UK INSTITUTIONAL GROUP

Risk management: More than the sum of its parts?

Why defined benefit (DB) schemes need to consider risk factors in aggregate.

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2023 will be a year of reckoning for the UK pensions industry.

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Introduction.

As a growing number of market participants come under fire in the aftermath of 2022's liability-driven investment (LDI) crisis, the time for introspection is upon us. The Bank of England's deputy governor for financial stability, Sir Jon Cunliffe, put it succinctly last October.

'While it might not be reasonable to expect market participants to insure against all extreme market outcomes', Cunliffe contended, 'It is important that lessons are learned and appropriate levels of resilience ensured'.[1] A rallying cry for a more responsible approach to risk management, this statement provides food for thought.

Certainly, the LDI crisis highlighted the need for DB schemes to consider risk in a more holistic manner. To focus purely on quantifiable risks, we believe is not enough—trustees must consider qualitative risks, even if these risks are harder to measure. How else can they reasonably ensure their scheme remains on a secure footing?

In this paper, we will use black swan theory to demonstrate the limitations of quantitative risk models. We will argue that schemes need to consider the risks they are facing in aggregate, accepting that within the context of asset and liability management (ALM), not all risks can be measured. The idea of 'resilience' will be introduced, which is key to understanding our approach to responsible risk management.

[1] Stephanie Baxter, 'Bank of England says lessons must be learned from LDI crisis,' *Professional Pensions*, 7 October 2022.

What can black swan events tell us about the limitations of quantitative risk models?

To get started, let’s consider the limitations of a mathematical model favoured by many DB advisers: value at risk (VaR).

VaR measures the maximum loss a portfolio is expected to incur over a given time horizon, with a specified level of confidence. For example, if a portfolio has a VaR of £1M, at a 95% confidence level, then there is a 5% chance the portfolio will incur a loss of £1M or more over the given time horizon.

If this seems overly simplistic, then it’s worth remembering that VaR is a tool rather than a complete measure of risk. Its predictions are based on a series of assumptions, which are limited in scope.

Limitations of VaR

- Assumes a correlation between past and future ‘shock events’
- Considers only quantifiable risks
- Does not account for losses beyond VaR estimate (i.e., tail risks)
- Assumes investment returns are ‘normally distributed’, and have an equal chance of being positive/negative[2]

Source: SEI. These are the views and opinions of SEI, which are subject to change. They should not be construed as investment advice.

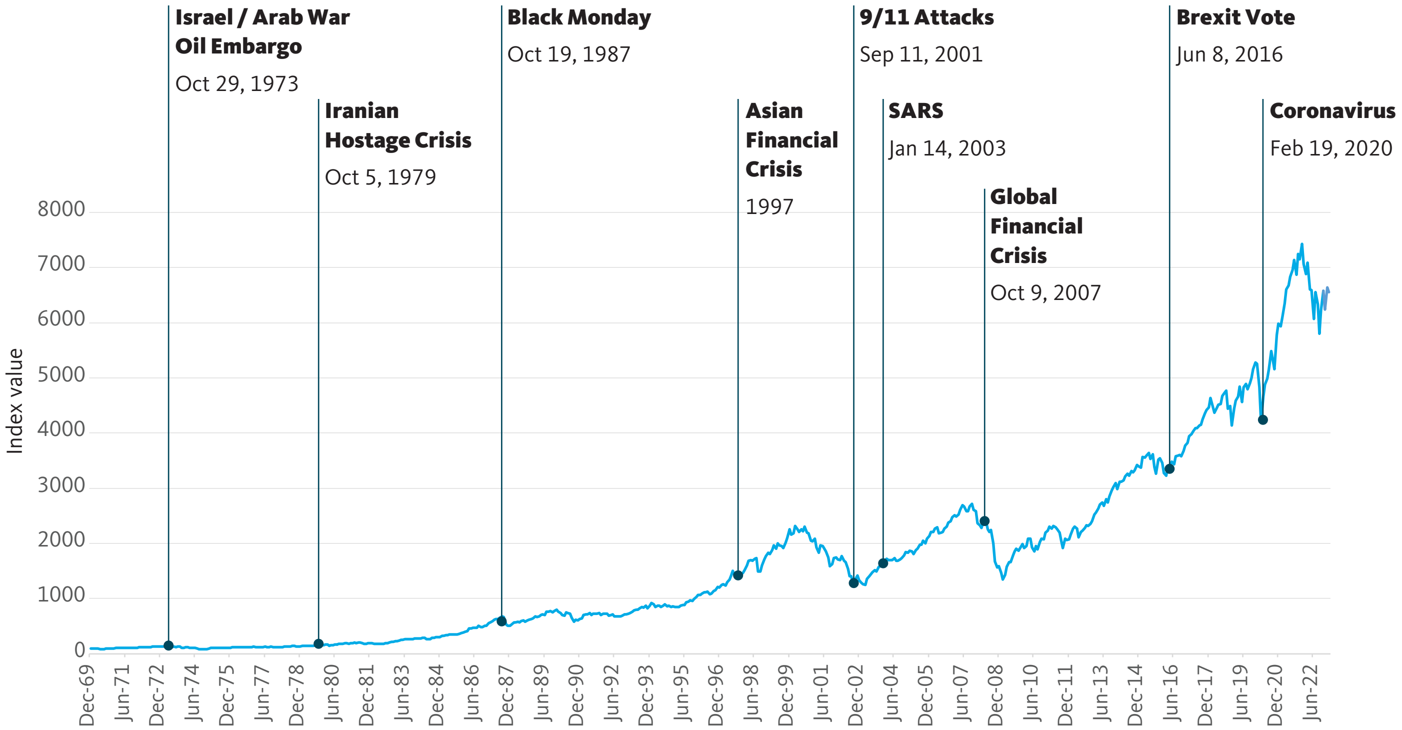
[2] This is not always the case, particularly during periods of market stress, where down moves are often larger than upswings.

