P-Solve

What's going on with gilts and swaps?

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RIVER AND MERCANTILE GROUP

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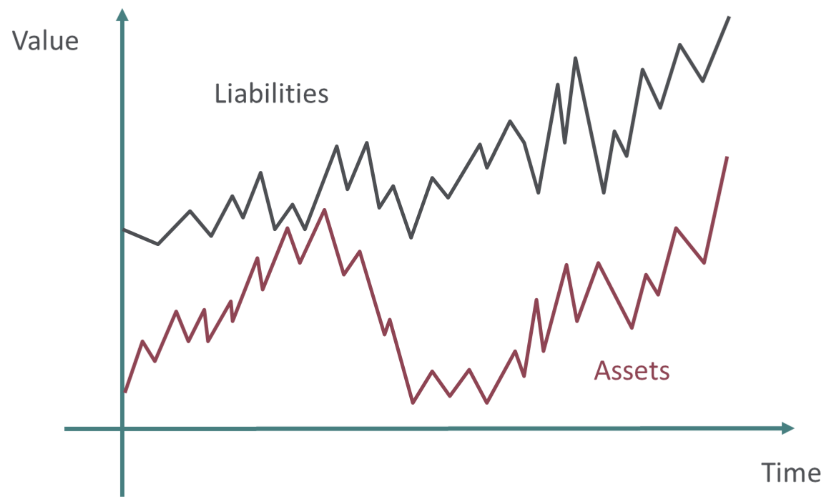
Contents

Liability Driven Investments (LDI)

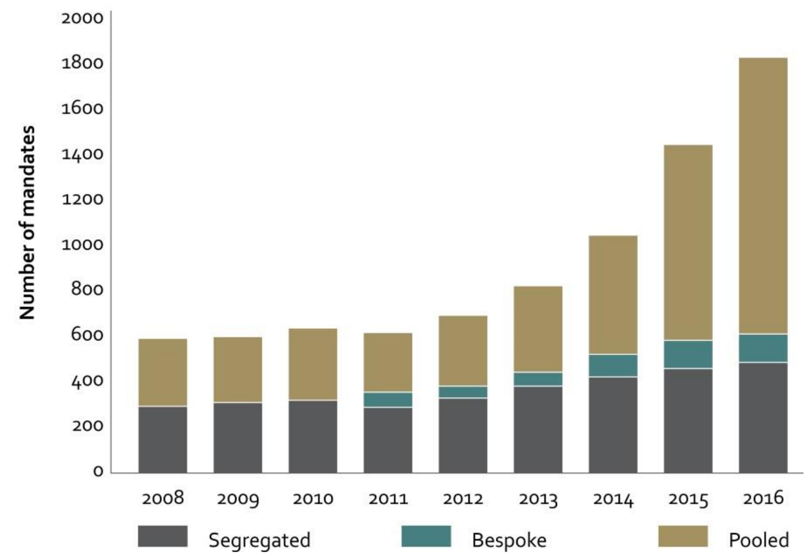
Introduction

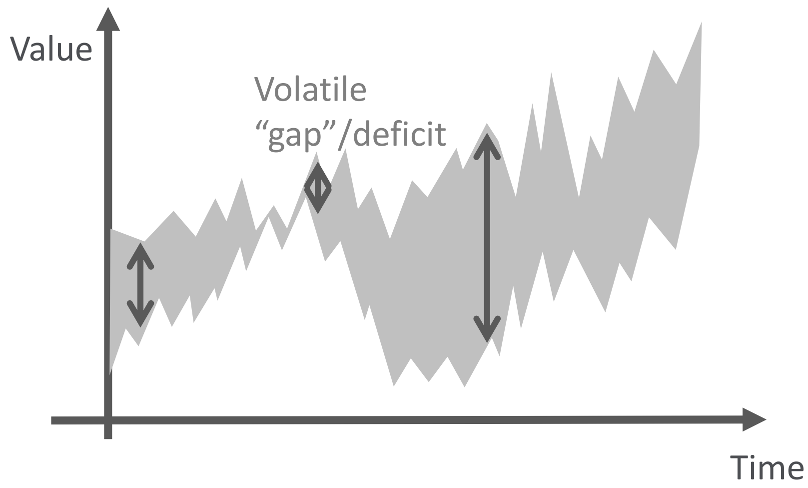
- More and more pension schemes are implementing LDI strategies to provide liability risk mitigation and smooth the ride as scheme's progress towards their end game objectives
- **Why?**



