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# LDI for Defined Benefit Pension Funds

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## LDI for defined benefit pension funds

A beginner's guide to liability-driven investment

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## What is liability-driven investment (LDI)?

- An approach to investment in which the strategy is designed in the context of an investor's liabilities
- For defined benefit (DB) pension funds, the liabilities are typically future expected benefit payments, often linked to inflation with longevity

## LDI in the UK

- £1,516bn DB pension scheme liabilities...
- ... of which £517bn hedged
- 6,057 DB pension schemes...
- ... of which 825 using liability hedging

## Overview

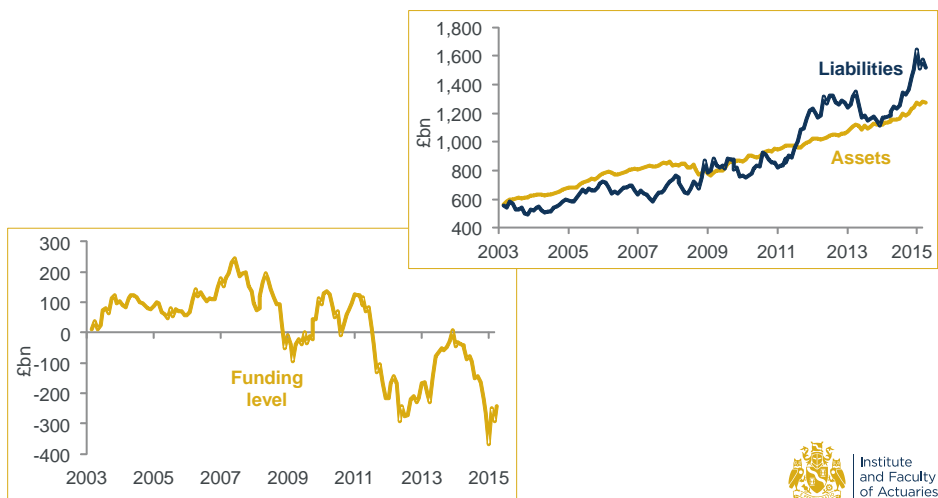
LDI is about:

- Investing, in the context of promised future benefits
- Increasing efficiency by targeting rewarded risk
- Being dynamic!

## Managing both sides of the balance sheet



## Funding levels have been volatile



Source: Pension Protection Fund, 7800 index. Data as at 31 April 2015.

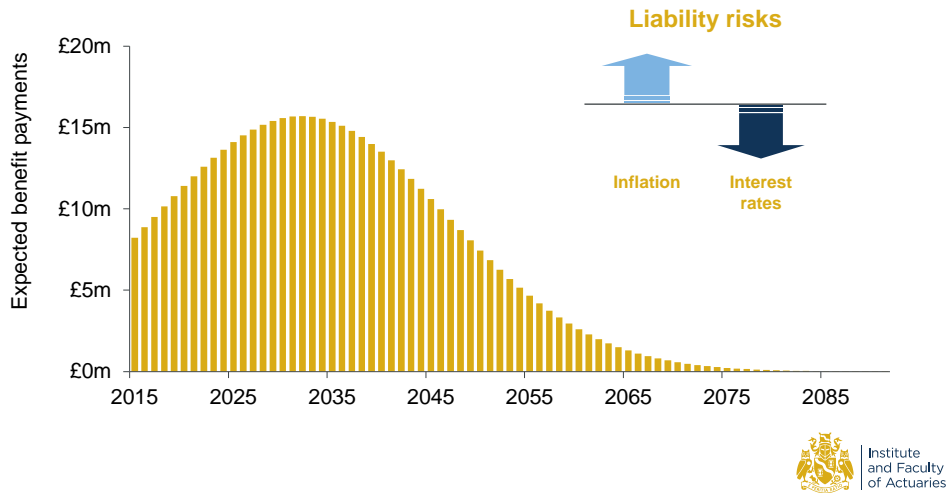
## What has happened?



Source: Insight and Bloomberg as at 15 May 2015.

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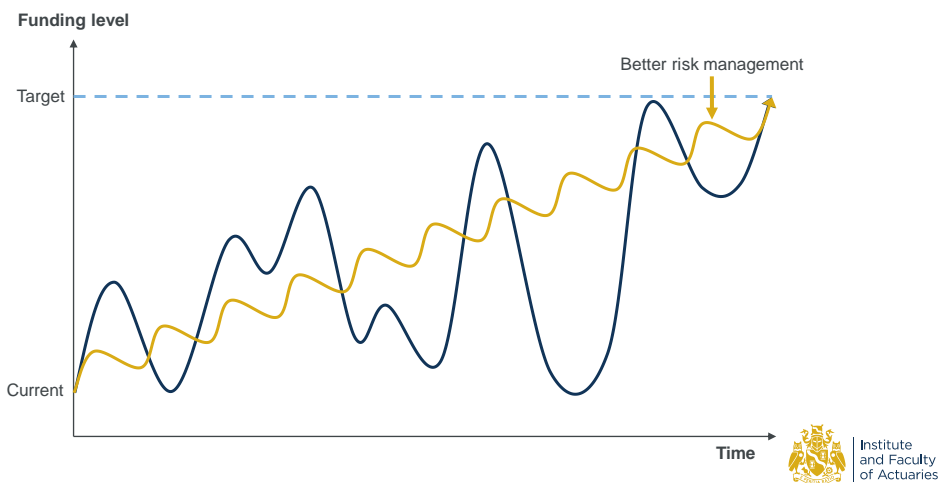
## Liabilities for DB pension funds



For illustrative purposes only.

