Dear [redacted]

RE: Discussion Paper - An approach to macroprudential policy for investment funds

The Investment Association (IA) champions the interests of the UK-based investment management industry. We represent over 250 firms, a third of which are headquartered in the EU and operate from 642 offices across Europe.

Our members put €9.9trn to work across the economy, representing 35% of the total €28.4trn of assets managed in Europe. In 2022, IA members managed €2.7 trillion on behalf of European clients, including €1.5 trillion in Irish domiciled funds, and invested €820 billion into EU businesses and projects needing capital, all while providing European clients access to global investment opportunities.

As the investment management sector has grown, along with the broader non-bank sector, to become an increasingly larger part of the overall financial system, we recognise that this has inevitably led to questions around the systemic importance of the sector, and whether there are vulnerabilities arising from its activities that could threaten financial stability. The IA is keen to engage in these discussions as an informed and constructive partner.

Nonetheless, we are concerned that the investment management sector, including the role of investment funds, has not always been well understood by all parts of the central banking community, which has led to the sector being misrepresented. Systemic risk must be understood in terms of events that threaten the stability and functioning of the wider system, and differentiated from events that impact only a single entity and its customers/immediate supplier, or from price volatility which is a normal function of the market.

The IA works closely with associations representing investment managers and the investment funds industry in other countries, including Irish Funds, on international regulatory developments. We are pleased to have liaised closely with Irish Funds on this debate, and support the points made in its response to this discussion paper. Given the important relationship between the UK investment industry and the Irish investment funds industry, we make several points in respect of the subjects raised in the discussion paper, and also provide some additional background on the impact of the September 2022 UK gilt market volatility events, which resulted in difficulties for the Liability Driven Investment (LDI) strategies used by a large number of UK defined benefit pension schemes. The IA would welcome the opportunity to engage with the Central Bank further on these issues.

Investment managers are agents for their investors

Whether they are managing investment funds or investment mandates, investment managers are acting as agents for their investors. Investment funds allow a diverse range of investors, often with different time horizons and views of risk, to access capital markets through a centrally managed investment strategy. In several places, the discussion paper presents funds as autonomous entities in which decisions by managers of investment funds to dispose of assets in stressed market conditions can amplify market volatility.

This is not a description that reflects the reality of fund operation or investor behaviour. Funds consist entirely of the assets of institutional and retail investors, who are making their own investment decisions to access or leave markets, decisions that would likely be similar in terms of strategy and tactics if they were investing (or dis-investing) directly in the underlying market. Competent authorities should therefore take into consideration that what appears to be the collective action of a cohort of funds will, in most cases, reflect the collective action of investors in a given market.

Managers of investment funds will dispose of assets for three reasons:

i) to meet redemption requests from investors in the fund;
ii) to meet non-redemption liquidity requirements of the fund, such as margin calls on derivatives positions; or
iii) as part of the management of the fund's portfolio and investment strategy, eg to rebalance or realign the investment portfolio, to reflect a change in the investment manager's views of the future performance of that asset or because the asset no longer fits with the investment objective and policy of the fund.

Of these, only in scenario iii) does the investment manager have any discretion on whether to dispose of the asset, and even then this may not always be the case, eg the manager may be obliged to trade if the fund is following an index tracking investment strategy or there has been a change in the asset that means it no longer meets the investment objective and policy of the fund, eg it has become ineligible due a corporate action, or it no longer meets criteria for sustainability or creditworthiness. If redemption requests can be met without materially prejudicing the interests of other investors, the investment manager is obliged to meet these through disposing of assets regardless of its view on whether the market conditions are optimal for such a redemption. When disposing of assets for portfolio realignment reasons, managers can and do take market impact into consideration[1].

A liquidity toolkit already exists for funds that ensures that redemptions from the fund reflect the costs of selling assets in the market mitigating against any potential advantage to an investor

[1] For example, John Chatfeild-Roberts of Jupiter Fund Management Plc, outlined that his firm had spent 2 years unwinding its large position in the LF Woodford Equity Income Fund in gradual stages to avoid creating a sudden shock for the fund – see https://citywire.com/investment-trust-insider/news/jupiter-comes-clean-over-1-billion-woodford-sale/a1284752

redeeming their investments ahead of other investors, removing any additional incentive to dis-invest than arises from an investor's judgement of underlying market conditions.

Investment Funds are only one component of a wider financial ecosystem

Investment funds, including open-ended funds, are not autonomous actors in the broader financial system. These are structures that are widely used by different investor groups, both institutional, such as pension schemes and insurers, professionals investing on behalf of individual investors, such as private wealth managers and financial advisers, and by individual investors themselves. How funds are used by these investors is a significant determinant on the market behaviour of funds. For example, fund flows at each quarter end are significantly higher due to rebalancing by discretionary managers of model portfolios, who will make decisions that will simultaneously involve the movements of a large number of investors in and out of the same funds.

Another example is Liability Driven Investment (LDI) funds. LDI is a strategy used by the majority of UK defined benefit ('DB') corporate pension schemes, intended to better align investment outcomes with changes in the value of scheme liabilities, reflecting the UK Pensions Regulator's funding and investment requirements for DB schemes. While pooled funds that wrapped LDI strategies became the focus after the significant yield increases in UK long-term gilts in September 2022, the details and implications of that event are more particular to the investment dynamics of UK DB schemes and the concentrated ownership of the long-dated and index-linked gilt market that they invest in as part of their liability-matching portfolios, rather than the pooled fund vehicles used by some of these schemes.

