Pension Scheme Investment in a Low Interest Rate Environment
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Investment in a low interest rate environment

Agenda

• Introduction
• Inflation only hedging and CPAC
• QE and growth assets
• Flight paths and triggers
• Swaptions
• Case study
• Summary

Investment in a Low Interest Rate Environment
Introduction: yields trend lower after introduction of QE

Zero coupon interest rate swaps

- Fall in nominal rates has been more pronounced at the shorter maturities
- Are rates at longer maturities particularly low?

Source: Schroders, for illustration only.
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Introduction: inflation impact more muted

• Inflation rates relatively stable with pronounced impact from CPAC
• Is the biggest worry inflation or deflation?

Source: Schroders, for illustration only.

21 May 2013

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Introduction: CPAC impact

• Political impacts difficult to anticipate
• In this case provided opportunities that persisted for a number of months
• Reactions varied from those anticipating lower future RPI and delaying or reducing hedges to those who took advantage of opportunity to extend their hedges
• Where next?
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Inflation only hedging

Pooled liability matching funds allow real interest rate exposure of index-linked cashflows to be hedged in stages

Route 1
- Current position: No swap coverage
- 1. Hedge real rates
- Use index-linked liability matching funds
- Index-linked cashflows hedged

Route 2
- Current position: No swap coverage
- 1. Hedge inflation only
- Use inflation only matching funds
- 2. Add nominal rates hedge
- Switch* to index-linked matching funds
- Index-linked cashflows hedged

Route 3
- Current position: No swap coverage
- 1. Hedge nominal rates
- Use fixed matching funds
- 2. Add inflation hedge
- Switch* to index-linked matching funds
- Index-linked cashflows hedged

Current position: No swap coverage

Source: Schroders. For illustration only. *Potential to transition the underlying exposures to mitigate transaction costs.

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Example outcomes from inflation only coverage

The table below shows two example scenarios

<table>
<thead>
<tr>
<th>Economic scenario</th>
<th>Potential market outcome</th>
<th>Hedging outcome</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>High inflation and strong growth</td>
<td>Increases in implied inflation and interest rates. Real interest rates unchanged</td>
<td>Inflation only hedging assets rise in value interest rate coverage achieved at better levels.</td>
<td>Scheme achieves funding level gain as a result of strategy</td>
</tr>
<tr>
<td>Falling inflation and low growth</td>
<td>Falls in implied inflation and interest rates. Real interest rates unchanged</td>
<td>Inflation only hedging assets fall in value. Fall in interest rates increases value of liabilities covered by inflation only hedge. Value of inflation linked liabilities remains unchanged</td>
<td>Scheme suffers funding level loss as a result of strategy</td>
</tr>
</tbody>
</table>

These illustrate that two very plausible outcomes will generate very different funding outcomes

Risk estimates are from our internal modelling based on the data provided and our assumptions. The risk estimates forecasts are the result of statistical modelling, based on a number of assumptions. There is no assurance or guarantee that the forecast will be achieved and it should not be considered as a prediction of actual returns that may be realised in the future from the portfolio. Assumptions may change materially with changes in underlying assumptions that may occur, among other things, as economic and market conditions change. Risk numbers exclude other non-investment risks (such as longevity).
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Introduction: where does RPI go from here?

- Significant part of changes in inflation ‘explained’ by changes in nominal rates
- During consultation inflation was below trend (light blues)
- Since announcement moved to well above trend (green)

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Future Level of RPI – is inflation hedging still attractive?

- Monetary Policy Target 2.0%
  - but
    - BoE not hit it recently
    - Shift away from inflation targeting
    - New Governor?
- CPI-RPI wedge 1.0-1.4%
- Risk Premium 0.2-0.3%
  - Risk managers ‘happy/willing’ to pay premium
  - Demand will exceed supply for foreseeable future
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QE has meant lower rates, but...

- Substantial benefits for growth assets
- Difficult to be certain of cause and effect
- Overall impact on funding levels depends on
  - Allocation to growth assets
  - Proportion or interest rate and inflation

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Gilts – Demand and Supply

- Significant Gilt issuance required up to 2017
- Insurers and pension funds need to replace BoE as buyer
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Triggers and Flight Paths

Traditional governance models: 
Potential for missed opportunities

Key questions:
• How will the de-risking plan be managed?
• What tools do we need?

