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Derivatives: a practical guide for users

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8 July 2013

Agenda

- Introduction to derivatives
- How they are used
- Some examples
- Regulatory issues for insurers
- Practical issues and implementation

Simon Richards
Head of Insurance Solutions, Insight Investment

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Introduction to derivatives

What is a financial derivative?

- *A derivative is a financial instrument which derives its value from the value of an underlying entity such as an asset, an index, or an interest rate*
- *Financial derivatives include a variety of contracts including swaps, futures and options*

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How are derivatives used?

At the simplest level:

1. To create a “synthetic” exposure to an asset rather than purchase the underlying asset

Examples of strategies for gaining exposure to an asset:

- Futures contracts
- Total return swaps

2. To manage exposure to a specific asset or risk

Examples of exposure management strategies:

- Equity options
- Interest rate swaps
- Inflation swaps
- Currency forwards

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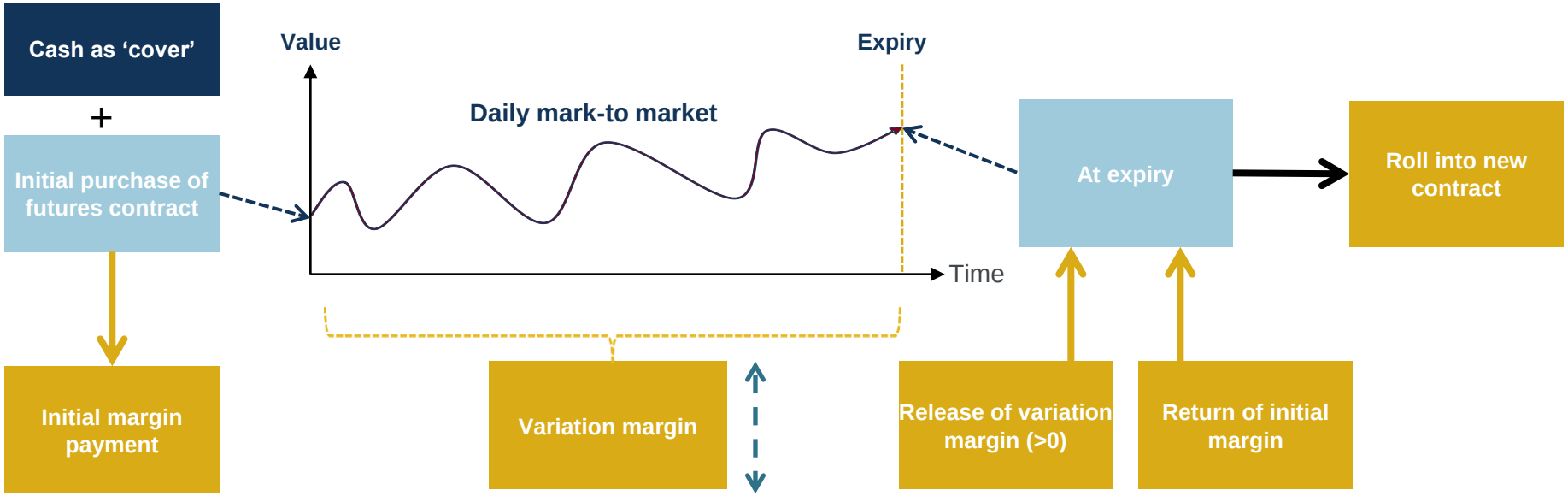
Some examples
Equity futures exposure

An equity futures contract can be used to achieve exposure to an equity market index

- For a portfolio seeking market beta (rather than trying to outperform the index), this approach is likely to be significantly more efficient than purchasing the underlying assets (which would require frequent rebalancing of the underlying components)