Our view is that the read-across from this event for investment funds more broadly is very limited – this is a very specialist cohort where the leveraged strategies employed have little in common with the investment strategies and market exposures of the majority of investment funds. In the Annex, we provide a detailed analysis of how the September 2022 gilt market volatility created challenges for LDI strategies, which was originally submitted to the House of Commons Work & Pensions Select Committee in November 2022. This makes clear that it was the specificities of UK DB scheme behaviour that drove the crisis, not the fund vehicles they were investing through.

Microprudential tools for investment funds have macroprudential benefits

The Discussion Paper asserts that the regulatory frameworks for investment funds were developed for investor protection rather than financial stability purposes. This is not entirely correct – the Alternative Investment Funds Directive (AIFMD), while including a significant investor protection component, had financial stability as a key objective. Indeed, financial stability was the primary driver for the AIFMD, which emerged from the reforms proposed after the Global Financial Crisis (GFC) in 2008, and the perceived need to regulate the activities of managers of alternative investment funds, particularly those using high levels of leverage. Similarly, the Money Market Funds (MMF) Regulation was developed mostly from the perspective of mitigating financial stability risks, again this was intended to address the reforms proposed following the GFC. The UCITS Directive is more explicitly investor protection focused, though the framework also has macroprudential benefits.

Each of these frameworks includes microprudential tools that must be used by managers of investment funds. The UCITS Directive imposes strict liquidity management requirements on managers, restricting eligible investments mainly to transferable securities, strict limits for individual investments, concentration limits in the underlying investments and requirements to perform liquidity stress testing. UCITS also restricts leverage by imposing a strict limit on global exposure achieved through derivatives and banning the use of financial leverage through borrowing (a small level of temporary borrowing is permitted only for operational purposes).

The AIFMD, while less prescriptive, requires managers to disclose the maximum leverage that can be employed, along with imposing additional reporting requirements on funds that are highly leveraged, to have detailed risk management frameworks and undertake liquidity stress testing, along with periodic reporting to regulators. Powers are also reserved in the AIFMD for competent authorities to impose leverage limits on individual or groups of AIFs – as the discussion paper notes, the CBI has already imposed leverage limits on domestic real estate funds, and also defacto restricted the leverage that could be employed by LDI funds by requiring these to maintain minimum cash buffers to withstand yield shocks of 300-400bps.

The MMF Regulation, in addition to these tools, imposes strict minimum thresholds of daily and weekly maturing assets required to be held by MMFs, along with detailed stress testing requirements and periodic reporting to regulators. Each of these frameworks provides for the suspension of redemptions, and imposes strict asset segregation requirements, which limit the risk of contagion to other funds and the broader financial system should an individual fund fail.

The IA does not discount the idea of macroprudential tools being developed for investment funds or other parts of the NBFI sector, although will reserve providing any comment on the merits of any such tools until these are proposed and consulted on. Any macroprudential tools developed for investment funds will need to consider the heterogeneity of funds – tools developed for the banking sector are unlikely to be suitable for most investment funds. For example, we do not regard mandatory liquidity buffers as being appropriate for the majority of funds – we agree with the CBI that these may increase incentives for investors to redeem during the early times of financial stress. But the macroprudential benefits of tools developed for microprudential or investor protection purposes should not be discounted.

A comprehensive toolkit and transparency on underlying holders is critical for robust liquidity management of open-ended investment funds

The IA has long advocated for a broad, comprehensive and universally available toolkit that allows managers of investment funds to manage liquidity risks in a way that protects investors and thereby limits the transmission of any risks to the wider financial system. We are therefore encouraged by the introduction of a broad range of tools in the AIFMD and UCITS Directive in the recently concluded AIFMD Level 1 reforms. It is important that the utilisation of these tools remains at the discretion of the manager, which is most familiar with the characteristics of the fund, and the activation of liquidity management tools by competent authorities is reserved only for the most exceptional circumstances.

An important component of liquidity risk management is a knowledge and understanding of the underlying investor base. A challenge increasingly faced by managers of open-ended funds, particularly those with a large distribution, is that the broader funds ecosystem is increasingly intermediated. Investment fund registers frequently consist of intermediary holders such as nominee companies, which hold the fund shares on behalf of a much larger number of end investors. Managers of the funds have in most cases either very limited or no ability to look through to the underlying investor base, limiting their ability to understand the characteristics of the underlying investors and predict investor behaviour, in particular potential liquidity demands.

Such an understanding is important to make informed judgements on likely liquidity demands. For example, if it is known that a significant portion of a nominee holding belongs beneficially to a single investor, or a significant proportion of the holding consists of accounts being managed under the same model portfolio service, this presents the investment manager with a higher risk that they may face a large redemption than a nominee holding that is spread amongst a much larger and more diverse base of underlying investors.

In practice, investment managers have struggled to get information on underlying investors from intermediary shareholders. While the investment industry continues to constructively work with intermediaries to find practical solutions, competent authorities should continue to work with the investment management industry and fund distributors to find a solution here.

Leverage measures for funds can overstate the true economic exposure

Measuring leverage presents particular challenges for investment funds. Past studies have indicated that overall, the use of leverage across investment funds is low, particularly in comparison to other parts of the financial sector such as banking[2]. However, derivatives are often employed by investment funds for efficient portfolio management purposes, such as for hedging risks in the portfolio, and gross leverage measures often result in the economic leverage of such funds being overstated. For this reason, more reliance should be placed on net leverage measures, such as the Commitment Method used in the AIFMD[3], when considering synthetic leverage arising in funds from the use of derivatives and to identify those funds which are the most highly leveraged.

