Finding the right balance: The effective management of scheme systemic risks

Pension schemes rely on multiple systems, each of which faces an increasing range of potentially disruptive threats over varying time horizons.

Some threats, such as from cyber attacks, can have immediate and potentially long-lasting systemic impacts. Other changes may emerge more slowly, but their impact may still be profound.

In this note, written jointly by BESTrustees and XPS, we explore practical and proportionate ways in which trustees can identify and manage systemic risks potentially affecting their schemes.

The concepts in this note are developed further in our more detailed paper entitled *'Responding to a turbulent world: Effective trusteeship and the practical management of systemic risks'.*

Key findings

- Systemic risks result from failures within an interconnected system and are fundamentally different to more conventional scheme-specific and market risks which are generally well understood, if still uncertain.
- Systemic risks can be particularly unpredictable in the investment arena as they often arise from interdependencies that are poorly understood, leading to infrequent but severe and lasting impacts.
- The range of systemic risks that pension schemes are exposed to, whether operationally or financially, is growing due to technological and other developments leading to greater interconnectedness within and across economies.
- Having a better understanding of these risks is the first step to taking appropriate action.
- Mitigations need to reflect the nature and speed with which the different risks may manifest themselves and will involve a range of measures over different timeframes.
- Agility plays an important role, but proportionality is also needed given a vast array of uncertainties and extended time horizons over which possible risks can crystallise.

Systemic risk management: Actions for trustees and their advisers

- **Understand your scheme's exposure to systemic risks:** summarise the various core systems underpinning the scheme including operational and financial matters.
- **Identify and quantify points of vulnerability:** using a combination of different risk analysis approaches combining quantitative and qualitative assessment; and considering the influence of factors such as 'tipping points' and 'feedback loops'.
- **Establish a clear plan to address and monitor each identified risk:**
  - Have clear 'Day 1' response plans for 'fast' risks, such as cyber risks and, when there is no urgency, test these to ensure people know what is expected of them.
  - Have adequate and timely monitoring for 'slow' risks such as climate change.
  - Monitor developments and be ready to adapt.

Introduction

Pension schemes are subject to risks at different levels.

Many risks, such as employer covenant risk, are scheme-specific. Broader risks include market risks, which reflect individual macroeconomic factors affecting an entire financial system such as equity returns and the rate of inflation.

However, beyond these risk types, 'systemic risks' exist which may affect entire systems upon which schemes rely. Systemic risks result from a failure or failures arising within an interconnected system, often with a 'domino effect' that can lead to failures beyond simply financial losses, including the closure of markets or the suspension of economic activity.

Much commentary around systemic risk affecting schemes has tended to focus on investment markets and economies – highlighting examples where, as in the Global Financial Crisis and LDI Crisis, a series of linked financial events unfolded leading to very material scheme (and wider) losses.

But with, for example, escalating cyber vulnerabilities, the nature and extent of systemic threats to schemes has grown markedly – threatening broader scheme functions such as administration and pension payments in addition to underlying funding positions. The recent example of PHP vulnerabilities highlights how quickly material new threats can emerge.

Clearly, appropriate risk management is of fundamental importance to pension schemes, as highlighted in the Pensions Regulator's Code of practice amongst other publications.

But beyond general risk management, system-level risk has recently been referenced, for example, in the consultation released in November 2026 by the Department for Work and Pensions entitled 'Pension trustees: investment and fiduciary duties'. This in turn follows the Pensions Regulator's guidance issued in October entitled 'AI concentration risk: Action for trustees'.

Separately, the Bank of England's June 2026 System-wide exploratory scenario (SWES) exercise focuses on the interconnectedness markets and second-round effects relating to private markets.

Given the variety of possible systemic risks, and their huge range of uncertainties, what practical and proportionate steps can trustees and their advisers take to identify and mitigate them?

The emerging threats to the multiple systems upon which pension schemes rely are clearly growing: a key question for trustees is 'how do we manage these developing systemic risks in a practical but proportionate way?'



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Key features of systemic risks

We set out below some observed features of systemic risks and suggestions for how these might be more effectively mitigated within pension scheme strategies.

Feature 1: Systemic risks exhibit greater interdependency between risks leading to more extreme outcomes

Modelling is a vital tool to gauge the magnitude of financial or economic risks that are faced by schemes from an investment perspective. However, modelling is by necessity a simplification of reality and often underplays interconnectedness. It is common to assume that risks are to some degree independent of each other, but when this assumption is based solely on normal market conditions it can underestimate extreme outcomes.

For example, a risk that may have previously oscillated from year to year may shift paradigm to move adversely for 10 consecutive years. An example of this was the continual fall in gilt yields through the 2010s.

Mitigation: Avoid reliance on any single risk model. Utilising several models and approaches can dilute the limitations of any single model.

When considering investment risk, Value at Risk analysis can be supplemented with scenario analysis and stress testing, including specialist tools covering areas such as climate, liability hedging, liquidity management as well as sector and entity exposure.

Even within conventional Value at Risk (VaR) modelling, analysis can be enhanced using a 'stressed VaR', which is calculated using a 'bad day' set of stressed volatility and correlation assumptions - for instance, associated with an adverse climate scenario.