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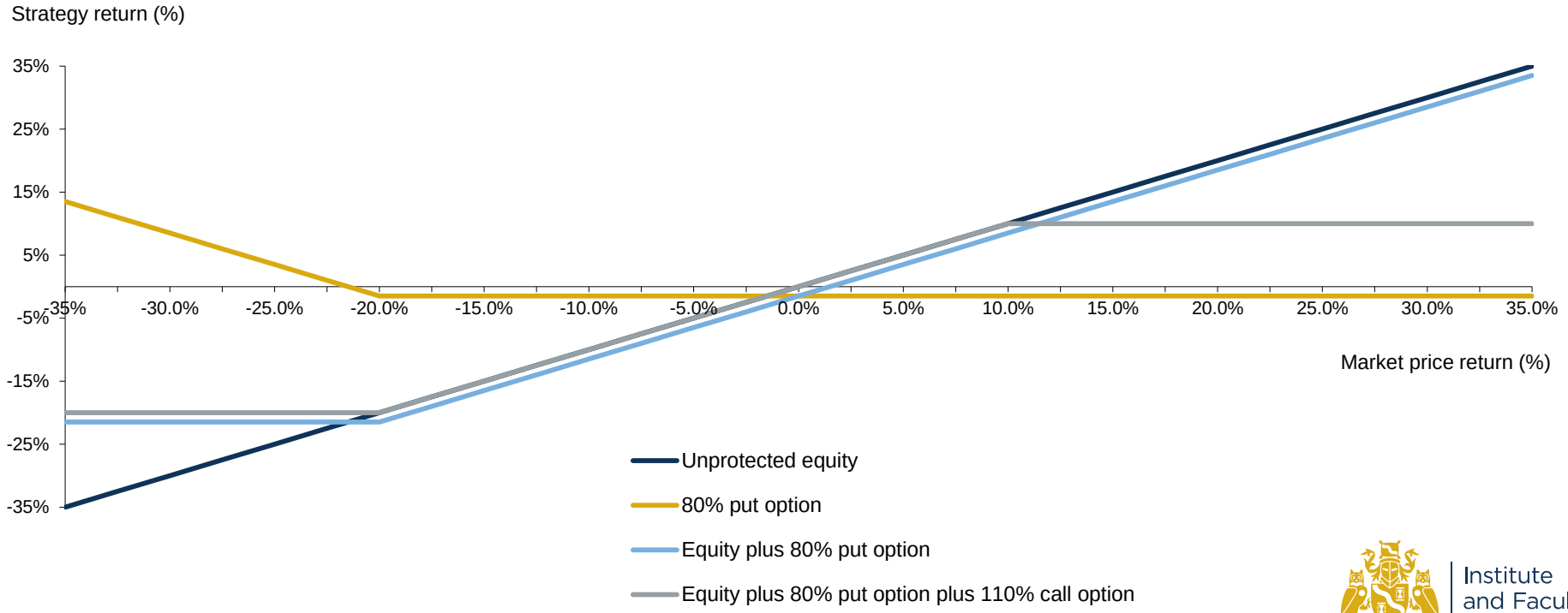
Some examples
Equity protection strategies

- Equity put options allow an Insurer to protect itself against market falls below a certain level
- This floor can be set to provide economic protection or regulatory protection
- The purchase of options ‘insurance’ requires a payment up-front from the Insurer. Often this is funded by selling call options (giving away upside exposure beyond a certain level)