- **How?**
- **What should Trustees be aware of when doing so?**

Total number of LDI mandates



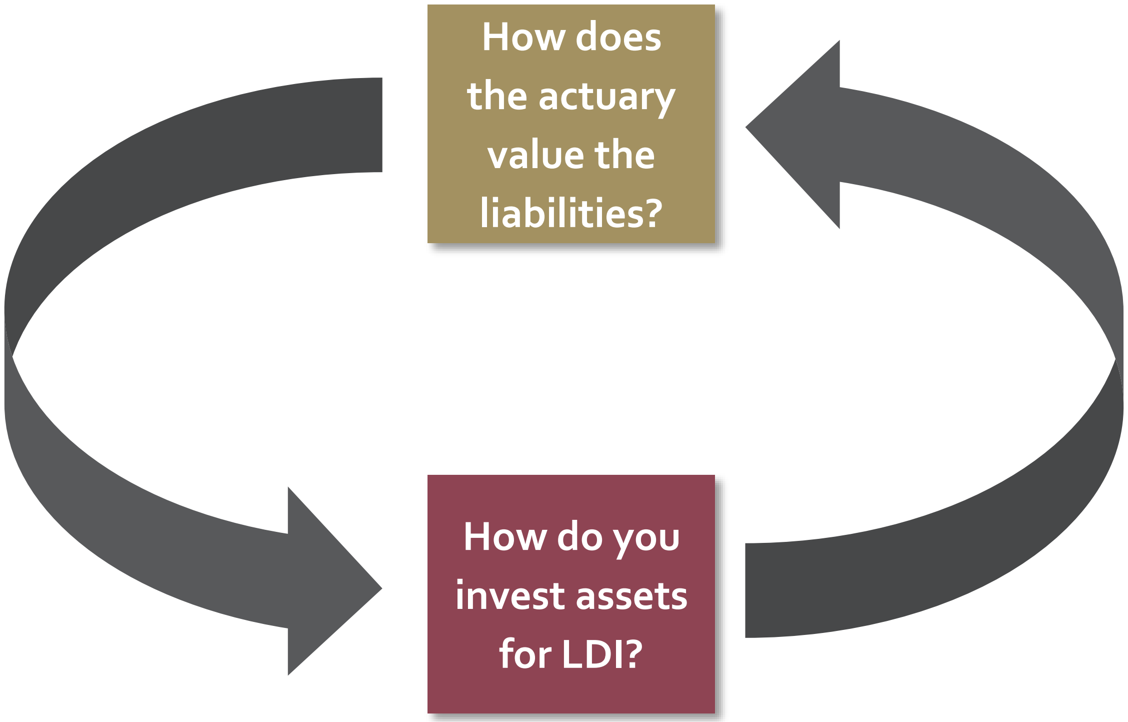


Source: *KPMG LDI Survey 2017*

Liability Hedging Strategies

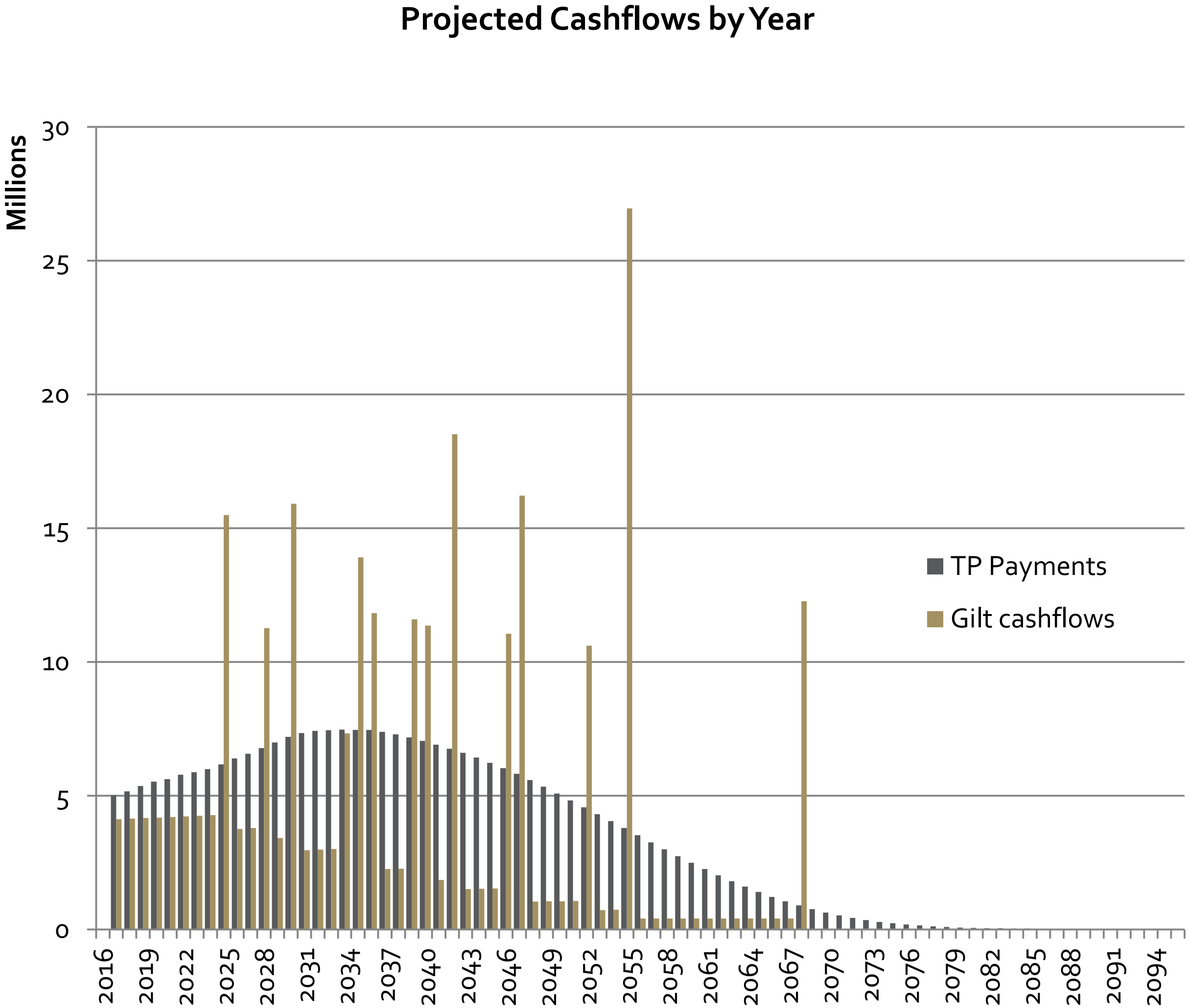
Liability hedge strategies

- A scheme's liability hedging assets are intended to match the Scheme's liabilities fairly closely. For example, when interest rates fall, we want the value of the liability hedge to rise by about the same proportion as the liabilities.



Gilts as a liability hedging asset

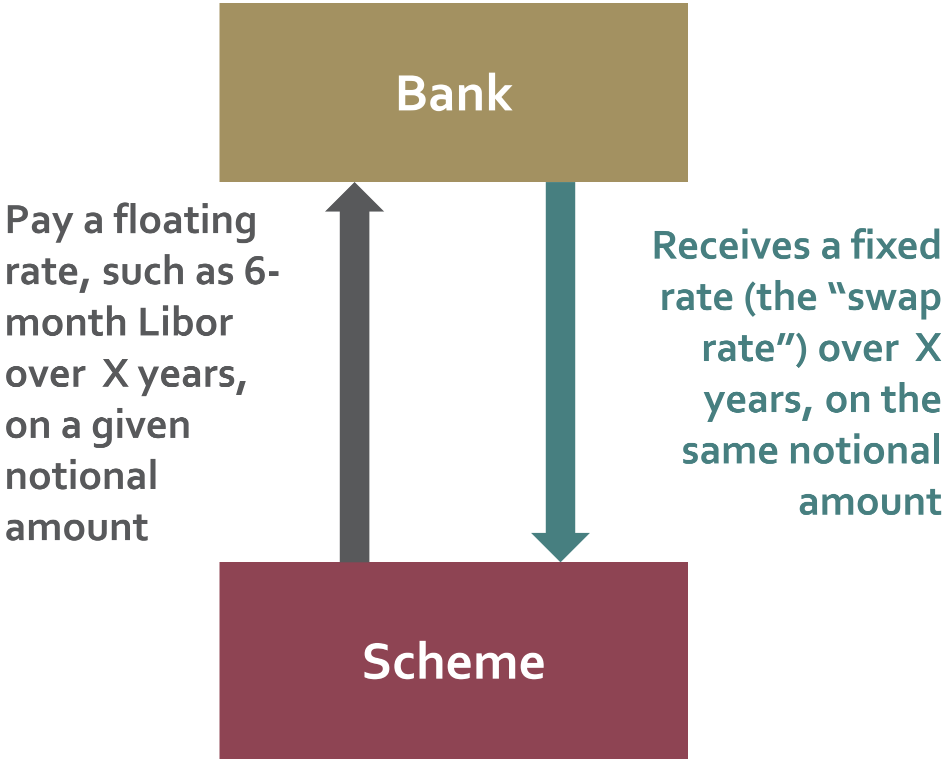
- Cannot tailor the gilts to the liability structure exactly due to limited number of gilts in issuance
- Pension schemes require returns in excess of bonds
- Index-linked gilts do not provide protection from deflation



