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Pension Scheme Investing: The role of derivatives

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Client Strategies and Research
Russell Investments

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Derivatives and portfolio construction

- Many derivatives can be though of as borrowing cash to buy an asset
- Derivatives allow the investor to *partially* separate capital allocation (amount of assets) from risk exposure
  - Leverage constraints limit implementable portfolios
- Derivatives can be used both strategically and tactically
  - Strategically: Exposure to risk premia
  - Tactical: We think A will out perform B

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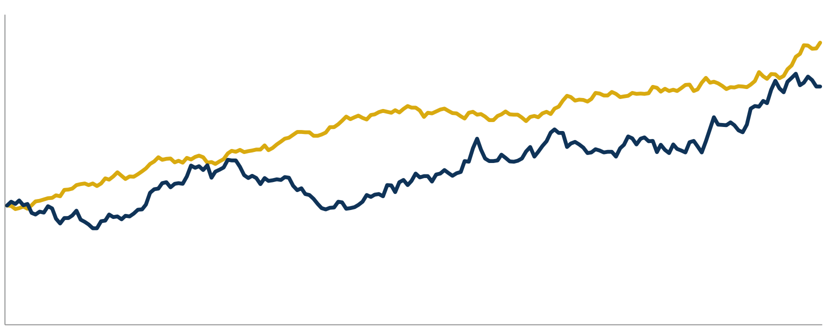
Strategic use of derivatives

ertise Sponsorship Thought leadership Progress Community Sessional Meetings Education Working parties Volunteering Research Shaping the future Networking Professional support Enterprise and risk Learned society Opportunity International profile Journals Suppor

The objective

- To make the funding ratio go up as fast as possible while wobbling as little as possible



Source: Russell Investments, for illustrative purposes only

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Risk premia- drivers of the funding ratio

Matching portfolio
- Interest rates
- Inflation
- Mortality

Growth portfolio
- Credit
- Equity
- "Alternatives"

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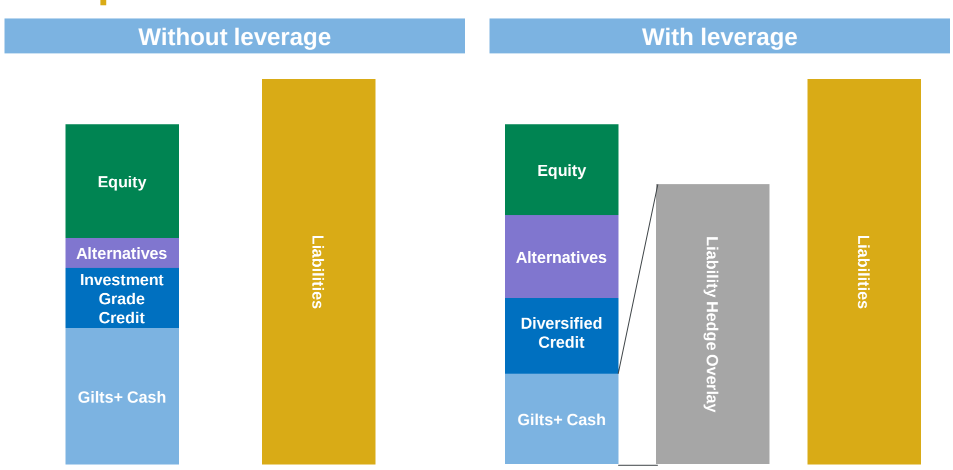
Two pension schemes



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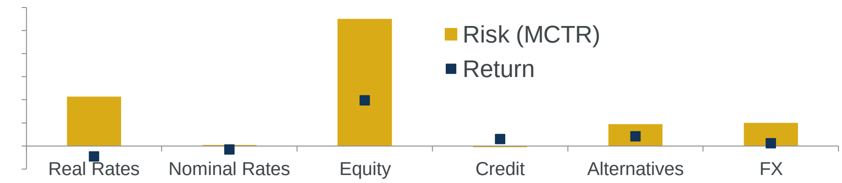
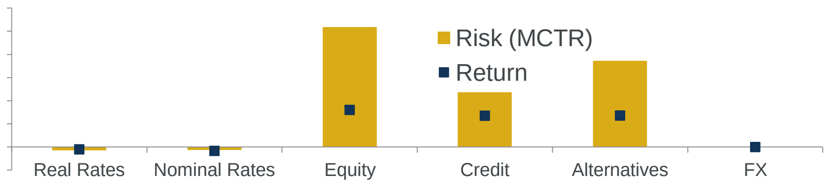
Balancing risk and return