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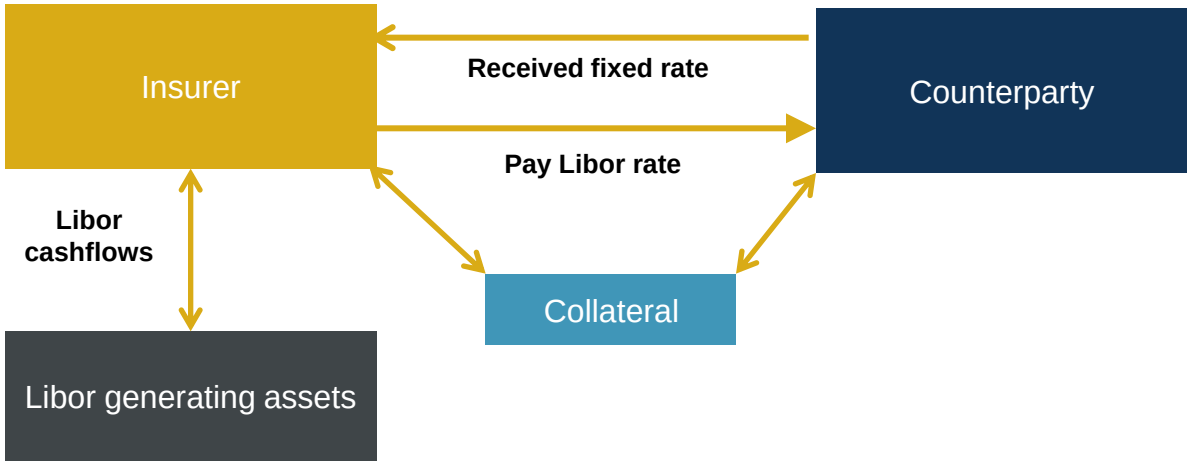
Some examples
Interest rate risk management

- Interest rate swaps can be used to mitigate the impact of changes to interest rates
- Note that some basis risk remains as liabilities may be discounted at gilt-based rates whereas the swap is sensitive to swap rates



Counterparty risk is managed through collateral:

- At time zero, the mid-market value of the swap is zero
- As the mtm of the swap changes collateral is passed to or from the counterparty
- Collateral movements are often subject to a threshold and a minimum transfer amount
- Gilt and cash is the only acceptable collateral for a 'clean' CSA

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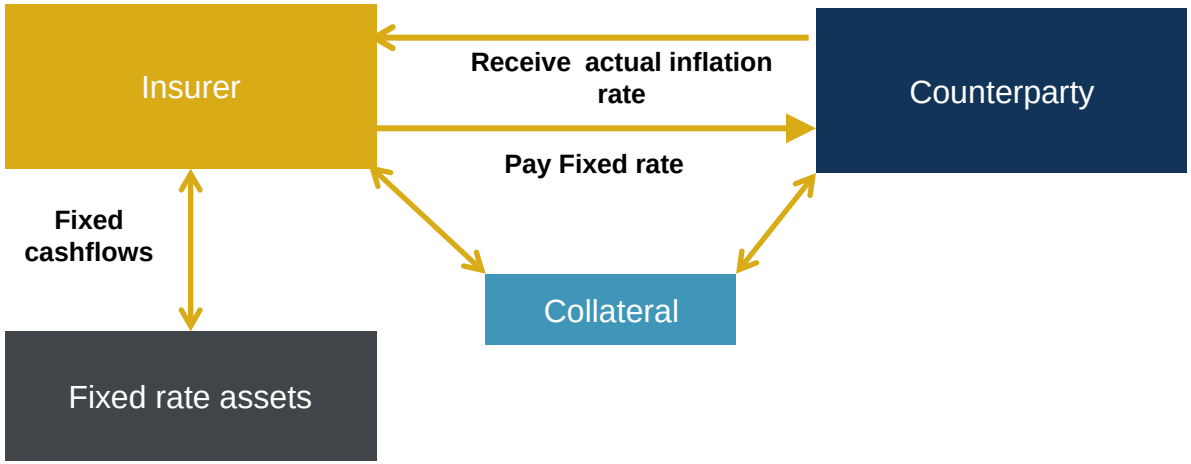
Some examples
Inflation risk management

- Inflation swaps can be used to mitigate the impact of changes in future levels of inflation
- An insurer might use an inflation swap in conjunction with a corporate bond to create a synthetic inflation-linked bond