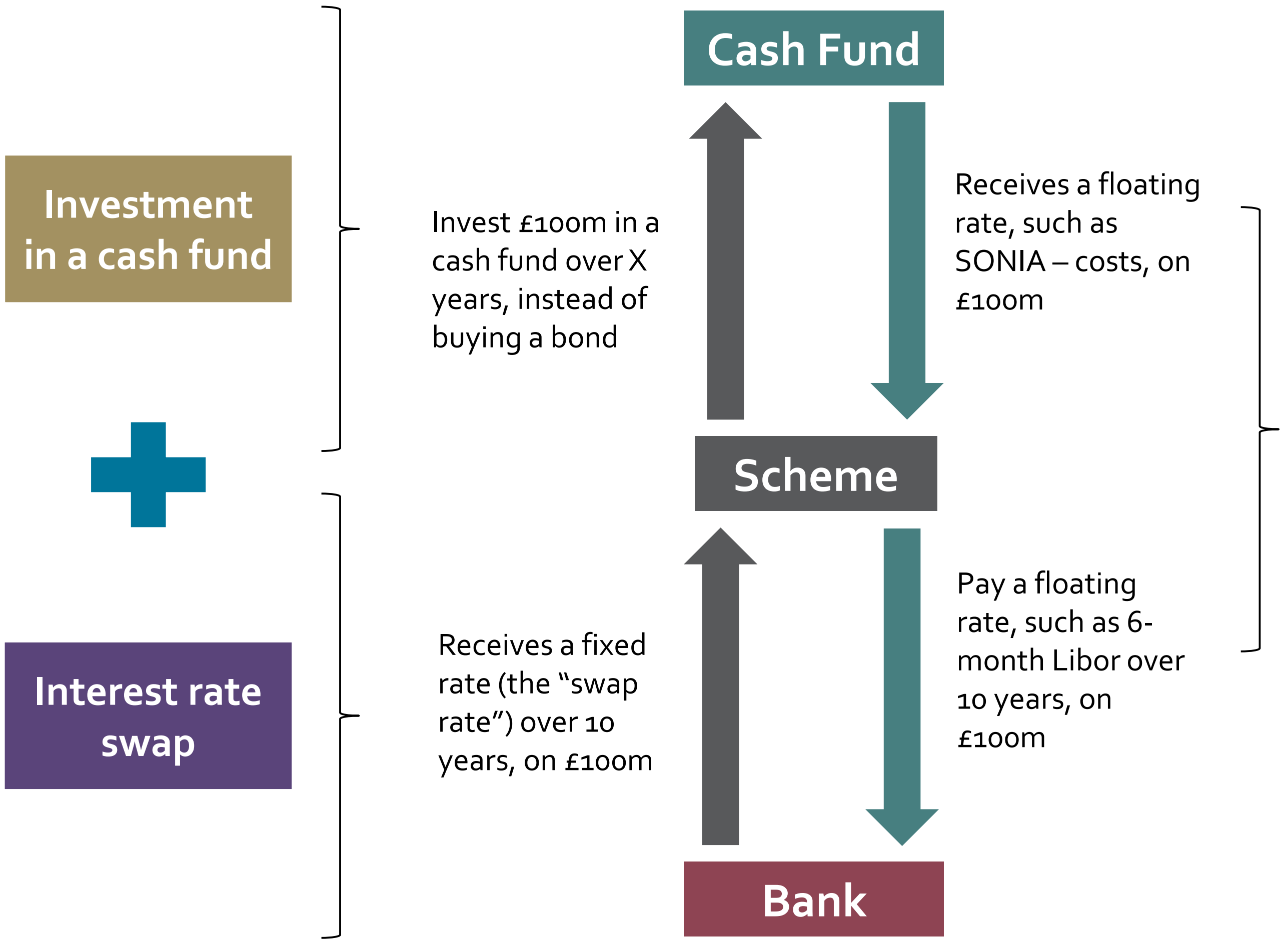
Source: *P-Solve - Illustrative*

Interest rate swaps

- Requires collateralisation
- Compliance with regulations, such as EMIR
- Trading costs are higher than gilts
- Overall, swaps are more flexible



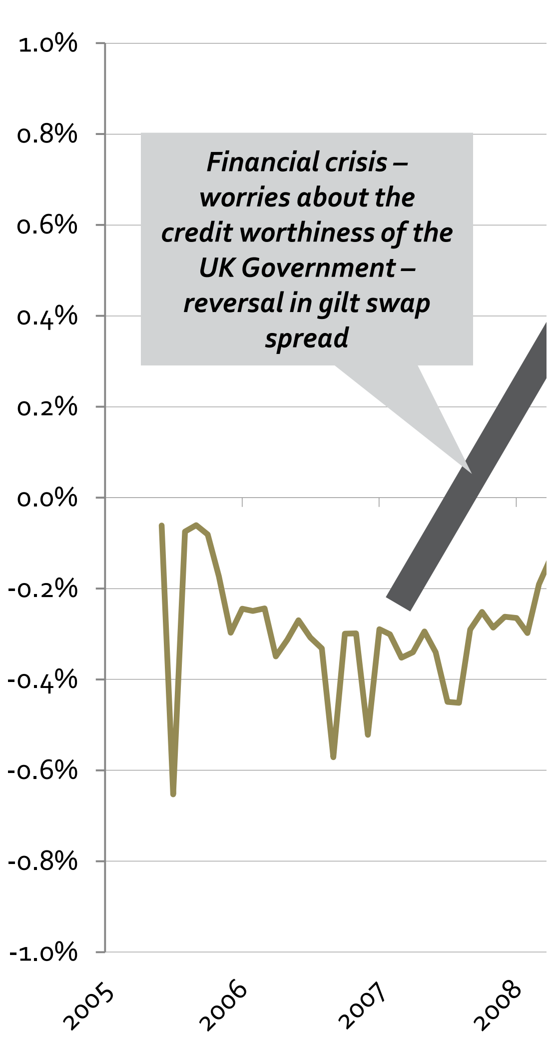
Interest rate swaps – in practice



- Scheme receives a net return which is largely fixed: Swap Rate + (Sonia – costs – Libor)
- Same concept applies to inflation-linked bonds & swaps
- Sonia – costs – Libor = minus 20-30bps typically
- Therefore expect swap rates to be higher than gilts by at least 20-30bps, to compensate for the Libor-SONIA leakage, costs and complexities involved with swaps