Feature 2: 'Fast' and 'slow' risks behave differently, but 'slow' doesn't mean 'safe'

Technological advances can mean that investment risks can arise and crystallise increasingly rapidly. A prime example here would be the progression of AI.

Other risks can develop slowly over time, for example the impacts of climate change or extended human longevity.

However, the potential financial impact of 'slow' risks should not be underplayed - not least because it is possible for 'slow' risks to become 'fast' risks as conditions change – an example being climate change leading to more frequent extreme weather events.

Mitigation: Employ regular monitoring of risks using a timeframe specific to both the nature of the risk, and your ability to intervene if action is warranted.

- **'Fast risks',** which are known to have the potential to change quickly and need rapid action, require processes that can address any issues within the necessary timeframe. Examples include clear 'Day 1' response protocols for cyber-related events; and, from an investment perspective, making small changes where these lead to greater flexibility in the event of an extreme market event.

  Seek to consider the operational implications of events, not just the financial implications. These include having the scope to convene ad hoc trustee board meetings to permit urgent decision-making; and maintaining up to date signatory lists to enable urgent documents to be processed.

- **'Slow risks'** are nonetheless important and need to receive appropriate consideration with suitably frequent monitoring.

  An example of this from an investment perspective would be monitoring overall exposure to regions, industrial sectors and entities across a portfolio, to avoid excessive concentration, particularly where 'high conviction' active management is used. An alternative example is monitoring for any medical advances which could have a material impact on human longevity.

  Whilst the extent of focus on slow risks for trustees will depend on where a scheme is in its journey, this is not to say that a risk factor should be ignored if it is expected to fall beyond the timeframe of buying out given that this timeframe may not be completely reliable.

Feature 3: 'Feedback loops' and 'tipping points'

Human systems feature extensive interconnections and these often involve 'feedback loops' which can exacerbate price swings and lead to other consequences. 'Tipping points' have the scope to change the nature of the investment risk, dramatically amplifying the magnitude of the outcome.

For instance, in 2009 some supposedly low risk mainstream 'cash funds' lost value as a result of a write-down on some underlying mortgage-related assets. These funds had a very low risk of ultimately defaulting and many investors were not expecting them to be able to fall in value.

Mark-to-market movements can be particularly harmful when leverage is involved. There have been numerous examples of leveraged investors being closed out of positions, crystallising losses, solely as a result of unforeseen price moves.

Mitigation: Managing mark-to-market pricing risk often requires sufficient financial resilience combined with a long holding period to 'ride out the storm'.

Assets should not be considered a source of liquidity if they are either: (i) liquid but susceptible to price fluctuations of their own that may involve locking in a short-term loss; or (ii) expected to be illiquid under certain conditions.

Adequate due diligence of a fund's policy relating to investor withdrawals is also essential, as well as understanding the investor base of a fund or asset type. For instance, greater caution is required when investing in an asset that is either dominated by a small number of large investors or by a type of investor that is likely to move into or out of the fund collectively - for instance if they are advised by the same investment consultant.

Proactively addressing systemic risk

We set out below a series of practical actions that trustees and their advisers can take in the identification, assessment and mitigation of systemic risks.

Action	Commentary
Understand the scheme's exposure to systemic risks	Summarise the various core systems underpinning the scheme, including key suppliers and providers as well as financial risk exposures.
Identify key points of vulnerability	Use a combination of different quantitative risk analysis approaches and qualitative assessment to avoid exposure to the shortcomings of any single approach. These can usefully include targeted stress testing (including 'reverse stress testing') and scenario analysis for specific areas of concern (such as climate or AI-related risks). Traditional Value at Risk modelling can be supplemented with a 'stressed VaR'. Qualitative approaches might include, for example, obtaining specialist advice on cyber or operational vulnerabilities and stress-testing operational platforms.
Establish a clear plan to address and monitor each identified risk	Mitigation options will be risk-specific, but might include, for example, back-up systems, changes to fund manager guidelines, insurance arrangements or the use of multiple providers.
Prepare 'Day 1' response plans for 'fast' risks	Ensure that clear processes are in place to respond to 'fast' risks such as cyber attacks, including information gathering; protocols for communications and notifications; and the involvement of relevant specialists. These should include defined roles and responsibilities along with potential delegated functions.
Establish adequate and timely monitoring for 'slow' risks such as climate change	Establish appropriate monitoring of 'slow risks' such as climate change, liability hedging and longevity risks, including milestones for a review of the approach and the scope for escalation if developments warrant.
Maintain ongoing awareness of emerging threats	Monitor developments in a proportionate manner and be ready to adapt and reclassify risks and mitigations as matters evolve.

Conclusion

Given scarce time and resources, there is clearly a balance to be struck between managing 'clear and present' risks and responding to highly speculative 'possibles', such as 'asteroid risk'. This requires proportionate and focused approaches, rather than seeking to manage a huge range of demonstrably improbable risks where meaningful effective mitigation is, in practical terms, impossible other than in potentially damaging ways for little benefit in return.

Find out more

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