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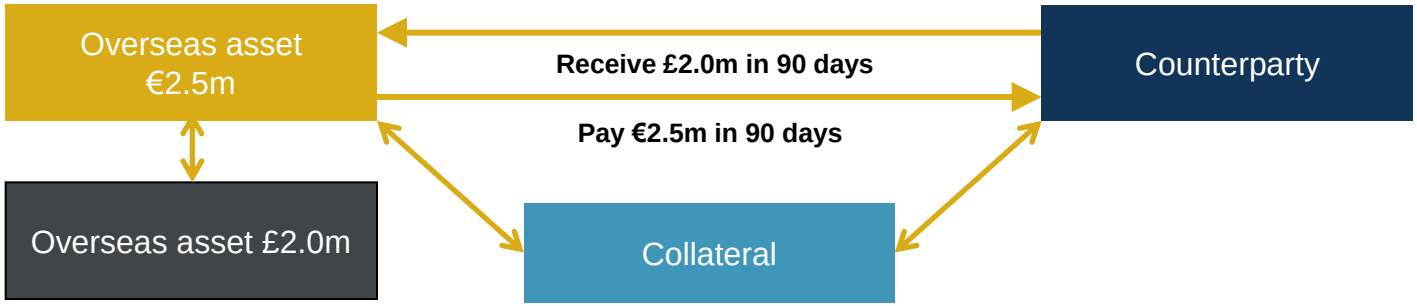
Some examples
Managing currency risk

- Forward FX hedges can be used to mitigate currency risk on overseas investments
- Typically forward FX positions have 90-day maturities and are rolled into the future as longer-dated hedges are illiquid and expensive (or unavailable)



- A forward FX contract is used to hedge the value of the overseas investment – in this case we assume a forward exchange rate of £1 = €1.25. For simplicity, assume that this is also the current spot rate.
- In 90 days, if the spot exchange rate has increased to £1 = €1.5
  - The asset has reduced in value to 2.5m / 1.5 = £1.67m
  - The FX contract results in a gain of 2.0 - 2.5 / 1.5 = £0.33m

  Total = £2m
- In 90 days, if the spot exchange rate has reduced to £1 = €1.0
  - The asset has increased in value to 2.5m / 1.0 = £2.5m
  - The FX contract results in a loss of 2.0 - 2.5 / 1.0 = -£0.5m

  Total = £2m

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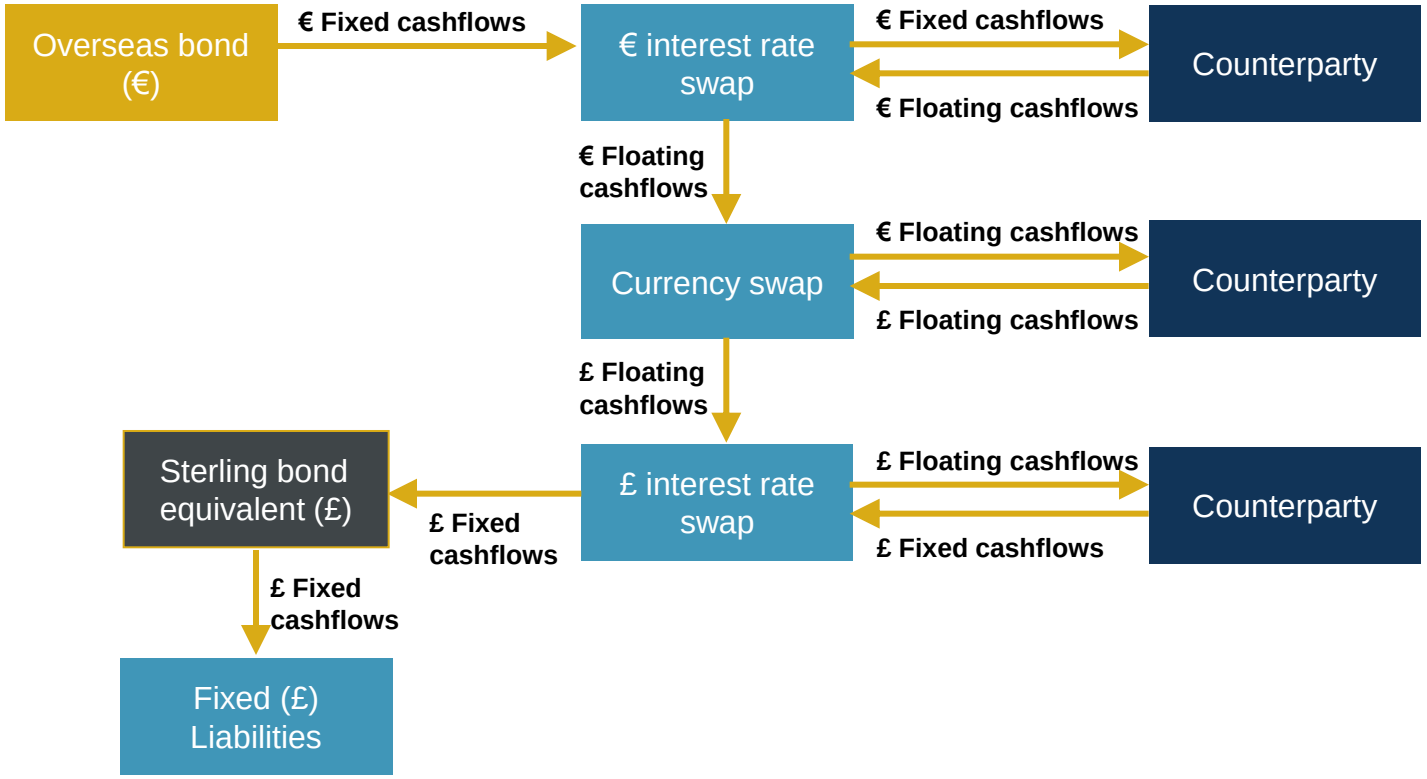
Some examples
Managing global bond risks