Information reported by investment managers and other market participants should be shared between authorities

There are a number of reporting regimes through which information on transactions and investment fund activities are reported to authorities, such as AIFMD Annex IV reporting, MiFID and EMIR. The industry recognises the importance of competent authorities having appropriate data, but reporting requires significant systems development and operational resources to be committed. Competent authorities should seek to ensure that data reported through existing frameworks is shared through cooperation agreements as much as possible to avoid, or at least minimise, the imposition of further reporting burdens on the investment industry. The IA strongly endorses the mandatory use of Legal Entity Identifiers (LEIs) and Unique Transaction Identifiers (UTIs) across all reporting frameworks in all jurisdictions to ensure relevant transactions can be more readily identified by competent authorities.

More focus is needed on improving the functioning and efficiency of capital markets
There has been a significant focus on whether there are vulnerabilities in investment funds of sufficient magnitude so as to threaten financial stability. In our view, within this debate, there has been insufficient consideration given to how the capital markets, in which investment funds transact, are operating.

There are significant challenges in the functioning of certain capital market, particularly fixed income and short-term funding markets, which need to be addressed. In these markets, dealers have significantly reduced inventories, with their ability to make markets highly constrained by post-GFC capital reforms. As such, we believe it is important to consider effective measures to enhance liquidity provision, particularly in times of market stress. While investment funds have tools to

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[2] See for example, page 87 of the Report on the Operation of the AIFMD, prepared by KPMG for the European Commission, states that "absolute terms, the survey results indicate that excessive leverage is rare in AIFs.
[3] Set out in Article 8 of Commission Delegated Regulation (EU) 231/2013 (AIFMD Level 2 Regulation). The Commitment Method allows netting and hedging arrangements to be applied to certain derivatives exposures to reduce the overall exposure calculation.

manage liquidity crunches, reforms to investment funds alone will not address broader market dynamics that affect liquidity. While we note the FSB's work in this area, for example through its ongoing work on liquidity in core bond markets, we nevertheless believe a greater focus is needed on improving the functioning, operation, efficiency and effectiveness of capital markets.

The role of post-GFC margining requirements should also be considered. While these reforms have mitigated counterparty risks, these have increased liquidity pressures on market participants, including (but not only) investment funds in stressed market conditions, as outlined by the Bank for International Settlements, FSB, IOSCO and others[4]. While we recognise the counterparty protection these margining requirements have brought, we recommend the authorities continue to examine margining requirements and investigate whether practices can be amended to reduce pro-cyclical liquidity pressures arising from margining requirements while preserving the counterparty risk protection that margining provides.

The IA is keen to engage as a knowledgeable and constructive partner on financial stability and macroprudential policies for the NBFI sector. We would welcome further engagement with the CBI, along with other authorities, on this very important subject.

Yours sincerely

[redacted]

Peter Capper
Senior Adviser, International Fund Regulation

[4] For example, see BIS/CPMI/IOSCO joint paper on Review of Margining Practices, September 2022

THE INVESTMENT ASSOCIATION

Annex

Written evidence submitted by The Investment Association to the Work & Pensions Select Committee Inquiry on 'Defined benefit pensions with liability driven investments' (November 2022)

Summary

- The Investment Association (IA) represents the asset management industry operating in the UK. Our members, acting as agents for their clients, manage the investments of UK defined benefit (DB) and defined contribution (DC) schemes, as well as other retail savers and institutional investors. They are responsible for the management of around £10 trillion of assets in the UK on behalf of domestic and overseas investors. For DB pension schemes, working closely with scheme trustees and with investment consultants, our members collectively manage Liability Driven Investment (LDI) mandates that hedge £1.6 trillion of UK pension liabilities.

- We are responding to this call for evidence in order to aid the Committee in its inquiry and clarify some of the facts about what is undoubtedly a complex area. This submission sets out the broader context for the development of LDI; our interpretation of the significance of recent events; and a number of preliminary lessons learned.

- The events of late September early October 2022 came against the backdrop of rapidly rising interest rates in the context of a global inflation shock. Many DB pension schemes were already having to sell assets earlier in the year to raise collateral to keep their LDI hedges in place. This was a process that was both expected in such an environment and intrinsic to the nature of the hedging strategies being used.

- The impact of market events following the 23 September fiscal event was, however, completely unprecedented. An extraordinary spike in gilt yields triggered a round of collateral calls in respect of schemes' liability hedging positions. Where increased collateral was unavailable, this forced some schemes to reduce hedging to manage leverage, by selling hedging assets. A negative spiral of asset sales and falling prices ensued, which led to intervention from the Bank of England.

- In presenting our preliminary analysis of recent events, we would make three fundamental points. First, this was not a solvency crisis for the DB pensions industry, but a liquidity challenge. While the impact across schemes is heterogeneous, in aggregate the net effect on scheme funding positions in this environment of rising long-term interest rates has been positive.

- Second, LDI as an approach to risk management should be seen as a historically successful and highly supportive response to a specific and complex set of funding and accounting challenges that arose in the UK private sector DB eco-system. In that respect, our view is that the principles behind the approach of investing to meet future liabilities are sound and will remain relevant.

- Third, while there were acute challenges in certain parts of the DB pensions system, depending on the operational and investment configuration of the LDI strategy, other parts of the system reported less difficulty.

- Within the context of the 23 September fiscal event, which had unprecedented impacts, there is always a need to review how the market operates – it is prudent to do so after events that could not have been foreseen have occurred. Our preliminary analysis suggests that there will be a range of learnings for regulators, pension schemes, consultants and investment managers alike. These learnings are likely to focus on the following inter-connected areas, but will require further examination before we reach a definitive conclusion:

  - **Governance** in the context of how well the lines of communication, contingency planning (including stress testing) and delegation of decision-making operate between the main players: the pension scheme trustees who make certain investment decisions; the investment consultants who advise them; and the investment managers who then implement these instructions.