These limitations were highlighted in stark terms by the LDI crisis, as the latest in a string of so-called ‘black swan’ events. Defined as events with severe and widespread consequences so rare that normal economic models cannot predict them, black swan events like the LDI crisis and COVID-19 pandemic, we believe, defy VaR analysis. That two such events could occur at all, let alone in quick succession, is outside the model’s predictive scope.

If black swan events can occur when we least expect them to, then a more holistic approach to risk management seems prudent. We believe investment portfolios should be evaluated on the basis of expected returns, exposure to quantifiable risks (which models like VaR can determine), and crucially, resilience to ‘unknown unknowns’.[3]

Black swan events highlight the shortcomings of quantitative models like VaR

Black Swan Events



Source: SEI, MSCI World. Data from December 1969 to February 2023. Past performance does not predict future returns. Index returns are for illustrative purposes only and do not represent actual fund performance. Index performance returns do not reflect any management fees, transaction costs or expenses. Indices are unmanaged and one cannot invest directly in an index.

[3] The concept of ‘unknown unknowns’ was popularised in a speech given in February 2002 by then-US Secretary of Defense Donald Rumsfeld.

How ‘resilience’ can help an investor take a more holistic approach to risk management.

‘You don’t know what you don’t know’, or so the old adage goes. But just how does an investor create resilience to an event that is both unknown and, in many ways, unknowable? And what do we mean when we talk about risk from a resilience standpoint? Put simply, quantifying resilience risks is challenging. Yet these factors must be accounted for if a scheme is to weather a black swan event.

Consider the following: A trustee’s ability to manage unknown unknowns is largely determined by their scheme’s chosen governance model. Likewise, a scheme’s investment strategy and approach to implementation can influence their exposure to a host of qualitative risk factors, which in turn can impact portfolio resilience in the event of market volatility. The LDI crisis highlighted this. As gilt yields rose at an unprecedented rate following the mini-budget announcement, schemes faced different challenges as a result of their governance model, approach to implementation, and investment mandate.

Governance

Schemes working with a consultant versus those working with a fiduciary manager

Schemes exposed to pooled LDI funds and segregated mandates—particularly those applying leverage—had to contend with an onslaught of collateral calls over the course of the crisis. This was further complicated by the generous lead time assumed between collateral calls being made and funds being delivered. Working with a fiduciary manager gave some schemes an advantage here. Rather than waiting for approval, a fiduciary manager can use their discretionary powers to act in a client’s best interests. Not only were schemes able to rely on their fiduciary as a source of expertise during the crisis, this more streamlined arrangement helped save time when it mattered most.

Implementation

Schemes working with a single asset manager versus those employing open architecture.

Schemes exposed to a single asset manager were entirely reliant on that manager's suite of LDI funds. As such, schemes employing this model faced concentration risk during the crisis.

On the flip side, schemes with access to more than one manager, via open architecture, could pivot from highly leveraged LDI funds to more conservative alternatives.

Investment strategy

Schemes operating complex or esoteric investment strategies versus those with a more traditional approach.

Overly complex investment strategies using derivatives and esoteric investment instruments were vulnerable during the crisis. Gilt returns, which had long been assumed a safe haven, were suddenly volatile—this created challenges for those managing leverage and the collateral backing that leverage. Synthetic credit and equity strategies, which were reliant on the same collateral pool as many LDI strategies, suffered as a result. Strategies with a more traditional approach to asset allocation, on the other hand, did not face the same collateral management issues.

Realistically, would a model like VaR have captured the governance and operational risks flagged above? If black swan events illustrate the limitations of quantitative models, then they also make clear the benefits of a more holistic approach to risk management.