Without leverage



With leverage



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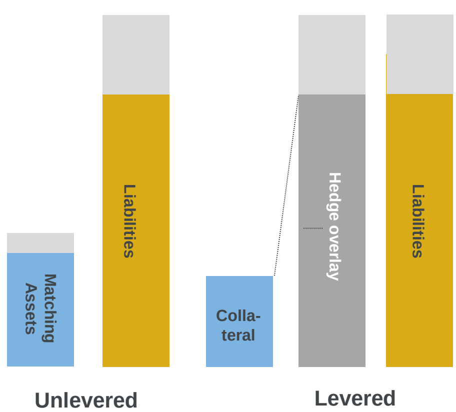
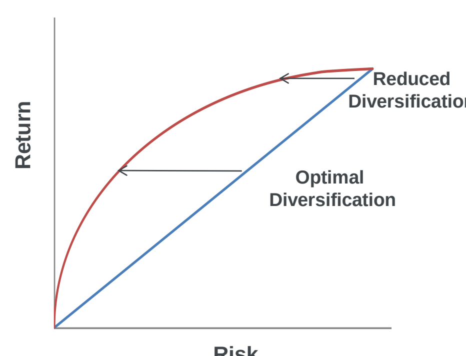
Enhancing portfolio construction

Levered vs. Unlevered hedging



Growth portfolio construction



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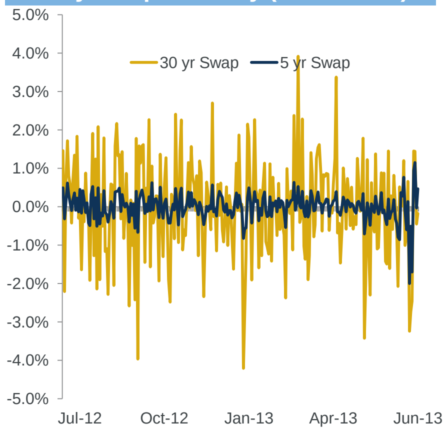
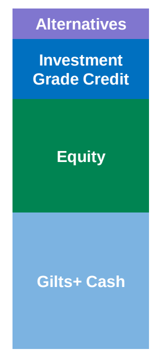
How much leverage? How much liquidity?

Daily Swap Volatility (2 x levered)



A ladder of liquidity



Source: Barclays, for illustrative purposes only

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Strategic use of equity options

- Borrowing cash to buy equity, will overtime realise the equity risk premia: Cash + 4%
- Equity futures are economically equivalent to borrowing cash to buy equity
- Equity options provide delta and volatility adjusted exposure to the equity risk premia

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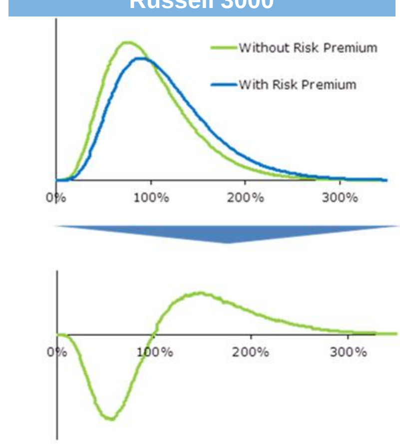