  - **Collateral eligibility**, including how quickly and efficiently the collateralisation process for derivatives and repos operates.

  - **Liquidity management by pension schemes** to ensure they are able to meet collateral calls to cover extreme interest rate moves.

  - **Leverage** and the appropriateness of different levels of leverage, especially given both what is likely to be a more conservative approach to stress-testing in the light of the post-2022 data set, and the fact that improvement in the aggregate level of scheme funding means that many schemes will have less need for leverage.

- Taken together, it is both likely and desirable that a recalibration (or at the very least a re-testing of assumptions) in these areas will help to ensure that LDI strategies and the governance processes supporting them can become more agile, robust and resilient to future stress events.

Liability Driven Investment (LDI): the broader context

1. The bursting of the dot-com bubble in 2000 had a significant impact on DB schemes, which at that point were heavily exposed to equities (see Figure 4 below), leading to a significant increase in deficits.[1] In the years that followed, these deficits began to be viewed as a form of debt to pension scheme members, with accounting regulations in 2002 requiring surpluses and deficits in pension schemes to be reported on corporate sponsors' balance sheets. DB pension scheme funding therefore attracted greater focus from corporate plan sponsors.

2. This was accompanied by the creation of the modern UK DB funding regime in 2004, which established a framework for improving funding levels, requiring that all schemes must meet a statutory funding objective, determined using a prudently chosen approach. Schemes were also required to undertake a triennial valuation to establish the level of their assets and liabilities.

3. The collective impact of these changes was to place a greater emphasis on funding and closing deficits, in turn leading to a view of DB funding through the lens of risk management. LDI arose as an investment solution in this environment, drawing on techniques and instruments that are well-established in the context of the hedging of inflation and interest rate risk.

What is LDI?

4. DB pension scheme liabilities – the pensions owed to members – are sensitive to three main factors:
5.

Figure 1: Sensitivity of DB liabilities to economic and demographic factors

	Change in variable	**Change in DB liabilities**
Future Life Expectancy	+ (-)	+ (-)
Future Inflation	+ (-)	+ (-)
Long-Dated Gilt Yields	+ (-)	- (+)

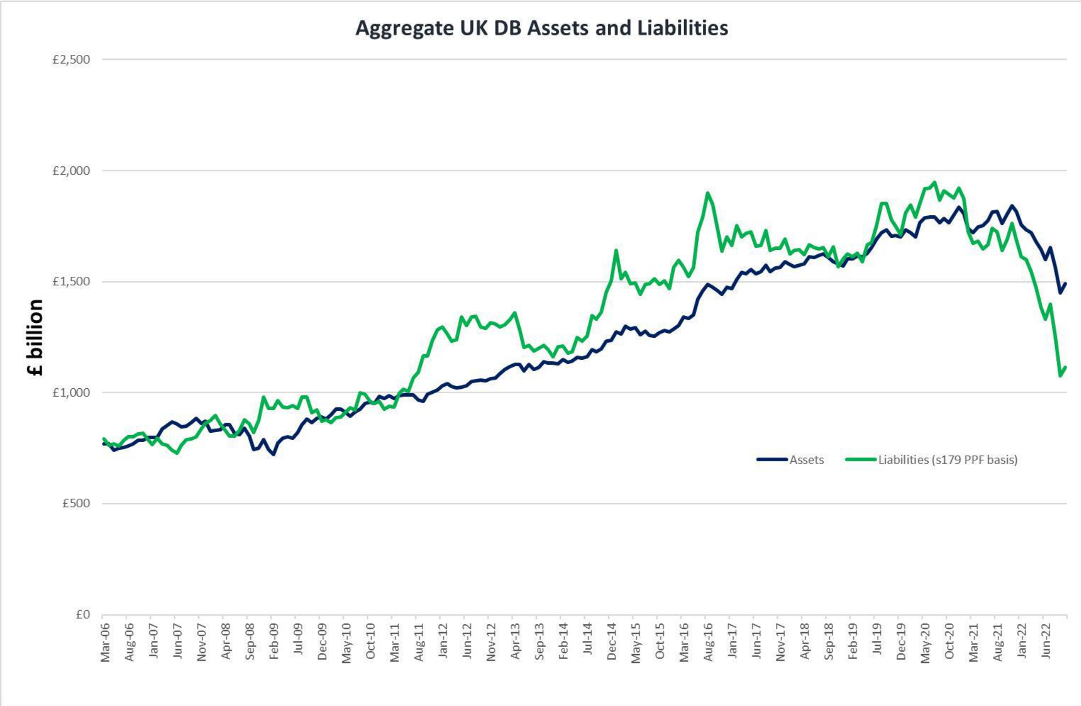
It is this sensitivity of liabilities to inflation and interest rates that is a key driver of the use of LDI. The goals of a LDI strategy are two-fold:

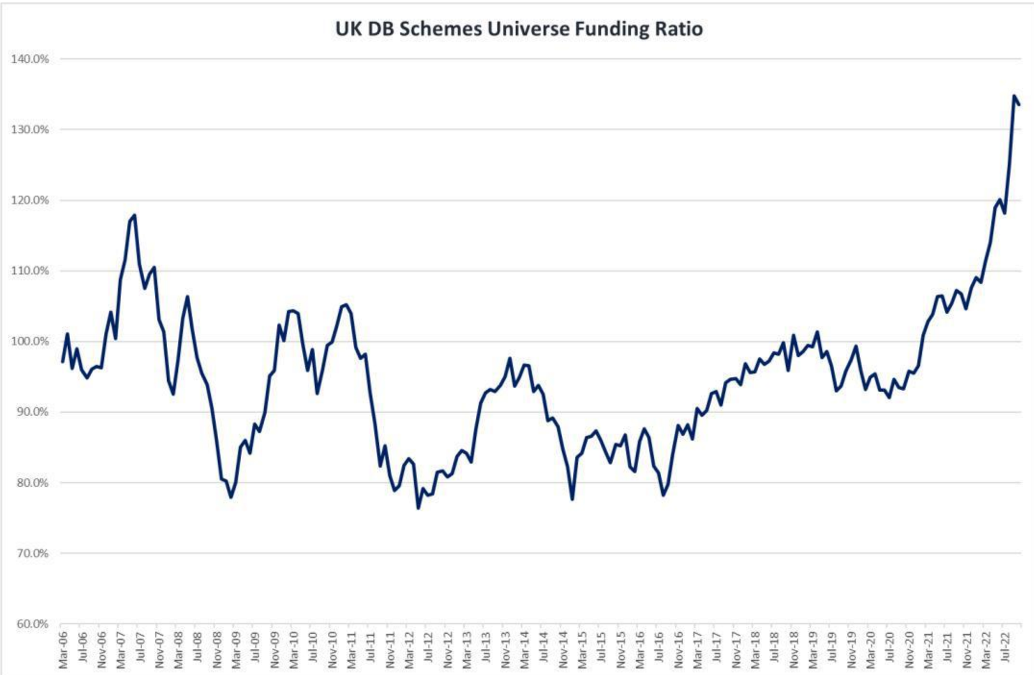
- Invest in assets that have interest rate and inflation sensitivities which broadly match those of the scheme's liabilities; and

- Therefore, stabilise the funding ratio[2] by hedging against movements in long-term interest rates and inflation rates

5. The reason for doing this is that it reduces the volatility in scheme funding caused by movements in interest rates and inflation between the triennial scheme valuation cycles. The benefit to doing this is that it brings more predictability in funding costs for the scheme sponsor, as well as increased security for members' benefits. **LDI is risk-management.** These concepts can be explained by considering the charts in Figure 2:

Figure 2: Managing risk using LDI





Source: PPF 7800 Index, November 2022

6. The two charts in figure 2 show how volatile liabilities and hence funding ratios can be as a result of changes in inflation, long-term interest rates and longevity. If the risks caused by movements in these variables are not managed, it is entirely possible that, on the downside, funding levels can deteriorate even if the sponsor has put more money into the scheme and assets have performed well.

7. This can be seen in the first panel above where the general trend in the asset data is one of long-term growth, with significant periods of movement in the liabilities that are sufficient to swamp the growth

in assets, resulting in a deterioration in the funding ratio (second panel). This is detrimental both to the financial health of the sponsor and ultimately poses a risk to members' benefits. **LDI helps manage these risks by creating a more stable funding ratio.**

8. Underfunded DB schemes will normally have a third investment goal: in order to grow their way out of a deficit, they will invest in growth-seeking assets as part of their overall portfolio. This is achieved through investing in assets such as equities, real estate, private assets etc.

9. LDI strategies have worked well for clients for 20 years, bringing stability to schemes' funding ratios. A recent estimate[3] put the benefits of LDI for FTSE 100 schemes at £100bn-£200bn over the period 2016-21 – that is, the amount by which scheme funding would have been lower in the absence of LDI. This is some 20-40% of the value of these companies' schemes. In an era when interest rates have fallen to historic lows, increasing the present value of DB liabilities, LDI has protected schemes from worse funding outcomes as their matching assets have increased in value as their liabilities have risen.

2022: a major change in the macroeconomic environment

10. LDI strategies deliver positive returns in an environment of falling interest rates and post losses when rates rise. This is a design feature of these strategies. The other side of rising rates is falling liabilities: funding ratios remain stable. In 2022, Central Banks around the world have raised short term interest rates to bring inflation under control. This has had the effect of raising long-term interest rates as well, which are relevant for the calculation of DB liabilities. Figure 3 shows how long-dated yields were rising steadily over the spring and summer.

Figure 3: 20-year gilt yield in 2022

Source: Bank of England, November 2022

11. A particular challenge for DB schemes using LDI strategies in this environment has been that the synthetic assets that are used (which are primarily gilt repos but also include gilt total return swaps, interest rate and inflation swaps) to gain additional gilt exposure and other exposure to interest rates have required them to post collateral as yields have risen. The result of this was schemes having to sell assets over the spring and summer. This process is described in more detail below. By the time of the

Government's mini-Budget on 23 September, schemes had already sold a portion of their most liquid assets in order to maintain their LDI hedges.

The impact on DB schemes of the rise in gilt yields in late September and early October

12. The primary impact on DB schemes of a rise in gilt yields is through a change in the value of their liabilities. This arises through the discount rates used by DB schemes to calculate the present value of their future cashflow obligations typically being linked to long-term gilt yields. All else equal, a rise in gilt yields reduces the value of a scheme's liabilities and vice versa.

13. However, for schemes' following LDI strategies, the whole point is to hedge these movements. Depending on the degree to which this is done[4] the cumulative impact of the higher gilt yields seen over the course of 2022 will be neutral to positive in terms of funding levels. That is, for schemes that have employed a hedge ratio of less than 100%, the rise in yields will have improved their funding ratios. This is seen in the data: in aggregate, the funding level of UK DB schemes, measured on a PPF-benefits basis[5], has increased from 125.1% at the end of August to 133.6% at the end of October[6] (see Figure 2, bottom panel). While data is not available on the actual funding measures that schemes target (technical provisions or full-buy out), similar improvements would be expected on these measures.