The gilt swap spread

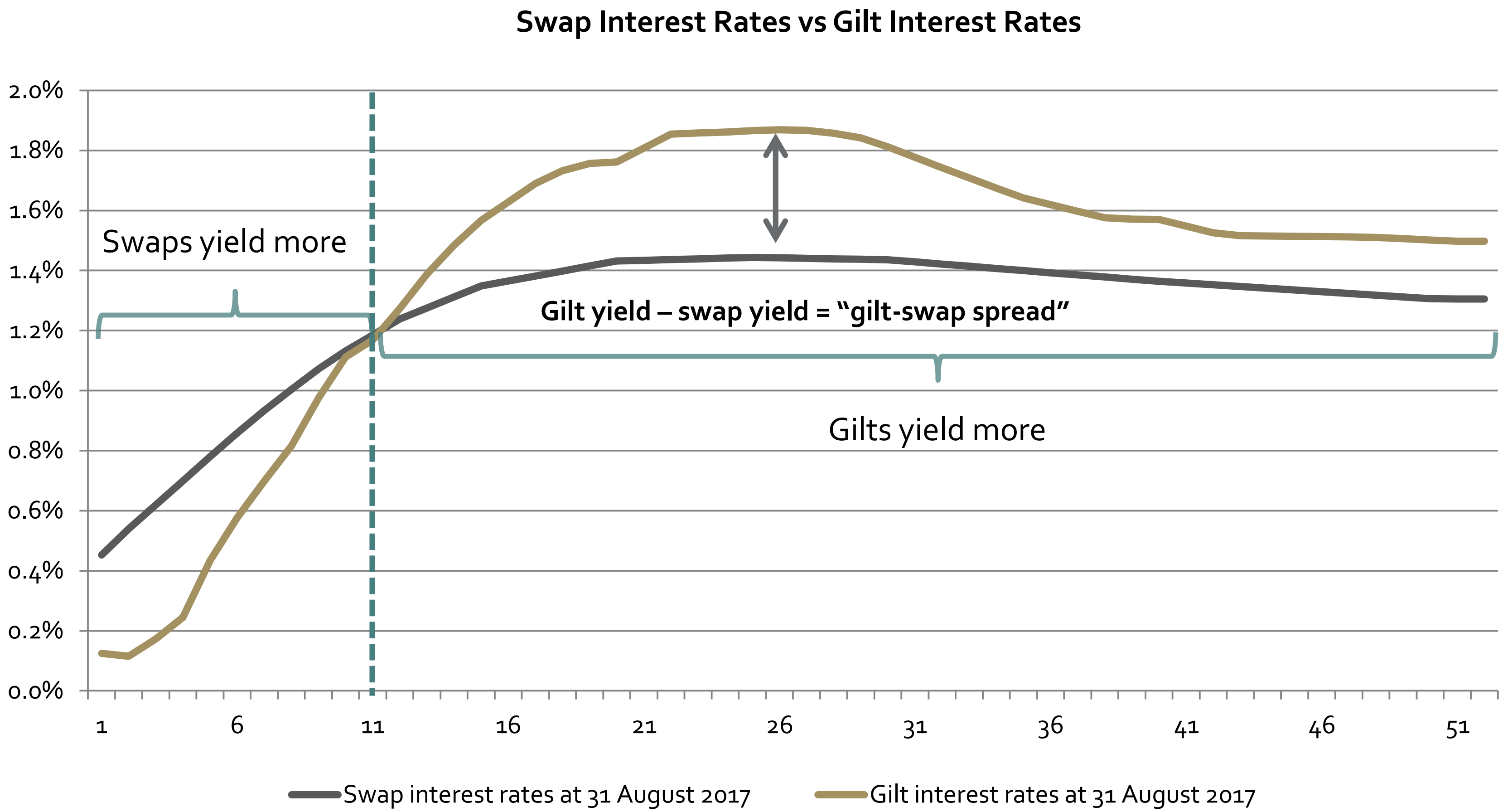
The gilt-swap spread



Source: *P-Solve – August 2017*

The gilt-swap spread

- The difference between gilt yields and swap yields can also be seen across the term structure of interest rates



- There are a variety of drivers for the persistence and variability of the spreads…

Source: *P-Solve, Bloomberg – 31 August 2017*

The gilt-swap spread, possible explanations for it

Gilts up

Gilts up

Gilts up

Swaps down

Swaps down

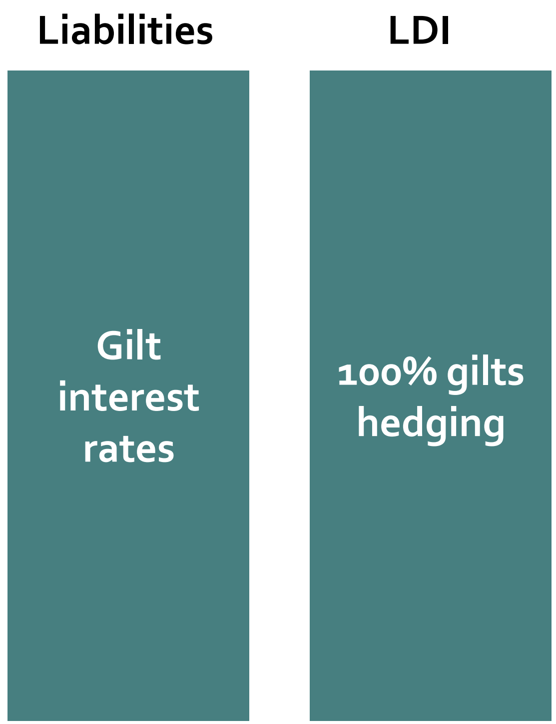
So why should pension schemes/Trustees be aware of this?

The gilt-swap spread – a double edged sword

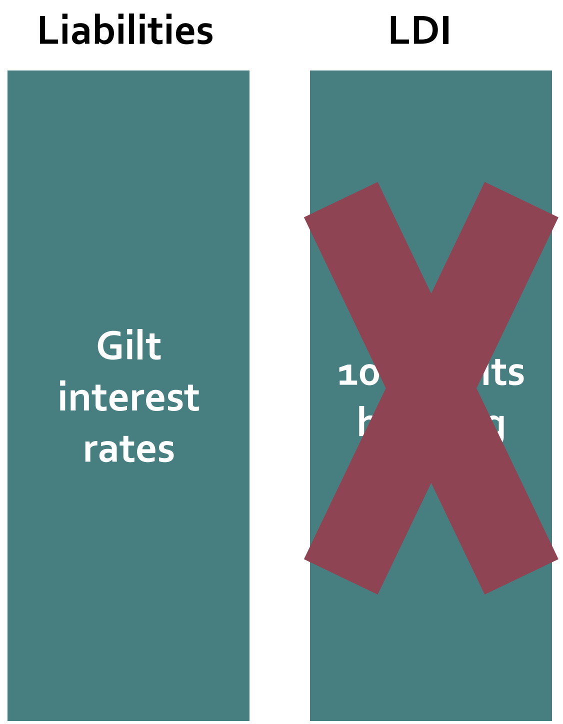
1. **Gilts -** example £1bn scheme

How might a scheme go about hedging?

- If the liabilities are valued on a gilts basis, a scheme might want to hedge using gilts



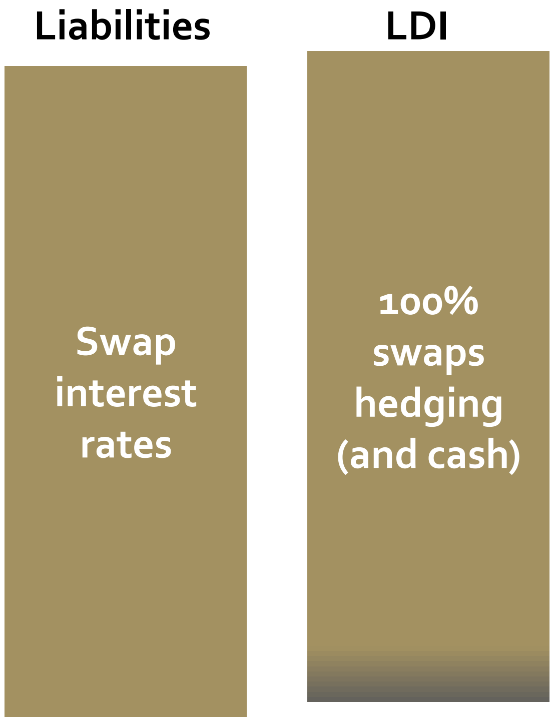
How might a scheme go about hedging?



- There are only a limited number of gilts in issuance
- Need to generate a return in excess of bonds

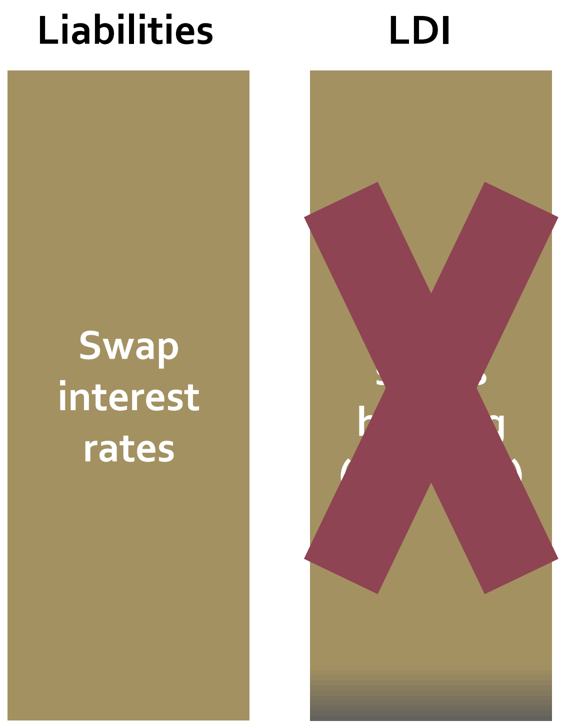
How might a scheme go about hedging?