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Tactical example

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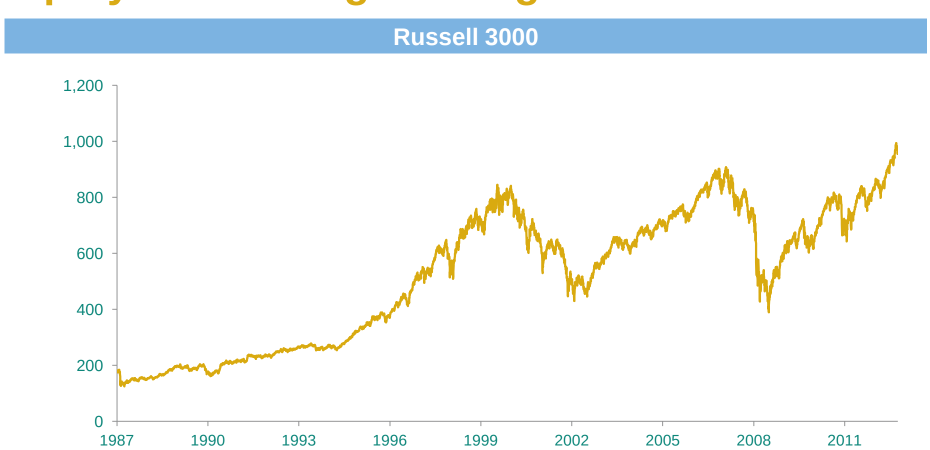
Equity – Reaching new highs



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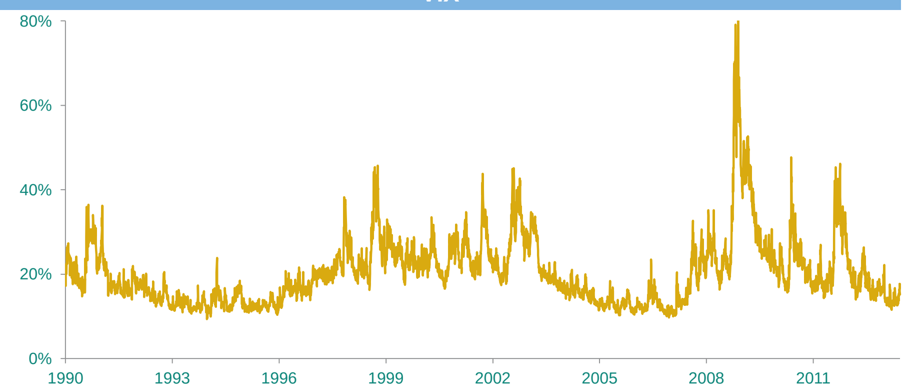
Option Cost



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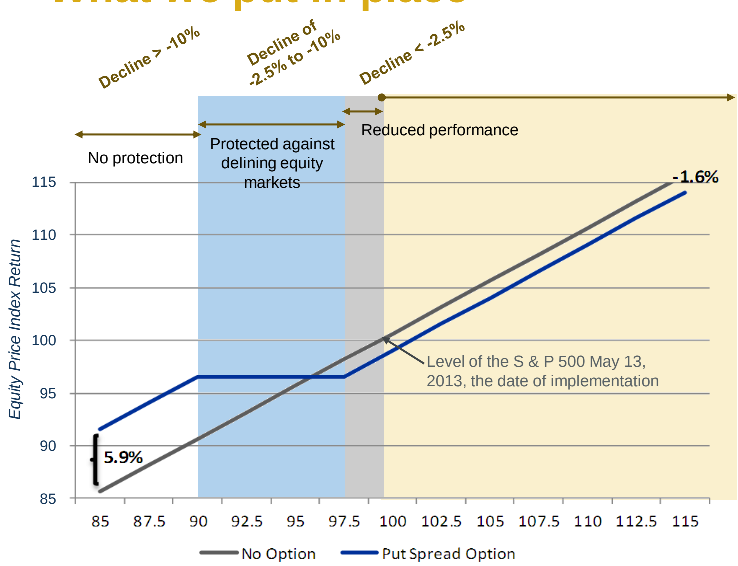
What we put in place



- Protect our portfolio
  - From **realistic risks**
  - Not black swans
  - protection for a downside between **-2.5% and -10%**
  - While keeping exposure to upside

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Questions Comments

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

The views expressed in this presentation are those of the presenter.

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