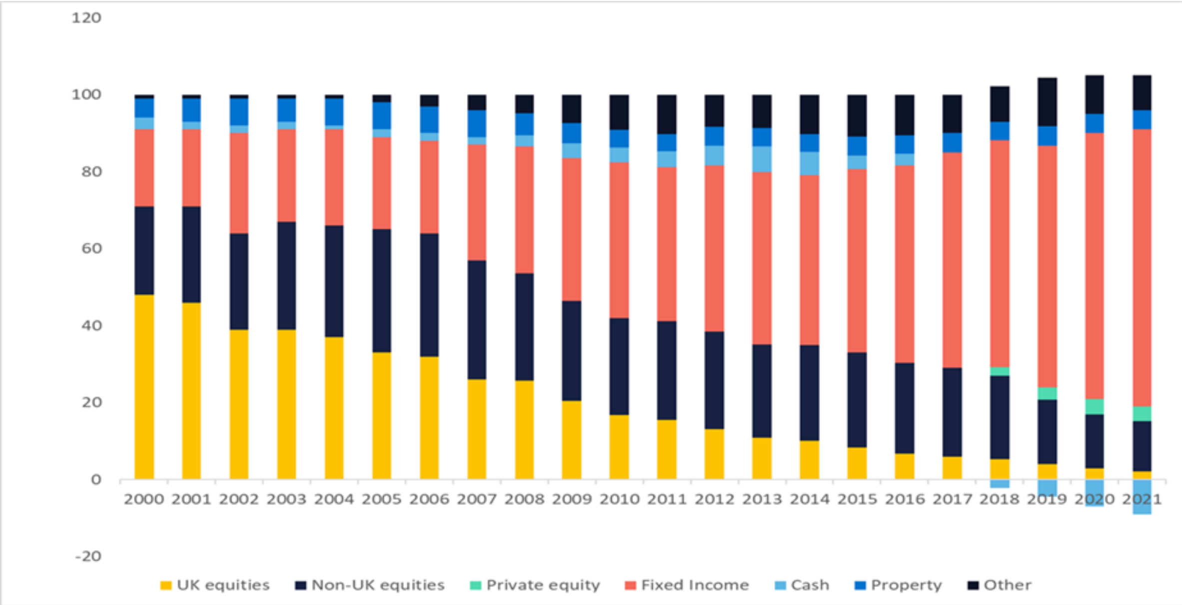
14. This improvement in funding has been observed since the beginning of the year, but the rate of improvement has increased as gilt yields have risen faster. The 8.5 percentage point increase in the funding ratio between August and October represents a significant increase in funding levels over a short period. While recent weeks have been challenging for the DB pensions sector, what this data does show is that the gilt market turbulence was absolutely not a solvency crisis for pension schemes.

15. However, DB schemes have faced a liquidity challenge. LDI strategies involve the use of derivatives and repos to help schemes better match their liabilities. This involves using physical gilts, plus swaps and gilt repos to hedge inflation and interest rate risks. The benefits of using leverage to gain exposure to gilts is that it leaves schemes with more capital to be invested in return-seeking assets, in order to help address funding deficits.

16. When derivative contracts are created, they are typically worth exactly the same amount to both parties in the transaction. However, over time, as changes in the underlying variable (such as inflation or interest rates) to which the contract is linked occur, the contract becomes worth more to one party and this requires the regular exchange of collateral to protect against counterparty risk. Typically, collateral is posted by whichever party experiences a fall in the value of the contract. Standard market practice is to minimise risk by posting cash and/or gilts as collateral.

17. In order to raise cash to post as collateral, DB schemes had to sell some of their assets, including credit, equities, and even less liquid assets such as private credit, private equity and property (see Figure 4).

Figure 4: UK DB Asset Allocation



Source: UBS Pension Fund Indicators, PPF Purple Book

18. LDI strategies require the manager to operate a collateral pool, which is where cash is drawn from in order to meet collateral calls. In raising cash for the collateral pool, DB schemes work with investment consultants, and often, their LDI managers to create a pre-defined 'waterfall' of assets that can be sold, with the most liquid assets being sold first. Plans are made for collateral to be raised in line with certain triggers, e.g., changes in the value of gilt yields and inflation that affect the value of schemes' derivative and repo exposures or pre-defined levels of leverage or cash amounts in the underlying collateral pools. The idea is that schemes have a pre-defined plan of where to raise cash from in the event of anticipated market moves that will require more collateral. It is important to note that such recapitalisation takes some time – typically more than a week to fully complete.

19. This process was happening routinely over the Spring and Summer of 2022, but came under severe pressure as a result of the unprecedented price movements in long-dated gilts in September/October. The proximate cause was the spike in long-dated gilt yields following the 23 September 'mini-Budget' in which the government announced its near term fiscal plans. This fall in the value of gilts saw schemes asked to post more collateral against the swaps and gilt repos they held as part of leveraged LDI strategies.

20. The problem arose because the size of the yield increase and the speed with which it occurred exhausted existing collateral pools and meant DB schemes had to look beyond their pre-defined asset waterfalls to source liquidity. Those DB schemes who were not able to or chose not to sell assets to provide collateral, instead reduced their LDI hedging assets, by selling long-dated gilts. This pushed down gilt prices further, triggering more collateral calls, further gilt sales and the creation of a negative market spiral.

21. Large redemptions were seen in other asset classes as DB schemes had to sell additional assets in their portfolios to raise cash. In the context of volatile markets across a whole range of asset classes, the need to raise cash at short notice was a challenge for some DB schemes.