- So why not use swaps?



2. Swaps - example £1bn scheme

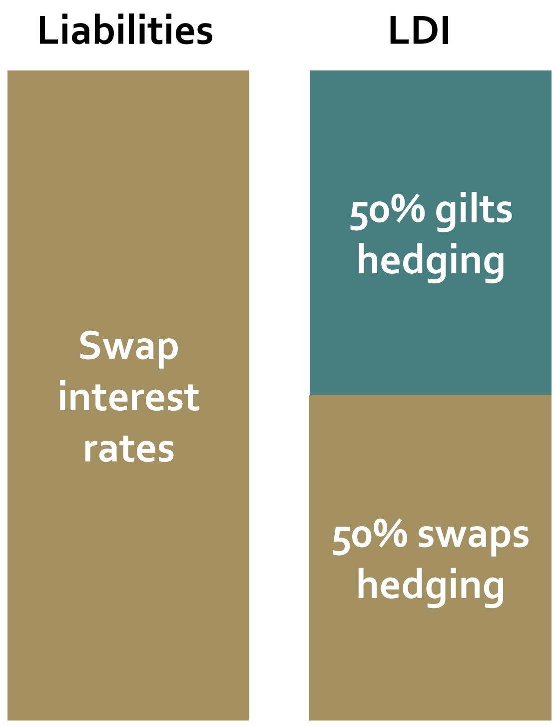
How might a scheme go about hedging?



- Gilts yield more and provide protection
- Using swap curve increases liabilities

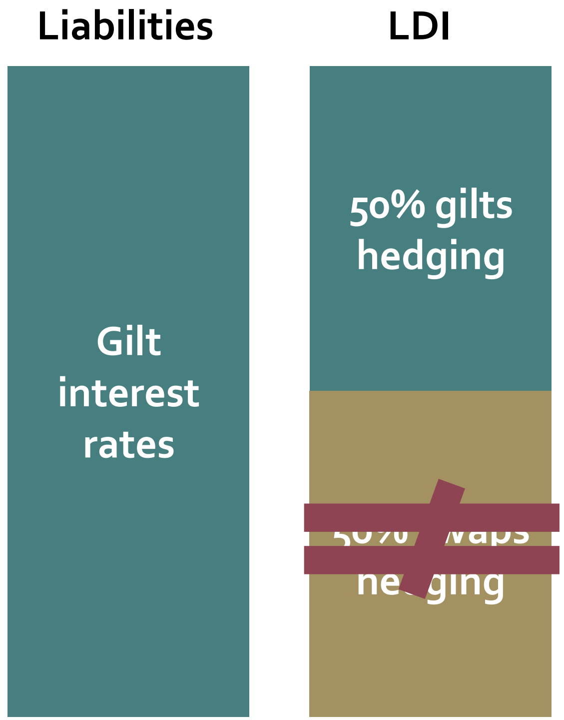
How might a scheme go about hedging?

- Ability to select most attractive assets



3. Swaps and gilts - example £1bn scheme

How might a scheme go about hedging?



- Basis risk – increased funding level volatility
- For example, if the Gilt curve fell by 0.1% relative to the swap curve, the Scheme's deficit would increase by about £20m)

How might a scheme go about hedging?

- A scheme could use gilt TRS (or repo) to gain unfunded exposure to gilt interest rates (as a replacement or alongside swaps)
- Mitigate basis risk

A gilt total return swap (TRS) exchanges cashflows linked to the return of a gilt, in return for a set of cashflows linked to a cash rate (typically LIBOR) plus a financing spread. Gilt TRS have similar risk/reward characteristics to a direct physical investment in a gilt, basket of gilts or a gilt index.

How might a scheme go about hedging?

- Using TRS as a sole replacement for swaps is more expensive and carries more risks

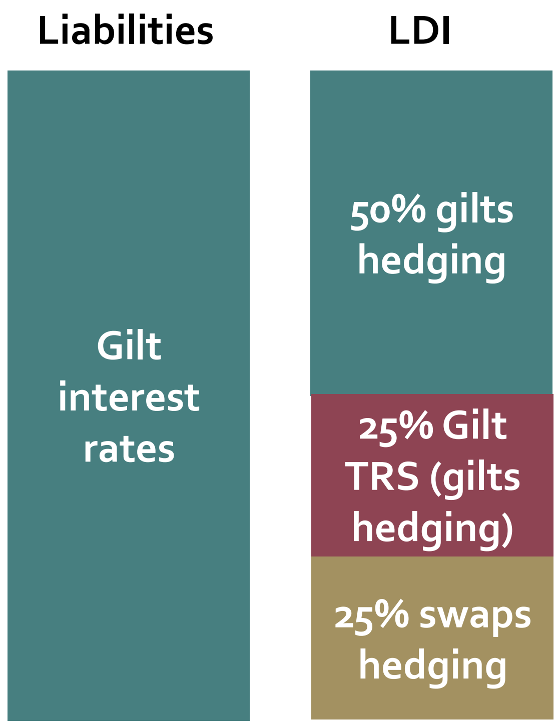
5. Gilts, swaps and TRS - example £1bn scheme

How might a scheme go about hedging?

- Combination of gilt TRS (or repo) and swaps to gain unfunded exposure to gilt interest rates; AND
- Use short-term swaps in order to achieve a better yield on the LDI portfolio
- Mitigates majority of basis risk

5. **Gilts, swaps and TRS** - example £1bn scheme

How might a scheme go about hedging?



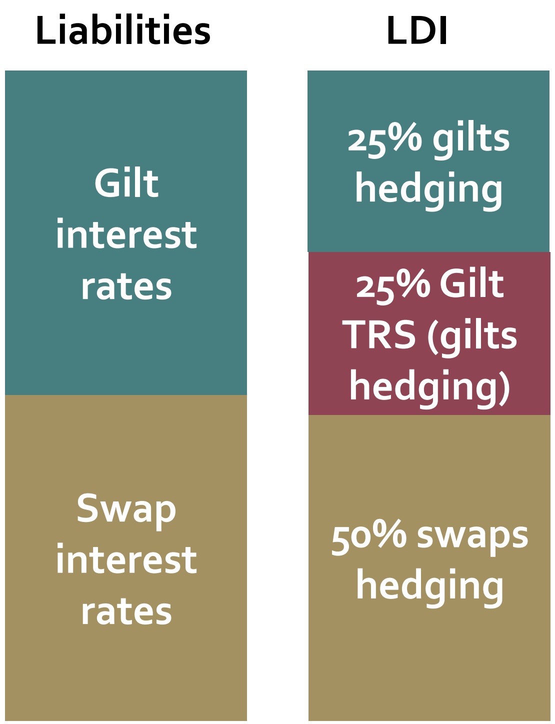
- More risk balanced strategy, with the benefits of mitigating majority of basis risk
- Being able to use the most attractive liability hedging instruments

However, many schemes require significant returns, meaning their allocation to gilts would be much lower

