Pension Protection Fund

Unfunded Hedging Strategies: Some Practical Lessons for Asset Owners

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Agenda

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Protection
Fund

1. The PPF and its investment strategy
2. Liquidity risk
3. Diversifying fund manager risk
4. Counterparty Risk

The PPF

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Fund

Who are we?

- Public corporation with an independent Board
- Unique organisation within the UK (analogous to Pension Benefit Guaranty Corporation)
- Established in 2005
- A pension fund – or an insurer?

What do we do?

- Pay compensation to members where the corporate sponsor has failed and the defined benefit pension scheme has insufficient assets
- Some reductions apply to scheme benefits:
  - 90% of scheme benefits if under normal pension age
  - Cap of around $55,000
  - Possible loss of pension increases
  - Large part of pensions in payment indexed to CPI capped at 2.5%
  - Pensions in deferment increase in line with CPI capped at 5%
- Over 150,000 existing members
- Around 12 million people protected by us within DB schemes in the UK

The PPF investment Strategy:

The current PPF investment strategy seeks to outperform the replicating portfolio through a largely unfunded hedge overlaying a diversified growth portfolio

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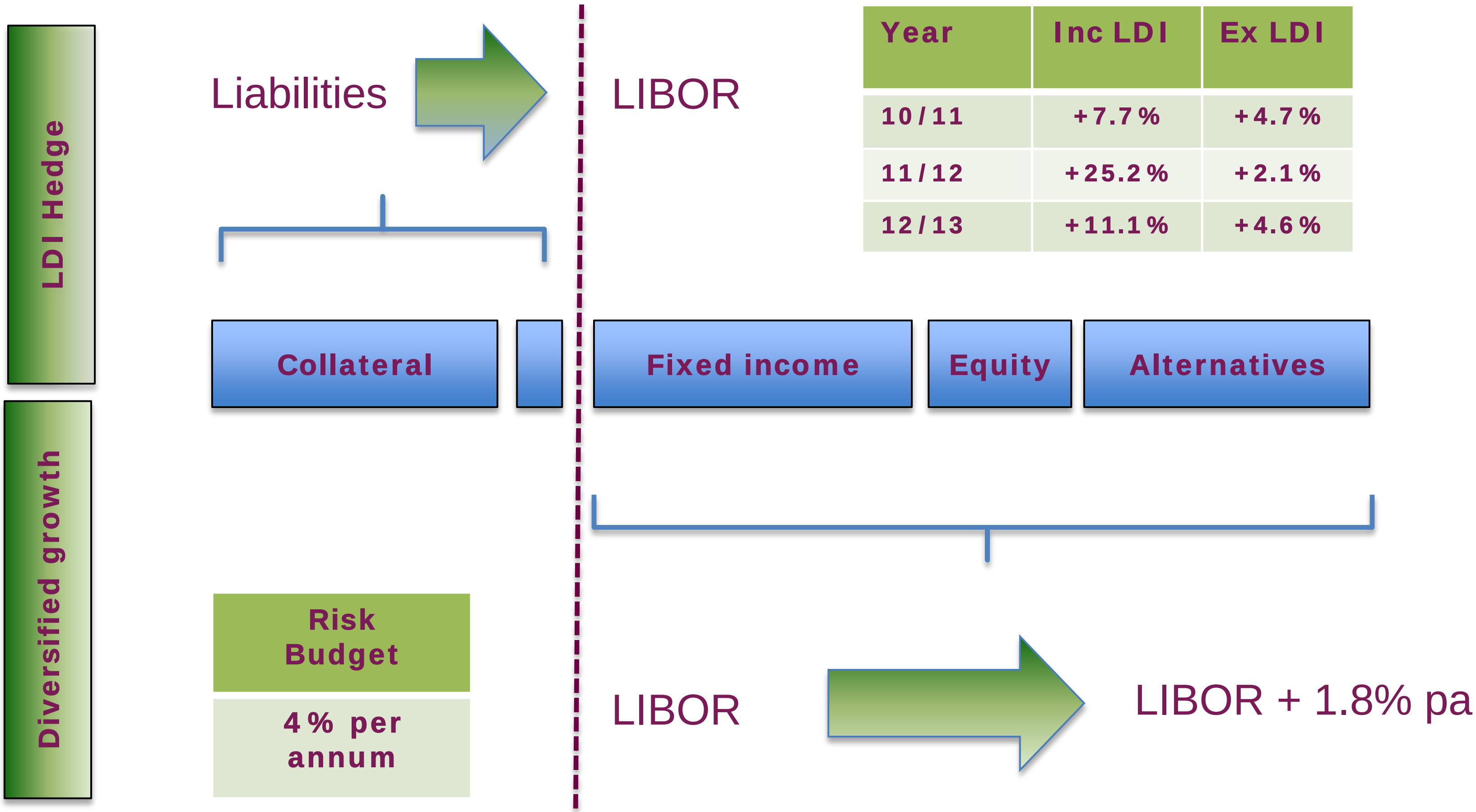