- Insurers seeking to add diversification to a fixed income portfolio can utilise overseas bonds and hedge back the key risks (interest rates and currency fluctuations) to sterling using derivatives
- Overseas bonds offer the opportunity for different issuers, different types of exposures and often more attractive yields from existing issuers



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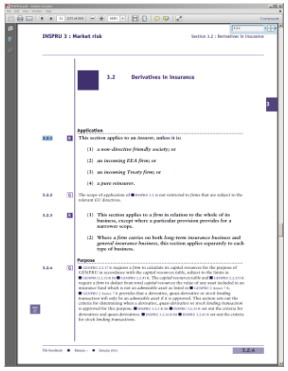
Regulatory issues for Insurers

When are Insurers permitted to use derivatives?

Admissibility (INSPRU 3.2)



At the simplest level:

- To effect a “synthetic” exposure to an asset or to mitigate the adverse performance of an asset

  Consistent with the requirements of INSPRU for ‘efficient portfolio management’ or ‘reduction of investment risk’

What are the additional requirements?

- The derivative must be ‘covered’

  This restricts leverage, aims to ensure that the Insurer can meet their liabilities under the derivative contract

- Traded on a regulated market

  Exchange traded derivatives – market has appropriate safeguards to mitigate counterparty risk etc

OR

- Traded with an approved counterparty

  Over-the-counter (OTC) transactions – ability to value the contract on an on-going basis and close out in the market

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Regulatory issues for Insurers

European Market Infrastructure Regulation (EMIR)

G20 commitment

- *"All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at latest*
- *OTC derivatives contracts should be reported to trade repositories*
- *Non-centrally cleared contracts should be subject to higher capital requirements"*

Mandatory clearing

- Requirement to clear certain derivative transactions

Reporting

- Report all derivative contracts to Trade Repositories

New non-cleared requirements

- Increased collateral requirements
- May need to post initial margin as well as variation margin

Introduction to derivatives
EMIR

European Market Infrastructure Regulation (EMIR):

- Certain derivatives will need to be cleared on a recognised exchange

  Currently just interest rate swaps and CDS

- Initial margin will be due when a derivatives contract is entered into

  This must be in Gilts or cash only

- Variation margin will be due (or received) as the mark-to-market varies over time