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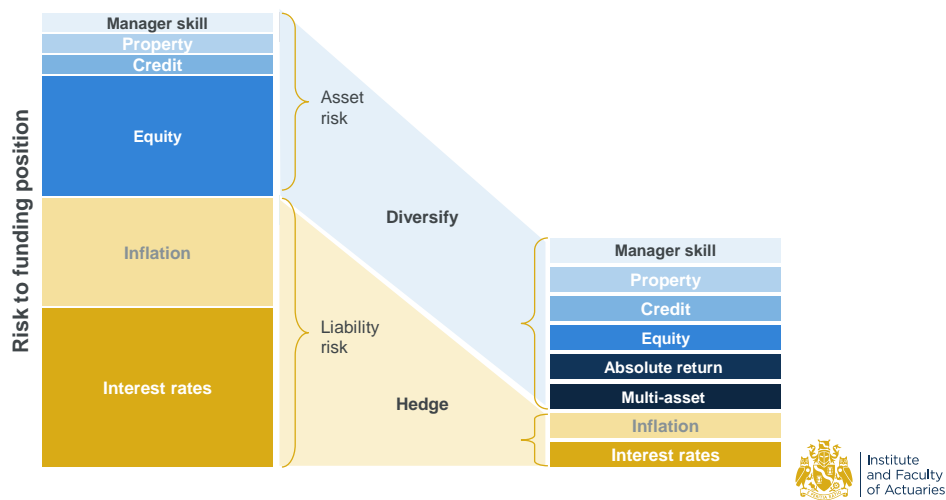
## Improving risk management



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## Target rewarded risks



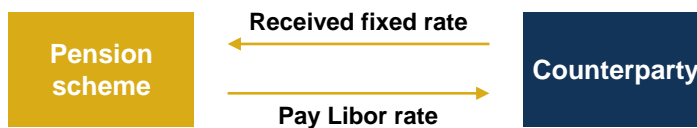
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## Building a liability hedging portfolio



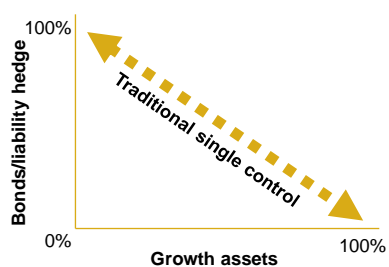
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## Interest rate swaps