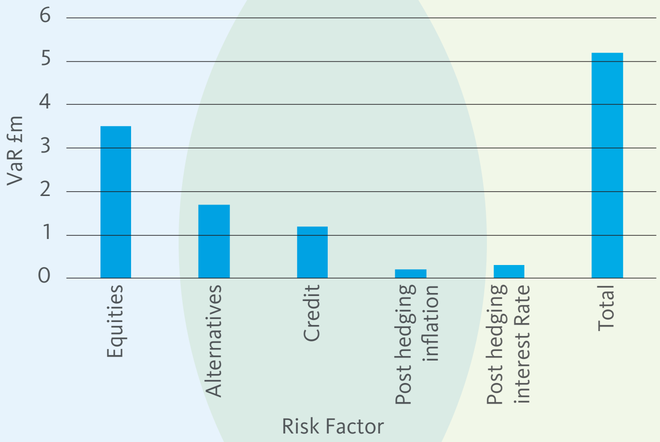
To close, let's look at two schemes, which have the same risk/return profile and are thus identical from a VaR perspective. The scheme on the right is undeniably more resilient, thanks to the trustee's consideration of qualitative, resilience risks.

VaR is ostensibly the same for both schemes …

SCHEME 1

Traditional risk management approach

- ESG considered in silo
- Exposed to single manager risk
- Non-outsourced mandate – potentially missed opportunity
- Potentially opaque
- Multiple valuation sources



SCHEME 2

Approach using a resilience-based framework

- Fully integrated ESG
- Manager-of-managers approach
- Outsourced mandate allows nimble decision making
- Transparency within underlying managers (e.g., LDI)
- Common platform allows daily visibility of holdings

Source: SEI.
For illustrative purposes only.

SEI's six steps to building resilient portfolios.

And what this meant over the course of the LDI crisis

For us, maximising resilience is about:

1 Having the ability to adjust a client's asset allocation

As a fiduciary manager, our governance model provides the means to adjust client asset allocations efficiently. During the LDI crisis, this allowed us to move quickly, and overweight LDI assets as LDI managers reduced leverage.

2 Assessing liquidity comprehensively

We try to ensure client portfolios can meet their cash flow requirements for an extended number of years (e.g., three years), relative to extreme stress events. Our liquidity framework served us well over the course of the crisis—none of our clients experienced cash flow issues, nor did they require emergency funding from sponsors to meet collateral calls.

3 Leveraging a unified investment platform across clients

Client assets are held on our global investment platform, which provides transparency and daily oversight down to the holding level. For the large part, this meant we were able to view our client holdings and communicate effectively.

4 Adopting open architecture

As the crisis unfolded, our open architecture meant we had multiple LDI managers to choose from. This meant we were able to replace highly leveraged third-party LDI funds with:

- Funds investing in physical gilts
- Funds employing a more prudent use of leverage, in line with our conservative limits
- Our in-house solutions[4]

5 Prioritising ‘no frills’ implementation

We use traditional building blocks (stocks, bonds, and alternative asset classes) to create client portfolios. Leverage, here, is employed exclusively for the purposes of hedging or risk management.

We do not rely on complex derivatives-based structures, like synthetic equities or synthetic credit, to deliver primary market exposures for clients; rather, derivatives are used sparingly for portfolio management purposes. Simply put, we do not rely on investment strategies with a high degree of financial engineering.

Over the course of the crisis, this meant our client portfolios were not exposed to the potential collateral management issues associated with synthetics. Broadly speaking, we had daily visibility of client holdings, which helped facilitate necessary portfolio rebalancing.

6 Ensuring diversification across a number of parameters

We believe diversification is key to building resilient client portfolios. Being globally diversified helped mitigate the impact of UK assets declining over the course of the LDI crisis. Furthermore, our active, multi-manager approach brought valuable style and manager diversification during a volatile period, creating significant value for clients.

[4] SEI funds use a third-party manager, tasked with running bespoke mandates for our clients on an exclusive basis.

Onwards and upwards.

Musing on the various ‘shortcomings’ exposed by the LDI crisis, The Pensions Regulator (TPR) issued a statement on 30 November 2022.[5]

Once again, the theme of ‘resilience’ reigned supreme. Over the course of the crisis, ‘the ability to raise liquidity in a timely manner was an issue for a number of schemes’, the statement acknowledged. TPR's recommendation? ‘To withstand a fast and significant rise in bond yields’, DB trustees and their advisers should, ‘achieve and maintain an appropriate level of resilience in (their) leveraged LDI fund ... arrangements’. They should also improve their scheme’s ‘operational governance’.

To meet either recommendation, trustees and advisers need to approach risk management more holistically. Whilst quantitative risks can be measured and managed using tools like VaR, qualitative risks are equally as important. Trustees—particularly those who are not outsourcing or delegating—must ensure they have the necessary resources and expertise to manage both effectively. The long-term financial security of their members depends on it.

As best practice, we believe trustees should also have a risk management framework in place that they review regularly,[6] making updates to ensure their approach remains relevant and effective as market conditions evolve and new risks emerge. The same is true of their governance model and investment strategy.

If the last few years have taught us anything, it’s that black swan events are not necessarily so rare. Bolstering resilience—by carefully considering the suitability of a scheme’s governance model, investment strategy, and risk parameters—should remain front of mind for trustees and advisers in the weeks and months to come.

[5] ‘Maintaining liability-driven investment resilience’, The Pensions Regulator, (November 2022)

[6] The following provides guidance in this regard: ‘DB investment: overview’ The Pensions Regulator.

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