  This must be in cash only

- Derivative trades must be reported to a Trade repository

  The asset manager or counterparty bank will normally produce the required reporting

- Separately identifiable pensions business of insurers gains a temporary exemption from the central clearing aspects of EMIR (the same as for DB pension schemes)

  The application process for the exemption is currently being finalised

Introduction to derivatives
Solvency II

- Derivatives can be used for managing exposures
- Admissibility rules no longer relevant
- Derivatives can only be treated as risk mitigation instruments (and hence be used to reduce capital requirements) if:
    - the basis risk is not material compared to the mitigation effect
    - Where this is not the case, additional capital will be required

Introduction to derivatives

Summary:

- Derivatives can be used to gain synthetic exposure to an asset or to manage exposure to an existing holding
- Examples of derivatives include futures, swaps and options
- Derivatives usage can produce counterparty exposure which needs to be managed – holding collateral can help to mitigate these risks
- For insurers, admissibility rules may provide some restrictions on the nature and type of derivatives than can be held. Solvency II will provide credit for appropriate derivative hedges
- EMIR will change the way derivatives are traded and may impact how derivatives are used by insurers and pension funds

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Introduction to derivatives

When are the practical issues and potential pitfalls for Insurers?

Once you have:

- Understood the nature and purpose of the proposed derivatives strategy (and how this meets your investment objectives)
- Understood the potential costs / risks
- Confirmed the regulatory treatment

"You bring up an important concern, but I'm looking for a problem that better fits my preconceived solution."

Next step is to:

- *Understand the practical issues that arise from the proposed strategy*

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- Practical issues and implementation
  - What are we trying to achieve?
  - Understanding the proposed strategy
  - How does this apply to **our** business?
  - Understanding the risks and benefits
  - Obtaining buy-in from key stakeholders

Graeme McAusland
Group Finance Director, Foresters

When are the practical issues and potential pitfalls for Insurers?

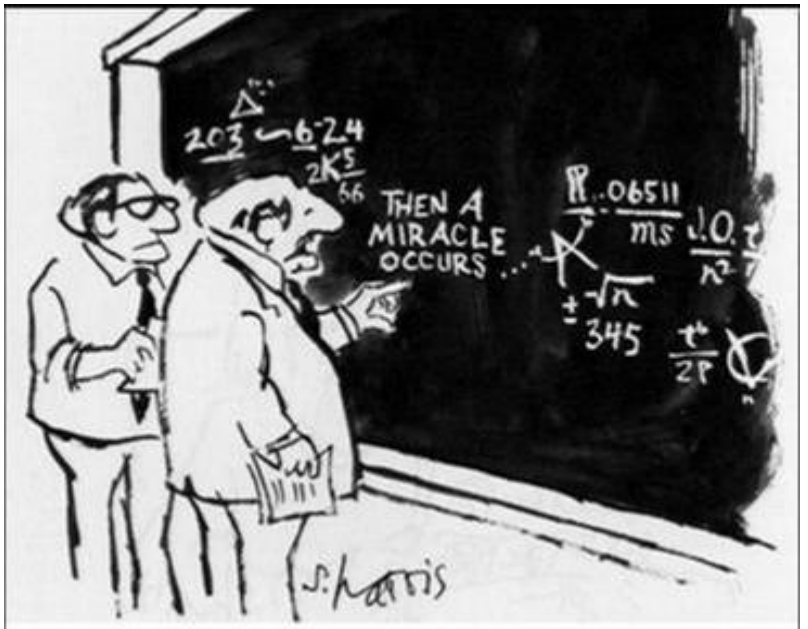
Background:

Previous 'traditional' approach:		New "LDI" approach:
• Assets managed on an aggregate basis using core segregated equity and fixed income portfolios	→	• Separate investment strategies for assets against held to match guaranteed liabilities compared to assets for discretionary benefits
• Property and emerging markets exposures held for diversification	→	• Significant diversification achieved synthetically, using funds and using physical assets
• Little use of derivatives	→	• Extensive use of derivatives
• Closure to new business required a change of focus for the investment strategy	→	• Reduced balance sheet volatility • Strong focus on liquidity management

When are the practical issues and potential pitfalls for Insurers?