Year	Inc LDI	Ex LDI
10/11	+7.7%	+4.7%
11/12	+25.2%	+2.1%
12/13	+11.1%	+4.6%

Managing liquidity risk (1): Risk of collateral exhaustion

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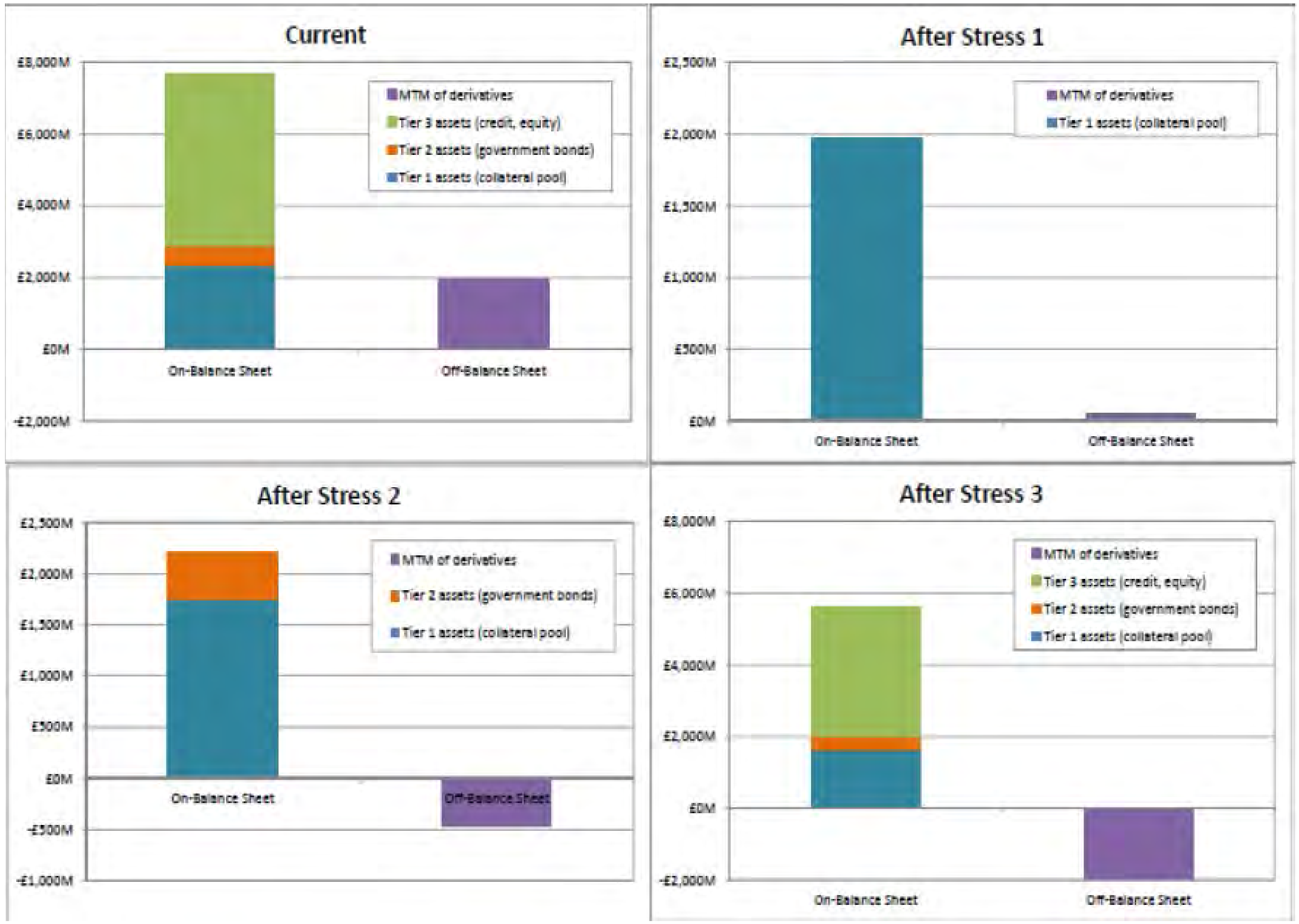
- Liquid assets in 3 tiers
- 3 levels of stress test
- If 1 stress test fails an action plan to deleverage is put in place



Managing liquidity risk (2): Managing Repo Roll Risk

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1. **Prevention**: Investment restrictions to mitigate the impact of a crisis:
   - Overall exposure limit
   - Minimum dispersion of repo maturities
   - Minimum cash buffer to allow unwinding without selling the Gilts that are pledged.
2. **Monitoring** of the liquidity of the market continuously leading to a rating of the liquidity of the market (Red/Amber/Green)
3. **Action plan** triggered by an Amber or Red rating to deleverage the portfolio

Diversifying Fund Manager Risk- Overview

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PPF Objectives:

The purpose of the project was to implement a second LDI manager, bearing in mind the following objectives:

- Operationally at least as efficient as existing structure
- Reduced dependence on the existing manager
- Creation of a ‘live sub’
- Increased transparency and visibility of the LDI strategy

Strategic Importance of the incumbent LDI manager relationship:

- Hedging interest rate and inflation sensitivity in liabilities
- Already very large (and growing) liability profile
- Implementation of the tactical views of the PPF using derivatives
- Providing curve data for valuation purposes by Actuarial team

Diversifying Fund Manager Risk - Constructing the Liability Benchmark (and dividing between two managers)

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1. Actuarial Liability Cashflows

   Projected Liability Cashflows

   Capped and Floored CPI Linked Liabilities and Fixed Liabilities

2. Total Liability Benchmark

   Total Liability benchmark

   RPI and Fixed Cashflows

3. Account for Sensitivity of Other Assets

   Passive bonds

   Directed trades

   Other hedging assets

4. Target Liability Benchmark

   Target Liability Benchmark

   Cashflow benchmark RPI linked and Fixed

5. Pro-Rata Split Between 2 LDI Managers

   Manager A

   Manager B

Diversifying Fund Manager Risk - One Bilateral ISDA/CSA per Counterparty, Central Collateral Management

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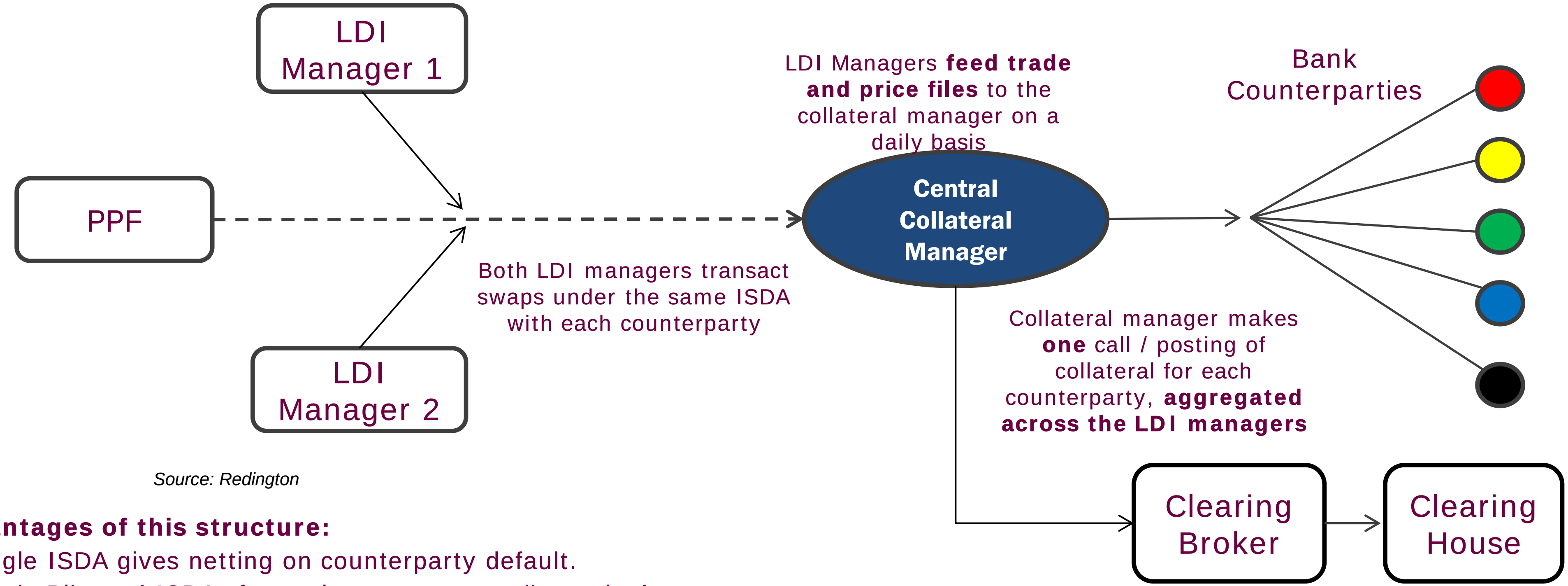

Source: Redington

Advantages of this structure:

- Single ISDA gives netting on counterparty default.
- Single Bilateral ISDAs for each counterparty allows single CSAs for each counterparty.
- Bilateral CSA gives daily netting of mark to market exposure to a swap counterparty.
- Ability to include additional investment managers in the structure.
- Additional transparency and control over collateral management.

Disadvantages of this structure:

- Longer time and cost to negotiate ISDAs.
- Requires trades from existing umbrella ISDAs to be moved to the new ISDA; there is a potential cost if this requires changes to CSA terms.
- Time and cost to implement central collateral management structure.
- LDI manager is one step removed from the collateral process.

Managing counterparty risk with 2 LDI managers

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- **Prevention**
  - Negotiation of fair bilateral ISDA and GMRA agreements with efficient Additional Termination Event terms to allow a wider Jump-to-default window or Independent Amount for BBB rated counterparties
  - Efficient collateralisation with netting across the board
  - Transparency in pricing: ‘Dirty to Clean CSAs’
  - Dispersion of exposure
- **On-going Monitoring** of counterparties and active management of relationship with counterparties
- **Contingency plans**
  - In case of downgrade
  - In case of jump to default