



LDI in the Spotlight

March 2023

The recent sterling market turmoil and its repercussions for UK Defined Benefit (DB) Pension Schemes will inevitably result in the spotlight being turned on the oversight and risk management of the £1.5tn DB pension industry in the UK.

This short note seeks to explain the mechanics of the issues and highlight the likely areas of dispute which will give rise to forensic analysis litigation.

The value of UK DB pension fund liabilities is calculated by discounting the pension obligations due to its members. This results in sensitivities to the discounting methodology, in addition to inflation, as pensions are often inflation linked. Second order effects such as the number of members in the scheme and actuarial calculations of longevity also impact.

A DB pension fund would typically invest in a combination of growth assets (usually equities) for return generation and fixed income instruments, such as UK gilts or asset-backed securities, to maturity match the liabilities.

A scheme with sufficient assets to meet its future obligations is referred to as **fully funded**. Conversely, if there are insufficient assets to meet the fund's liabilities, the scheme is referred to as **unfunded** or in **deficit**.

In the late 1990s, underperforming equity markets resulted in many schemes struggling with large pension deficits, in some cases comparable to the market capitalisation of the company itself.

Changes to accounting standards FRS17 and IAS19 around the same time forced the recognition of these volatile pension deficits on corporate balance sheets.

The Pensions Act 2004 created the Pensions Regulator and the Pension Protection Fund (PPF). In an attempt to address the problem of volatile pension valuations, a regulatory defined methodology for discounting liabilities was introduced, calculating deficits using gilt yields rather than the expected rates of return of equities.

Accordingly, investing in assets that matched the interest rate sensitivity of pension fund liabilities reduced the volatility of the funding deficit. Furthermore, reducing deficit volatility on a company balance sheet allowed the implementation of a recovery plan, which over time would take schemes to a fully funded status.

This implied incentivisation to buy long-dated gilt assets was the birth of Liability Driven Investment (LDI).

As schemes increasingly used LDI as a mechanism to reduce the volatility of pension fund deficits, there was a dramatic shift in asset allocation. In 2006, approximately two thirds of pension fund assets were equities, with less than one third held in bonds. By the end of 2021, however, this had shifted to approximately three quarters held in bonds according to the PPF.¹

The PPF calculated that more than 80% of schemes were in deficit in 2010. The situation improved over the next decade, with 60% in deficit by the end of 2020 and by the end of Q3 2022, 85% of schemes were fully funded or in surplus. The LDI strategies would appear to have been largely successful, but the inherent liquidity risk in the strategies had either been underestimated or ignored completely.²

In September 2022, gilt yields rose dramatically in response to monetary policy tightening by the Bank of England (BOE). This caused a fall in the value of DB pension liabilities, as it also does to the value of the fund's gilt assets. However as most unfunded pension schemes remained under-hedged, the rise in long-dated yields improved their funding positions. In March 2021 the PPF estimated that a

¹ [The Purple Book 2022 \(ppf.co.uk\)](#)

² [The Purple Book 2022 \(ppf.co.uk\)](#)

10-basis point rise in both nominal and real gilt yields would improve the funding positions of pension schemes by £15.3bn.

LDI frequently employs derivative strategies as alternatives to buying gilts. These strategies, such as receiving fixed on interest rate swaps, give unfunded pension schemes the ability to match the interest rate sensitivities of their liabilities without the need to purchase gilts. It also allows the use of leverage where more derivative assets can be deployed than are needed to hedge the net interest rate sensitivities. In 2019 the PPF found that the notional amount of leverage among the top 600 pension schemes was almost £500billion.³ For a fully hedged fund, gilt holdings hedge the liabilities and are held to maturity, thus immune to daily fluctuations in their value. Derivatives, however, are collateralised and require daily posting of collateral as variation margin (**VM**) equivalent to changes in their value. Similarly, leverage achieved using gilt repos, will give rise to cash calls or deleveraging as gilt prices fall.

Rising interest rates over the course of 2022 had required pension funds to post VM collateral either bilaterally to their derivative counterparties in accordance with CSAs, or if the trades were cleared, to a CCP. VM at clearing houses must be posted as cash; bilateral trades may allow gilt collateral; however, banks have increasingly sought to exclude gilt collateral due to adverse leverage ratio treatment.