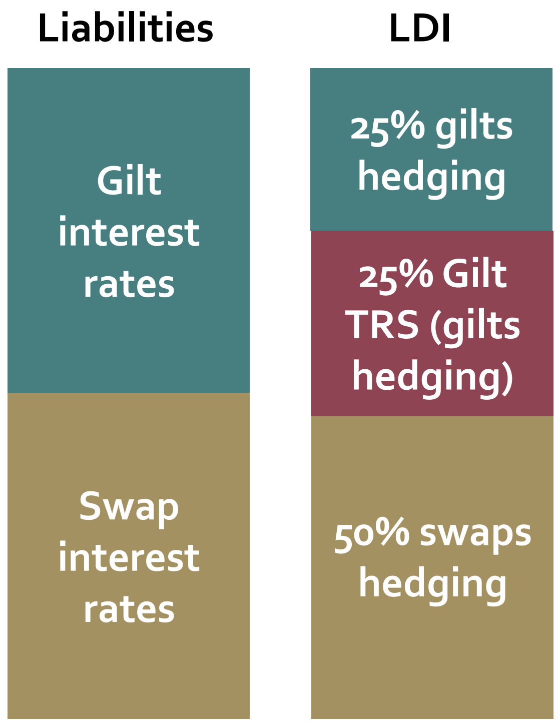
6. Blended discount rate - example £1bn scheme

How might a scheme go about hedging if they require more return?

- Another way to counteract variability between gilts and swaps is to use a mixture of the two in the discount rate (i.e. a blended discount rate)
- This allows the scheme to continue to decide which instruments to use where



How might a scheme go about hedging if they require more return?

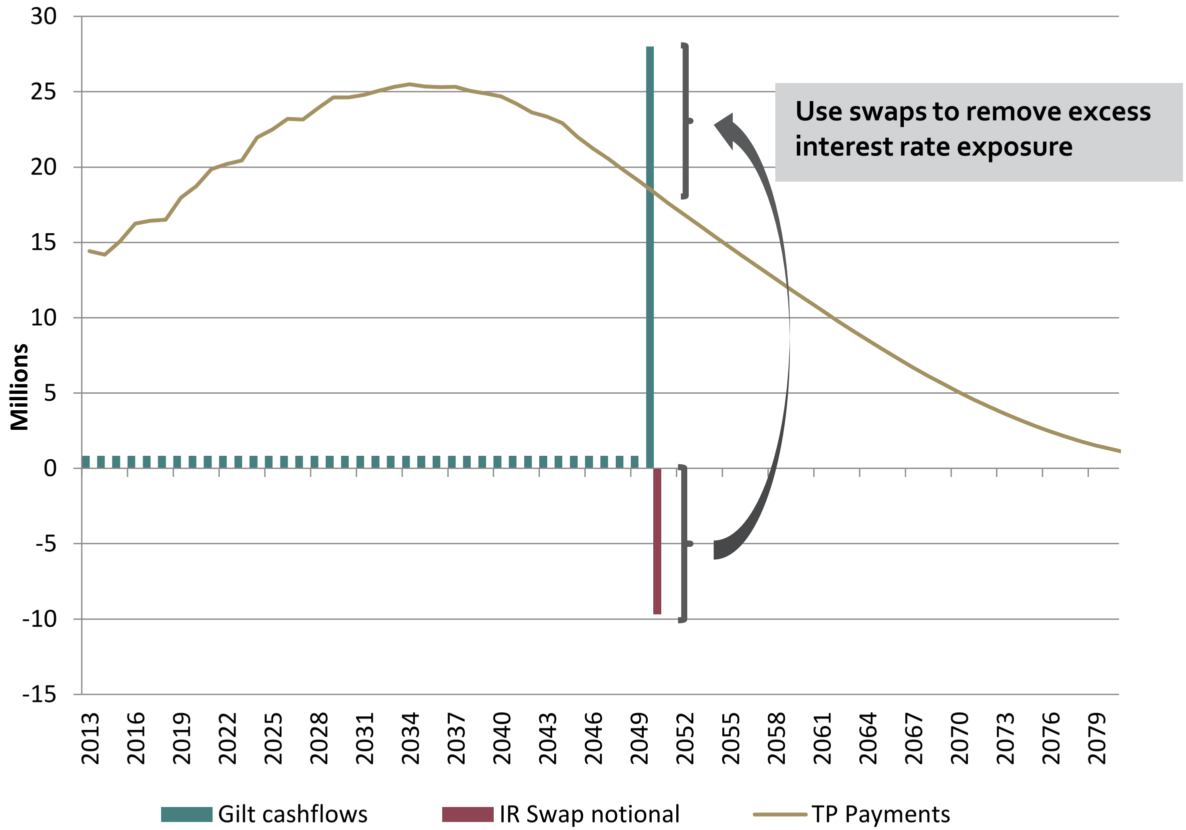


- This should reduce funding level volatility

The gilt-swap spread – a double edged sword

Further opportunities – harnessing the return differential

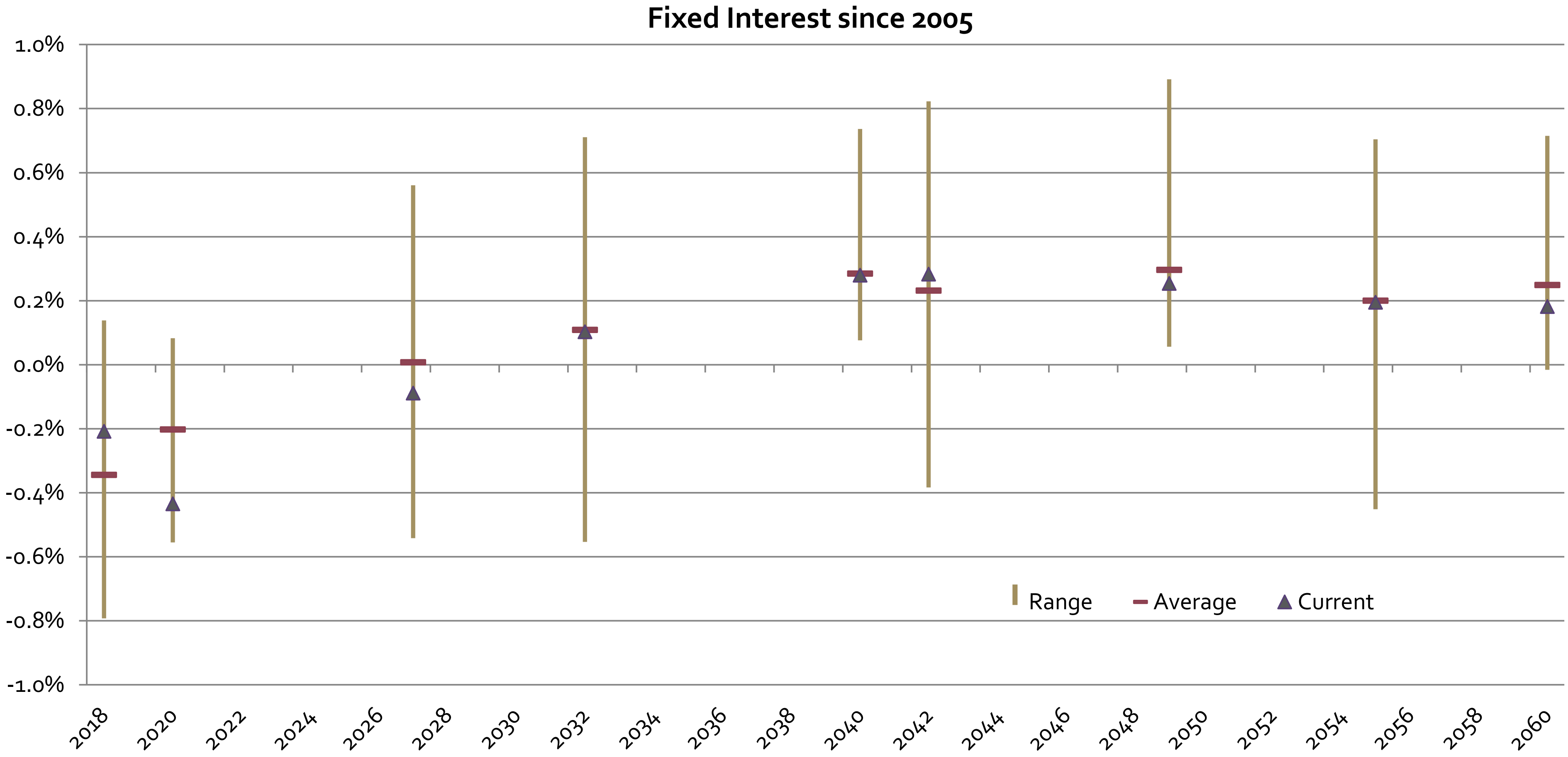
Buy more longer-dated gilts than needed and remove the excess interest rate exposure