How can schemes avoid missed opportunities?
Source: Schroders, for illustration only

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Flight Paths

1) Only take risk when need the reward
2) Look to take rewarded risks only
3) The Flight Path strategy should enhance plan governance

A Flight Path is a way of plotting a smoother path to a lower risk strategy
Source: Schroders, for illustration only
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Triggers and Flight Paths

**Market based triggers**
- Markets are expensive now; leave some risk on the table
- Monitor market interest rates / inflation rates
- When threshold rate is reached, increase liability risk coverage
- Locks in attractive rates – but may not happen

**Example market yield based trigger levels**

![Graph showing market yields and trigger levels](image)

Source: Schroders, Bloomberg, for illustration only.

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**Investment in a Low Interest Rate Environment**
**Triggers and Flight Paths**

<table>
<thead>
<tr>
<th>Trigger mechanism:</th>
<th>Potential advantage:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding level</td>
<td>Ensures the Plan does not leave uncovered funding risk as the funding level improves</td>
</tr>
</tbody>
</table>

**A key principle of the flight path:**
- Take less risk as the funding level improves
  - less growth risk
  - greater liability risk coverage
- The two can be managed independently

**Example: Liability coverage and funding level**

![Graph showing liability coverage and funding level](image)

Source: Schroders. For illustration only
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Swaptions: an alternative approach to triggers

Rather than using a trigger based mechanism, the scheme could sell payer swaptions

- automatically locks in the higher rates if achievable at expiry
- The scheme also gains from the up front premium
- If the option is not exercised, it can simply be refreshed capturing another premium
- However, the scheme would be worse off if achievable rates rise above the trigger/strike level and then fall back before expiry of the swaption as coverage would not be implemented, missing the opportunity to protect against the subsequent falls

Expiry A: Not exercised
Premium captured

Expiry B: Exercise effective hedge at strike level, plus premium captured

Expiry C: Strategy misses out on levels above strike, but premium is captured

Source: Schroders. For illustration only

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Case Study

April 2008
- Funded to buyout
- High proportion of equities
- Little or no coverage of interest rate and inflation exposures
- Not ready to transact…
- …or even to adjust asset allocation

Result
- Funding level deteriorated during the financial crisis

April 2013
- Governance framework in place involving all key stakeholders including daily monitoring of funding level
- Funding level recovered to 90%+
- Interest rate and inflation risks hedged to the funding level
- Growth assets diversified

Result
- Funding level volatility significantly reduced
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Case Study

• Collaboration between Trustees, Sponsor, Investment Consultant, Scheme Actuary and Asset Manager

• Outcomes
  – Improved funding level
  – Reduced dependence on sponsor contributions
  – Lower volatility
  – Enhanced governance

Measuring the benefits of de-risking

<table>
<thead>
<tr>
<th></th>
<th>Original(^1)</th>
<th>New(^2) without de-risking</th>
<th>New(^2) with de-risking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding level 1-Oct-10</td>
<td>78.4%</td>
<td>79.2%</td>
<td>79.2%</td>
</tr>
<tr>
<td>Funding level 18-Aug-11</td>
<td>68.6%</td>
<td>72.4%</td>
<td>77.3%</td>
</tr>
<tr>
<td>Volatility of funding level</td>
<td>16.7%</td>
<td>15.5%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

\(^1\)Old strategy prior to Schroders' appointment
\(^2\)New strategy implemented by Schroders consisting of index-linked gilts, Synthetic Gilt Funds, corporate bonds and synthetic assets.

Source: Schroders, as at 31 December 2011.
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Summary

• Significant uncertainty regarding the future path of interest rates and inflation
• If you are confident on direction what about timing
• Volatility creates opportunities if you are prepared and have a plan
• Even though interest rates are expensive opportunities exist
  – inflation only coverage may be attractive
  – Swaptions as an alternative to triggers

Intelligent implementation and management can exploit the opportunities that are available in a low rate environment