To meet collateral calls, pension funds would have had immediate access to cash via liquidity buffers or via bank repo desks in exchange for gilts. In 2015, the PPF estimated a 1% rise in rates would drive collateral calls measured in the hundreds of billions. The steady 1% rise in 30-year gilt yields observed between January and July 2022 allowed collateral to be posted and cash buffers replenished in an orderly manner. In contrast, the unprecedented increase of 1.5% in a 2-week period in September 2022, with a near 1% rise in just two days, immediately drained liquidity buffers with subsequent collateral calls resulting in a “dash for cash” that bordered on panic.

Access to cash via the repo market is dependent on market access being freely available and had previously been identified as a systemic weakness in how the gilt repo market would function in stressed markets.

The BOE’s emergency implementation of a Temporary Expanded Collateral Repo Facility (**TECRF**) on 10 October 2022 broadened the acceptable assets eligible as collateral in its repo operations, hence allowed banks to accept a broader range of collateral from pension funds and limit the scale of assets being sold by schemes looking to urgently raise cash.

Asset sales to raise cash to satisfy collateral calls focussed on liquid assets such as equities and gilts before resorting to the fire sale of illiquid assets. It was the selling of gilts that resulted in the feedback or “doom loop”, where gilt sales pushed yields higher, driving further collateral calls. Ending the vicious cycle was the reason for the BOE’s £65bn emergency bond-buying programme thereby capping yields.

The sudden market moves threatened a failure to meet collateral calls and raised counterparty credit concerns for investment managers and banks. This led to a reduction in credit supplied to pension schemes, either by cash facilities or via repo transactions, further exacerbating the situation and requiring more asset sales.

The inability of pension schemes to access timely and sufficient liquidity to make collateral calls is likely to have caused the investment manager to act proactively to manage its counterparty risk. At this point it remains unclear if investment managers closed out pension scheme positions as a result of a failure to pay, or if there had been a breach of bilaterally agreed risk triggers. However, it has been widely reported that some schemes did have derivative positions terminated.

Many pension schemes, especially those with a lack of derivative expertise, or unaccustomed to this level of volatility, would have agreed documentation that allowed investment managers the autonomy to close positions and liquidate collateral in the event of a default or breach of risk triggers.

It is this documentation and how the investment manager performed its duty in its role, that is likely to be the initial focus of investigation and potential litigation. Valuation disputes surrounding the closeouts of derivative positions in addition to the prices obtained for collateral liquidation will also inevitably face scrutiny.

Smaller pension funds that managed liabilities on an aggregated basis, the so called “pooled LDI accounts” would have been particularly impacted

³ [DB Pension Scheme Leverage and Liquidity Survey \(nationalarchives.gov.uk\)](https://nationalarchives.gov.uk)

by the actions taken by their investment managers. These funds would have been less able to deploy additional margin collateral at short notice and would have been more likely to have their positions closed or reduced by the investment manager as a result.

Additionally for these pooled funds, their reported high levels of leverage would have resulted in an oversized multiplier effect. In order to maintain their leverage, further capital would need to have been injected at short notice by the corporate sponsor of the fund, in addition to the collateral demands. As this capital is unlikely to have been forthcoming in the required timeframe, leverage would have been reduced by selling gilts further fuelling the “doom loop”.

It is Solum’s understanding that no scheme defaulted on its obligations, and all remain solvent. There is therefore a perception that any closeout may have been pre-emptive with the potential for investment managers to have failed in their obligations as defined in the documentation.

Any scheme that was forced into a closeout situation would become unhedged and suffer whiplash losses if interest rates fell, which is exactly what happened once the BOE announced its bond-

buying programme. The extent of these losses would vary from scheme to scheme, but as the whole point of LDI derivative positions was to remove the negative effects of falling interest rates, any potential claims for mismanagement by the investment manager would focus on the impact of falling rates on the unhedged liability.

Other operational failures, including the widely reported inability of scheme custodians to facilitate the delivery of collateral in a timely manner, would also have exacerbated the situation. The failure to deliver by the custodian would increase counterparty risk for the investment manager potentially prompting a forced closeout. The withdrawal of a scheme’s liquidity, either in the form of a failure to honour credit facilities or the failure of an institution to provide agreed liquidity via a repo facility could also be grounds for dispute.

In Solum’s opinion therefore, there are significant areas of potential challenge which may result in litigation and claims for damages.

Solum has a team of independent market professionals, experienced in financial disputes, with expertise across valuation, close out, governance and market practice.

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