- Combining a gilt maturing in 2050, for instance, with a swap maturing in 2050 of lower notional where the scheme enters into a "negative" interest rate swap would remove some of the interest rate exposure of the 2050 gilt
- The Scheme would receive the gilt-swap spread until the bond is sold or matures
- The Scheme is also exposed to the change in value of the gilt-swap spread during the holding period (spread tightening would be beneficial)

Recent reversal in spread widening

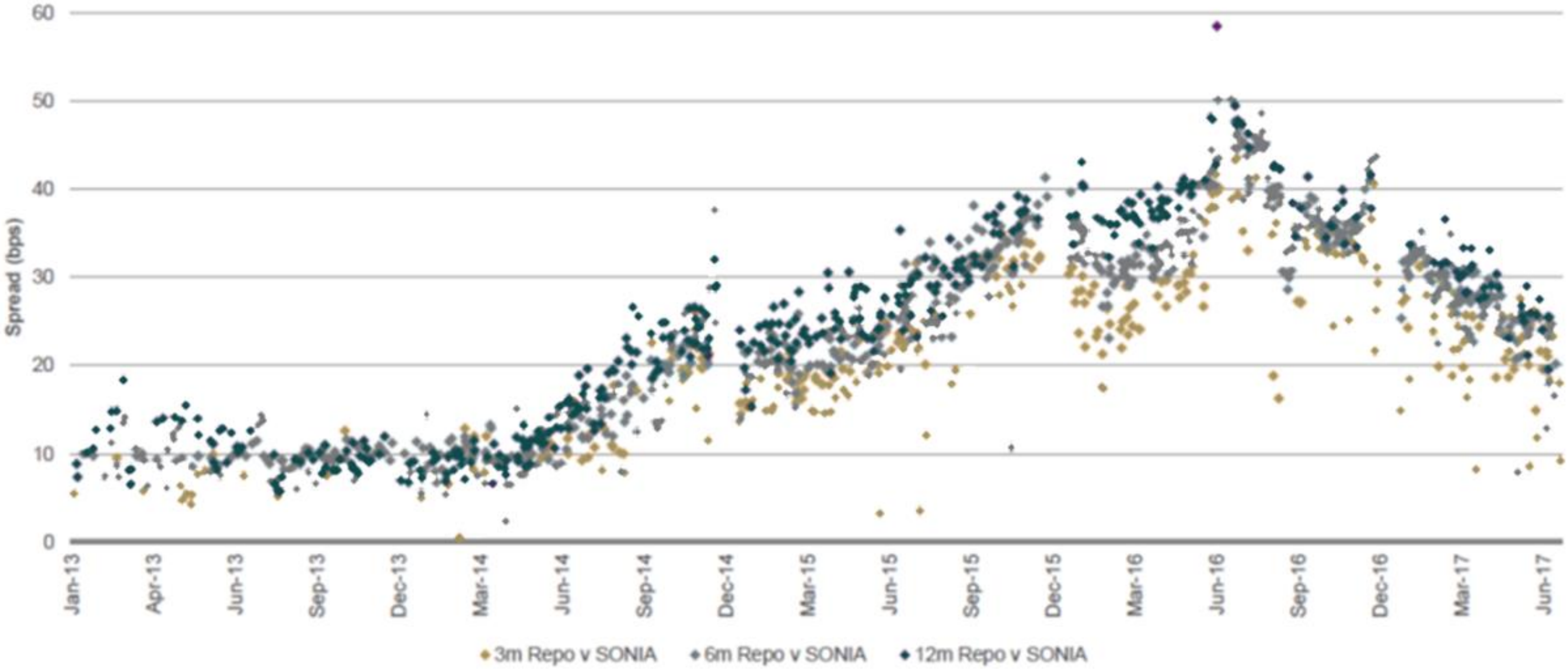
Having peaked in mid 2016, gilt-swap spreads have been falling and are now back to levels not seen since 2014



Source: *P-Solve, Bloomberg – 31 August 2017*

Recent reversal in spread widening

Repo financing costs were arguably one of the key drivers behind these recent moves