The impact on pension savers, whether in DB or defined contribution pension arrangements

22. In DB schemes, the members do not bear any investment risk. There was therefore no direct impact of market volatility on DB members. In terms of aggregate funding levels, as demonstrated by the data in Figure 2, scheme funding has improved as rates have risen over 2022. For many DB members, this will have resulted in an increase in the security of their benefits due to the improved funding in their schemes. However, the impact across schemes is heterogeneous and not all of them will have seen an improvement in their funding levels: some will have seen a deterioration as a result of liquidating assets to meet collateral calls and/or a reduction in their hedging levels. In these cases, the sponsor may be required to contribute additional cash at the next valuation cycle.

23. Notwithstanding this, media reporting of the events may have triggered some concern amongst some DB members and we expect that trustees and their consultants may have had to deal with an increased volume of queries from their membership regarding the impact on their pensions.

24. DC pension schemes do not use LDI strategies, since they do not contain fixed promises to pay benefits, and so were not affected in the same way as DB schemes. Instead, they will largely have been affected by market volatility more generally, though this is normal for DC schemes over the course of decades-long investment horizons.

Given its responsibility for regulating workplace pensions, whether the Pensions Regulator has taken the right approach to regulating the use of LDI and had the right monitoring arrangements

25. Since The Pensions Regulator (TPR) is responsible for regulating pension schemes rather than investment consultants or investment managers, we are unable to comment on whether the regulator had the right monitoring arrangements in place regarding specific DB schemes' use of LDI strategies. This is a question best answered by the pension schemes whose oversight TPR is responsible for.

26. However, on a broader point we note the role of TPR in signalling to the market that LDI has been an appropriate investment strategy for many schemes to use over the last 20 years. While it is not appropriate or expected that the regulator would endorse any particular investment strategy, TPR's willingness to discuss the role of LDI strategies in its DB Code of Practice[7] and associated trustee guidance[8] has helped to signal to the market that LDI is an orthodox and established approach that trustees can consider as part of their investment toolkit. In its most recent statement[9], given during the recent market turbulence, TPR again acknowledged the positive role played by LDI strategies in helping trustees manage funding risks.

27. As we set out in our opening comments, LDI has worked well within the context of the current DB scheme funding framework, and we believe that TPR has acted sensibly in highlighting it as a tool for trustees to consider.

Whether DB schemes had adequate governance arrangements in place. For example, did trustees sufficiently understand the risks involved?

28. The DB investment market is a sophisticated one. The starting point is that trustees do not make any investment decisions without appropriate support. Indeed, they are required, under the law, to seek expert advice in relation to investment decisions[10]. This has created a formal role in the UK pensions market for investment consultants, who advise trustees on matters of investment strategy, asset allocation and manager selection.

29. The role of consultants is critical in relation to trustees' decisions to implement LDI strategies in the first place, the degree of hedging to put in place, the amount of leverage to employ and the selection of a manager to implement the strategy. Consultants advise trustees both on the merits of LDI strategies and the risks inherent within them[11]. By the time they come to invest in any investment strategy, trustees should be fully aware of the benefits and risks of doing so.

30. In relation to the specific issues around collateral calls in relation to schemes' derivative and repo positions that led to the Bank of England's intervention, these were known risks. As we have described earlier in our response, many schemes did have in place pre-defined plans to deal with collateral calls. The problem was that the unprecedented speed of yield increases meant that the collateral buffers built up were exhausted much more quickly than anticipated under these plans, forcing schemes to turn at short notice to other parts of their portfolios to free up collateral.

31. Generally speaking, scheme processes have worked: with the intervention of the Bank creating space, schemes have worked successfully with their consultants and managers to recapitalise their collateral pools to appropriate levels (see below). However, where we have seen some stresses has been in the speed of response by some pension schemes: a model where trustees meet and then seek the advice of consultants before taking a decision is not always well suited to the fast-paced nature of a turbulent market.

32. In this specific instance, decisions around whether to maintain hedging ratios and deciding which assets to sell to raise collateral once the initial pools had been exhausted, were needed more quickly than they were sometimes forthcoming. Anecdotally, those schemes where greater discretion on these matters was granted to the LDI manager were able to respond more quickly to changes in market conditions. As a result, we expect that more schemes will seek to delegate more of these decisions to their LDI managers in future.

Whether LDI is still essentially 'fit for purpose' for use by DB schemes. Are changes needed?
Effective risk management must remain a central priority

33. The concept of LDI has its genesis in a DB funding regime that has evolved to focus on the funding ratio as the main measure of the financial health of the scheme, and crucially, the outcome that trustees must target. Since the funding ratio is based upon estimating the present value of future liabilities, this means that the sensitivity of those liabilities to inflation and interest rates is inherent in the funding regime.

34. Effective risk management means that inflation and interest rate risks must be managed. The consequence of not doing this would be to expose the scheme to volatility in funding, which on the downside, could make members' benefits less secure, increase the costs to the sponsor of funding the scheme, and increase the risk to the PPF. LDI is designed to manage exactly these risks, resulting in a more stable funding ratio, increased predictability over funding costs for sponsors and increased security of members benefits. Accordingly, we continue to believe that LDI as a strategy will play an important role in DB investment and funding for many years to come.

35. There are, however, four emerging areas where it is likely that lessons will emerge:

Governance

- From an operational perspective, a number of themes may need to be considered that impact on the ability of the investment manager most effectively to react to extraordinary market developments.