Understanding the new strategy

- Do the board and investment committee fully understand what is being proposed?
- What due diligence is required for all stakeholders to become comfortable with suitability of the new approach?
- What are the main implications for different areas of the business?
- What education sessions are required for all parties to understand the new instrument types that are being used?

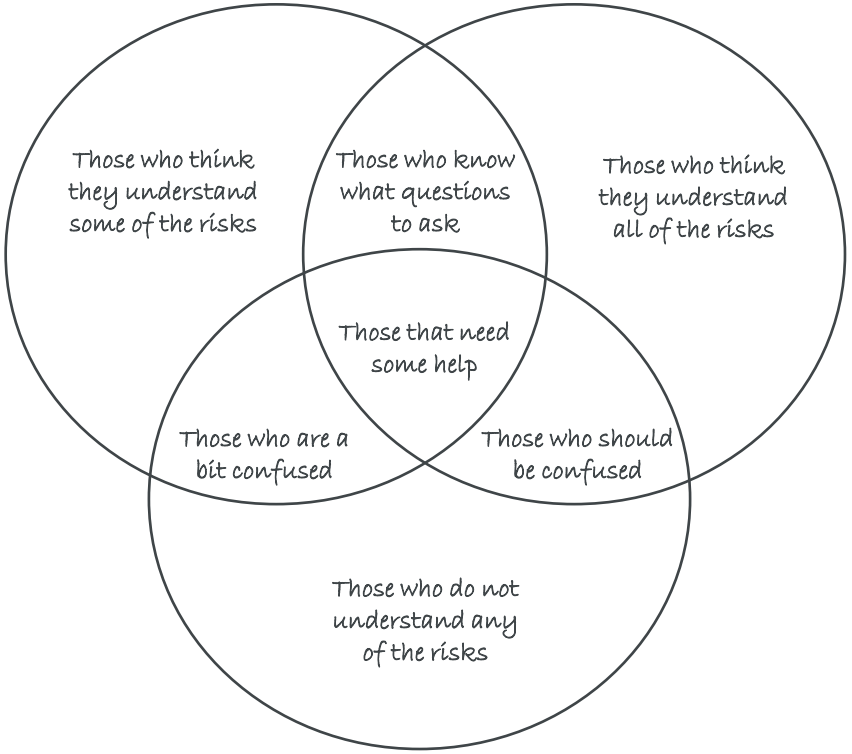


"I think you should be more explicit here in step two."

When are the practical issues and potential pitfalls for Insurers?

Understanding the risks

- Do we understand the strategy that Insight are proposing?
- Do Insight understand have the expertise to manage this type of strategy:
  - What are their asset management capabilities?
  - How robust are their risk management processes?
  - What safeguards are in place?
  - Do they understand the liabilities and regulatory environment?
- What are the key residual risks?