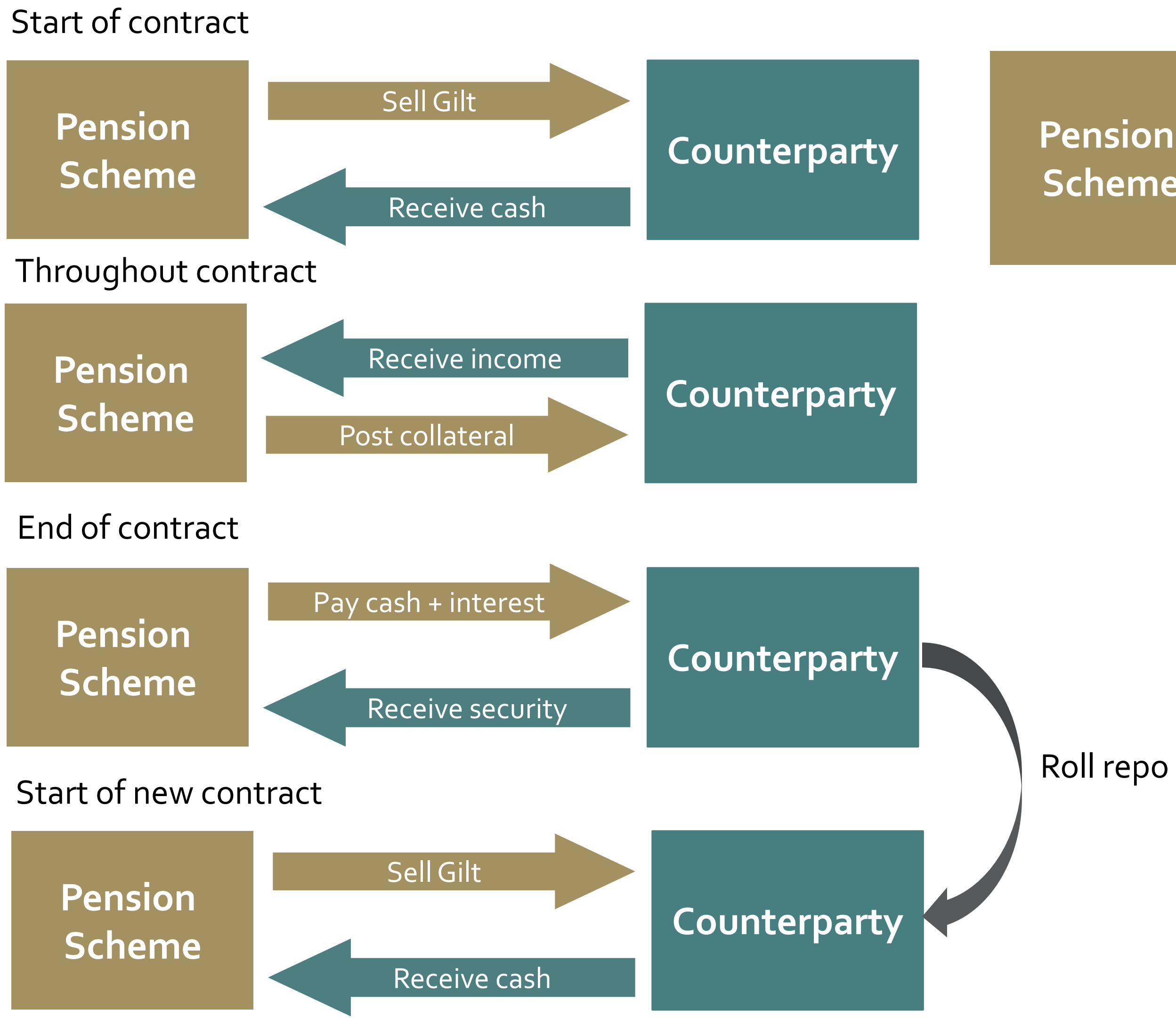
Additionally, uncertainty over LIBOR changes may cause more pension hedging to migrate towards gilts

Source: *BlackRock – 31 August 2017*

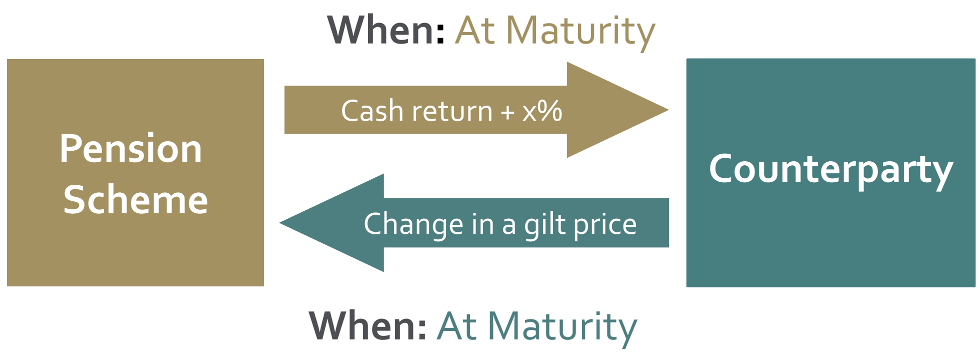
Questions

Appendix

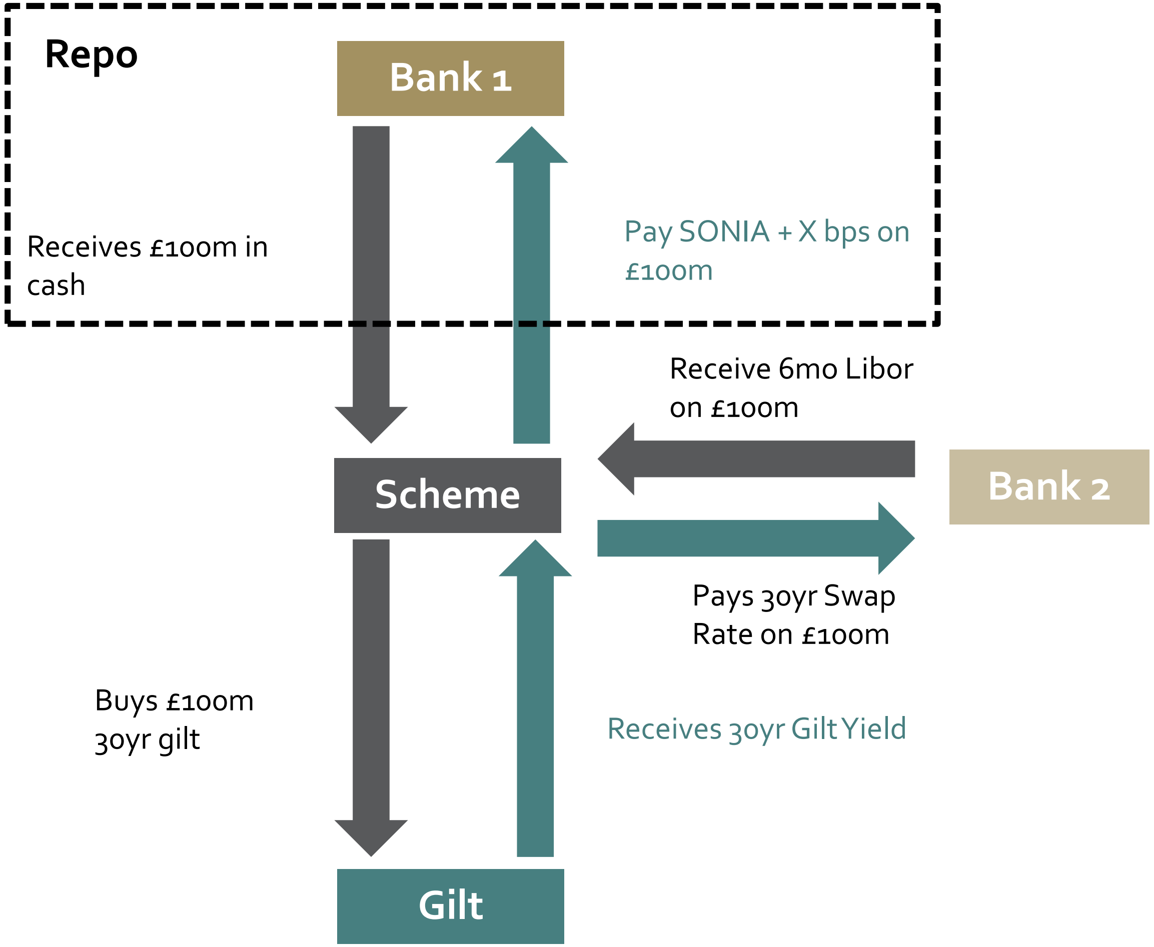
Repo



Gilt TRS



Buy gilts funded using short-term repurchase agreements ("repo") and remove their interest rate/inflation exposure



- The Scheme would receive an ongoing income of: (gilt yield – swap rate) - (SONIA + xpbps – 6mo Libor)
- The second term, which can be referred to as a funding drag, fluctuates over time and is currently around minus 10-20bps. This is lower than the gilt swap spread for most gilts with a maturity longer than 20 years
- The Scheme is exposed to the gilt-swap spread movement and to the on-going availability and cost of repo funding
- In practice, the LDI manager would be expected to unwind this type of transaction when the gilt-swap spread falls below say 30bps (relative to SONIA)

Important Information

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