- Initial analysis suggests that one particular theme is the structure of decision-making across the whole of the pension scheme portfolio, and not just the LDI component. This might be described as **asset adjacency/degree of delegation to LDI manager**. Experience from the recent events suggests that where the LDI manager had access, for collateral purposes, to a greater portion of the pension scheme's assets beyond the immediate LDI mandate, they were able to respond more quickly on behalf of clients to changing market conditions, by selling assets more quickly to raise capital, therefore maintaining hedging positions. Further, the greater the delegation and availability of collateral assets to the LDI manager, the more flexible (while also ensuring sufficiency) the level of collateral in the LDI portfolio can be. This is because the collateral waterfall is more robust when supplemented with access to other assets. The question for pension schemes to consider will be the extent to which they wish to delegate to their LDI manager decisions over which non-LDI assets to sell in the event of collateral calls.

- A second theme concerns the process for **testing the resilience of LDI strategies to future yield shocks**. Given the reliance of LDI strategies on derivatives and repos and the ensuing need for collateral buffers, LDI managers already test the resilience of these strategies to increases in gilt yields and set collateral buffers accordingly. However, the size of the recent yield increases over the time period observed – 130bps over the course of three working days[12] – was, in the words of Sir John Cunliffe, "outside of historical experience[13]." As such, this magnitude of shock was not included within existing LDI stress-tests, a point acknowledged by the Bank[14]. Now that this event forms part of the dataset, stress tests will in future need to be robust to a yield shock of this magnitude. Indeed, the recapitalisation process that has been occurring in recent weeks has already taken this into account, with pension schemes now topping up collateral pools to a greater degree of resilience to further gilt yield rises[15]. However, there are limits to how far this process can go: calibrating strategies to extreme and highly improbable events reduces their effectiveness. It is therefore important that risk measures are proportionate.

Collateral eligibility

- One of the factors that contributed to the market dynamics in this episode was the negative price spiral created by pension schemes selling assets e.g. corporate bonds to raise cash to post as collateral against their repo and derivative exposures. A process whereby assets could be posted as collateral rather than cash would have eased some of these pressures. In that regard, the Bank's Temporary Expanded Collateral Repo Facility (TECRF), which ran for a month from 10 October, provided a helpful intervention. Under the TECRF, the Bank temporarily expanded the range of collateral accepted in its regular lending facilities to include non-financial corporate bonds with credit ratings of Baa3/BBB- or above. The purpose of this facility was to enable banks to ease liquidity pressures facing their pension scheme counterparties where the latter were attempting to sell lower quality corporate bonds to meet collateral calls. By expanding its own collateral arrangements, the Bank's action permitted banking counterparties to do the same with their pension fund clients when it came to meeting collateral calls.

Liquidity management by pension schemes

- Where pension schemes had sufficient liquid assets to meet collateral calls, hedges were maintained over the period. However, through the spring and summer of 2022, a combination of asset price falls and sales of liquid assets to meet earlier collateral calls, meant some pension schemes had become overweight their target illiquid asset portfolio allocations by the time of the mini-Budget. When faced with higher-than-expected collateral calls following the post-September 23 yield spike, they had insufficient liquid assets with which to meet those calls. This meant they had to unwind hedges, which then amplified the problem. Therefore, ensuring the scheme has access to sufficient liquidity to cover an extreme rate move is key to preventing reoccurrence.

The role of leverage

36. DB schemes' use of leverage is a capital-efficient way of gaining exposure to synthetic hedging instruments (whether through derivatives or borrowing), while allowing for investment of scheme money in growth-seeking assets. The purpose of this is to allow schemes to grow their way out of deficits while simultaneously investing to match their liabilities. It is not, as has been suggested in some commentary, a form of 'reckless risk-taking'

37. However, leverage carries risks in falling markets. Notably, gilt repos and swaps were heavily affected by falling gilt prices, with the schemes having to post more collateral to cover both the fall in the value of the gilts they had repo-ed out and the fall in the value of their swap exposures. Adjusting the amount of leverage used in future would reduce some of the risks faced by schemes in relation to collateralisation and liquidity.

38. Indeed, this has already happened in response to the market conditions seen in September/October, with leverage in the system having been reduced as a result of recapitalisation of collateral pools and individual scheme decisions to reduce hedging levels. Given the aggregate picture of improved funding, schemes in general will have less need to use leverage and so, at an aggregate level, our expectation is that leverage will remain lower than in the past.

39. However, some leverage will remain. Furthermore, reducing it is not costless: by investing exclusively or to a greater extent in physical matching assets, there is less money to invest in growth assets. As a result, sponsors will need to pay more into the scheme in order to allow trustees to continue to invest in growth-seeking assets in line with the scheme's investment strategy. This of course has consequences for the sponsor in terms of diverting money that might have been used in its business.

40. Ultimately, the use of leverage in LDI strategies has been a response to a DB funding regime that continues to place a major emphasis on the value of the employer covenant[16] at the expense of letting the system be less well funded than life insurers, who have similar liability exposures to DB pension schemes. Eliminating leverage entirely implies a greater funding cost for sponsors. This is a policy choice whose costs and benefits need to be debated appropriately, taking into account the impact on corporate sponsors, their various stakeholders, and DB scheme members.

Does the experience suggest other policy or governance changes are needed, for example to DB funding rules?

41. It is not obvious to us that this episode means the entire DB funding and investment framework needs review. However, our previous answer with respect to the need to re-consider the level of leverage used does connect to the funding point. As we have made clear earlier in our response, while eliminating leverage from the system is relatively straightforward, this is not a costless decision, given the increased funding costs that would arise for some sponsors. There are likely to be trade-offs that will require careful consideration by schemes and their advisers.