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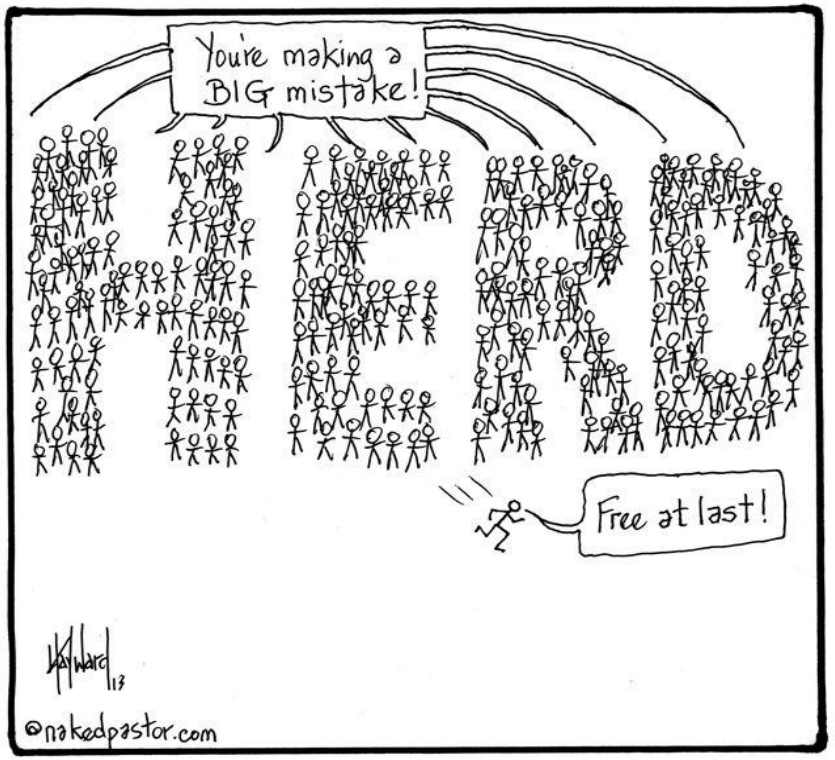
When are the practical issues and potential pitfalls for Insurers?

Other risks

- How do we communicate the strategy to policyholders?
- What are the key risks of moving away from the traditional approach?
- What if, despite all best efforts, something goes wrong?



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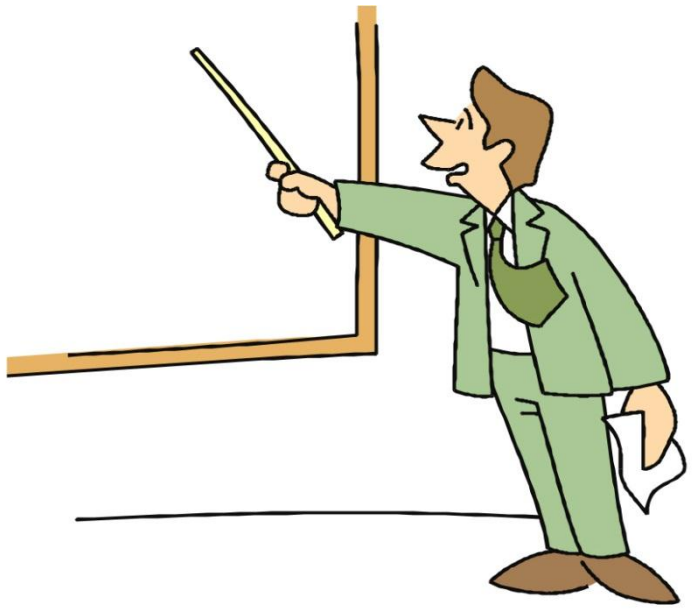
When are the practical issues and potential pitfalls for Insurers?

Educating the stakeholders and obtaining buy-in

- Series of educational workshops for affected parties:
  - Board / Investment Committee
  - Actuarial team
  - External Investment management accounting provider
  - Internal Compliance
  - External Auditor



When are the practical issues and potential pitfalls for Insurers?

Reporting

- Need for new management information reports given the complex nature of the new strategy:
    - Asset-Liability matching profiles
    - Summary of key asset exposures
    - Key derivative exposures (and counterparty risks)
- Detailed asset data provided to actuarial team on a monthly basis:
    - Full transparency of exposures
    - Including look through for pooled funds
- Ad hoc discussions as market views and discretionary assets were updated

When are the practical issues and potential pitfalls for Insurers?

Summary:

- **Be clear on your objectives**
- **Find the right people to work with - either in-house or a specialist external manager**
- **Ensure you've got the link between the assets and the liabilities correct (i.e. between the investment professionals and the actuaries)**
- **Ensure your governance arrangements are appropriate and the communication / education of the governance committee is sufficiently robust**
- **Spend time with other interested third parties and stakeholders to buy them into what you are doing and how it will impact them**

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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