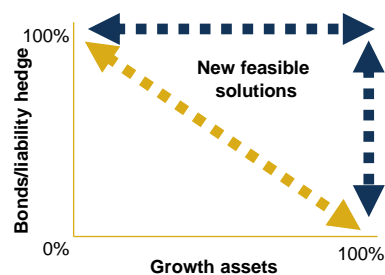


## Avoiding the traditional trade-off

### Equities or 'bonds'

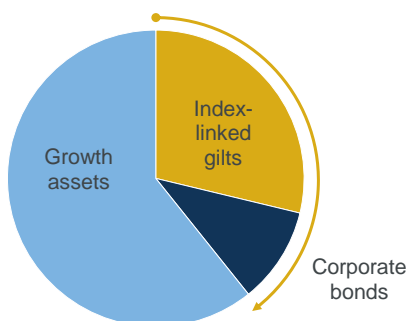


### Equities and 'bonds'

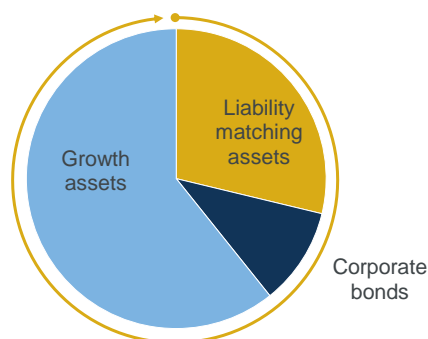


## Example LDI strategy

Current strategy



Using LDI



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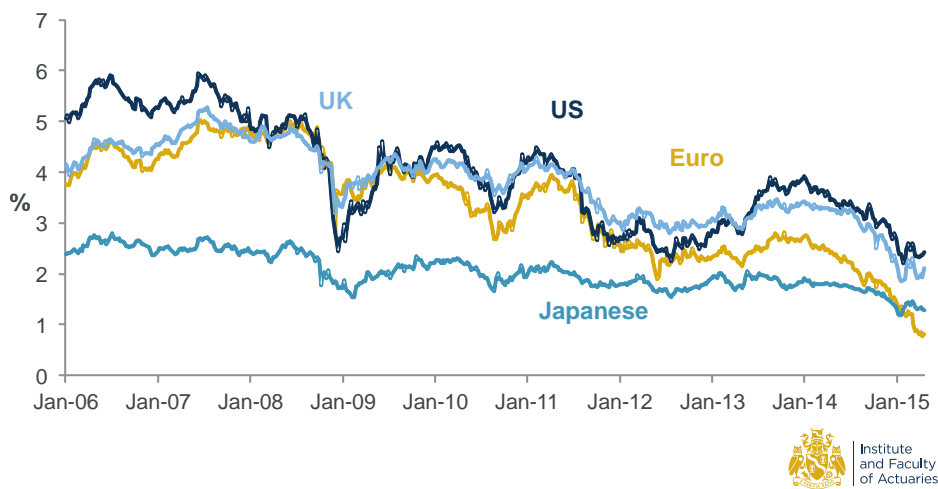
## New risks introduced

Challenge	How are these managed?
<b>Counterparty risk</b>	<ul style="list-style-type: none"> <li>• Credit assessment of banks</li> <li>• Rigorous daily collateralisation</li> <li>• Diversification of counterparties</li> <li>• Protective legal terms</li> </ul>
<b>Leverage</b>	<ul style="list-style-type: none"> <li>• Balancing capital efficiency with conservative leverage</li> <li>• Prudent warning levels</li> <li>• Managed de-leveraging process</li> </ul>

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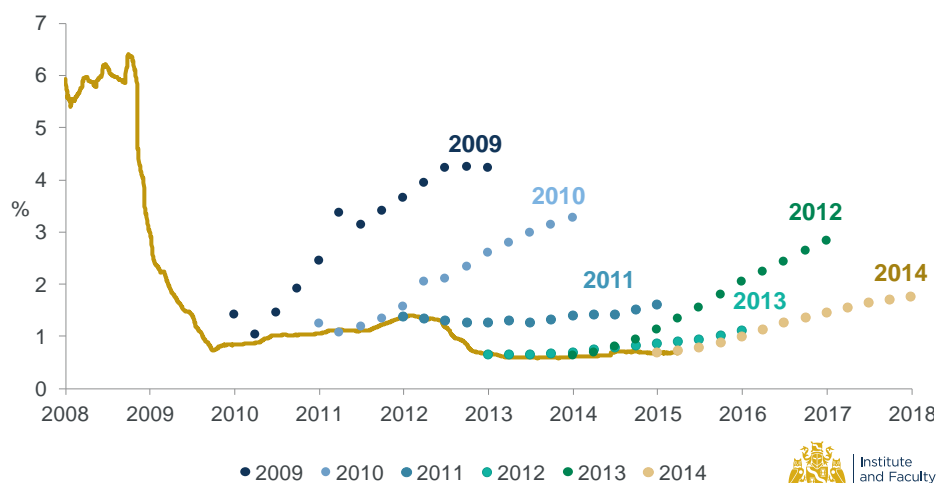


## Why hedge at current low rates?



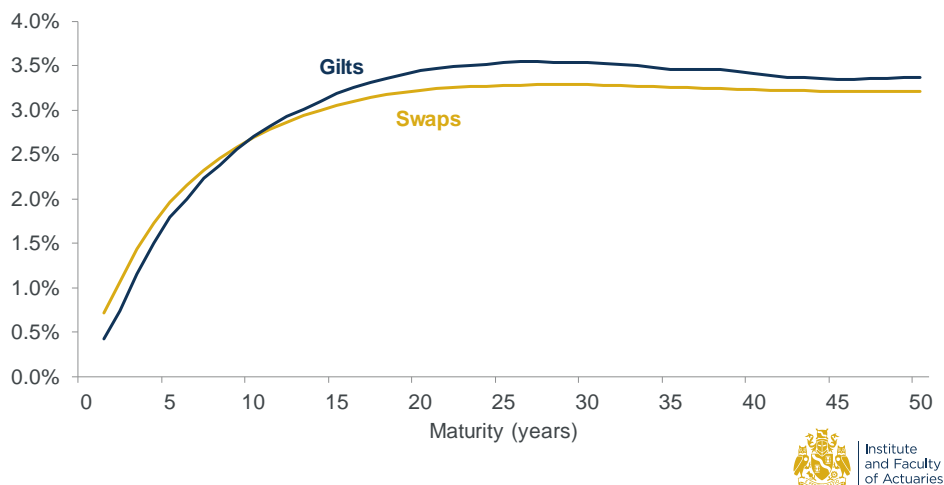
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## Rate rises priced in



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## Hedging with the right instrument can reduce costs



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## Dynamic management of gilt/swaps

### Relative value gilts vs swaps (bp)



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## Summary

LDI is about:

- Investing in the context of promised future benefits
- Increasing efficiency by targeting rewarded risk
- Being dynamic!



**Questions**



**Comments**

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

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