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Optimising ALM for PPOs in a SII environment

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24 September 2014

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Agenda

- Introduction to PPOs
- Matching Adjustment
- Investment Opportunities
- ALM considerations
  - Broad considerations
  - Inflation hedging
  - Longevity and mortality hedging

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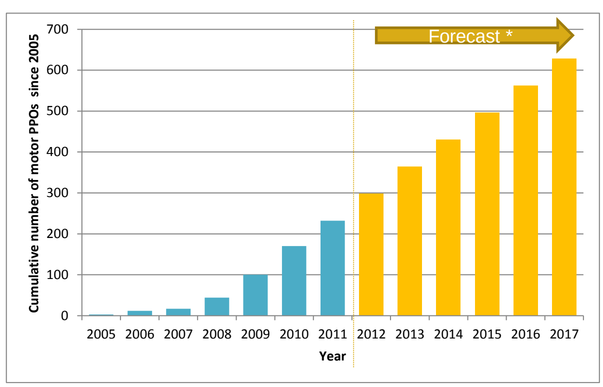
Introduction to PPOs

PPOs settlement over the years

- Periodic Payment Orders (PPOs) are now more commonly used to settle catastrophic personal injury claims in the UK
- The average size of the remaining elements currently of an agreed PPO is around £2m-£3m. Based on this figure, reserves for settled PPOs are estimated to around £0.6bn.
- The total size of the PPO reserves (including IBNR) in the market is approximately £3bn (assuming approx 10% of the total UK motor insurance reserves)



*Note: incremental projected numbers are based on an average of numbers of PPOs settled in 2010 and 2011.

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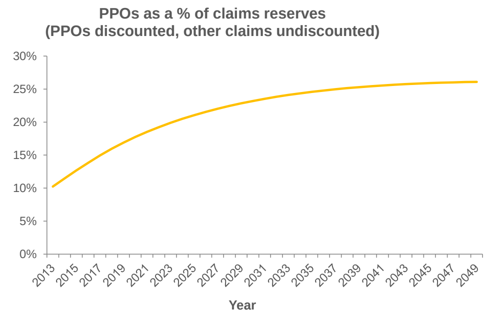
PPO share of reserves will continue to grow

- As PPOs are agreed in each future year the share of reserves related to PPOs (including those in payment) will continue to grow
- A large share of the reserves will then become annuity reserves with more similarities to life company balance sheets – need to learn the lessons from these companies
- Eventually a “steady state” position is likely to be reached as can be seen from the diagram
- The size of PPO reserves is expected to reach **between £5bn and £10bn** eventually (in current money terms)



Key assumptions:
- PPO propensity: 35%
- ASHE: 3.0%
- Discount rate: 2.5%
- Average life expectancy: 40 years
- Years when PPO settlements start: 5

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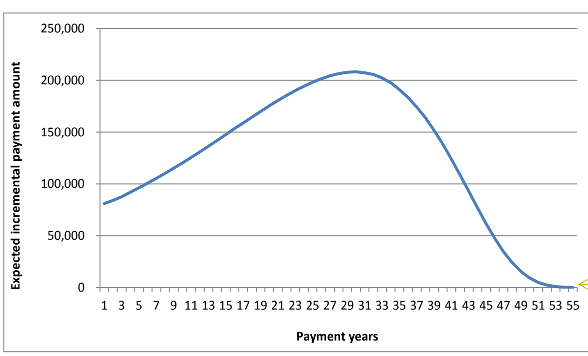
Cash flows

- The following graph shows the expected PPO cash flows weighted by the mortality rates:



Key assumptions:

Average age at settlement: 35
Annual PPO payment: £78,202
ASHE = RPI + 1%

Source: 2012 PPO working party

Note: no lump sum at end of life

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Assumptions which influence PPO reserves – all uncertain

	Uncertainties	Impact on PPOs	
		Agreed	Future
Propensity	• Currently appears relatively stable after original increasing trend. • Could be impacted by future court initiatives	No	Yes
Mortality	• Very little experience to date to determine future assumptions. • Unclear how much impairment to mortality exists. • Small population of claims so variability high.	Yes	Yes
Indexation of PPO	• Relatively little history of ASHE index used. • Link to RPI is uncertain	Yes	Yes
Discount rate	• Risk free or based on assets held? • Hard to reliably match with the other uncertainties	Yes	Yes

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The matching adjustment

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Solvency II – matching adjustment

- "*Insurance and reinsurance undertakings may apply a matching* ***adjustment****…*

L i a b s

- *"(d) the contracts underlying the portfolio of insurance or reinsurance obligations do not give rise to future premium payments;*
- *(e) the only underwriting risks connected to the portfolio of insurance or reinsurance obligations are longevity risk, expense risk, revision risk and mortality risk;"*
- *(g) the contracts underlying the portfolio of insurance or reinsurance obligations include no options for the policy* ***holder****…"*

A s s e t s

- *(a) the insurance or reinsurance undertaking has assigned a portfolio of assets, consisting of bonds and other assets with similar cash-flow characteristics,*
- *(b) …* ***assets*** *are identified, organised and managed separately from other activities of the* ***undertakings****…*
- *(h) the cash flows of the assigned portfolio of assets are fixed and cannot be changed by the issuers of the assets or any third* ***parties****…*
  except for a dependence on ***inflation****…*

** Taken from latest Level 1 directive Article 77b*

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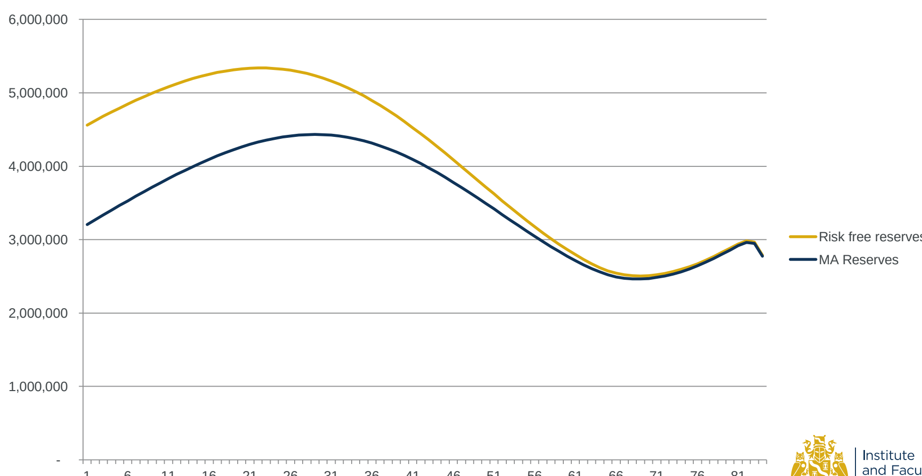
So I can have a MA- do I want it?!



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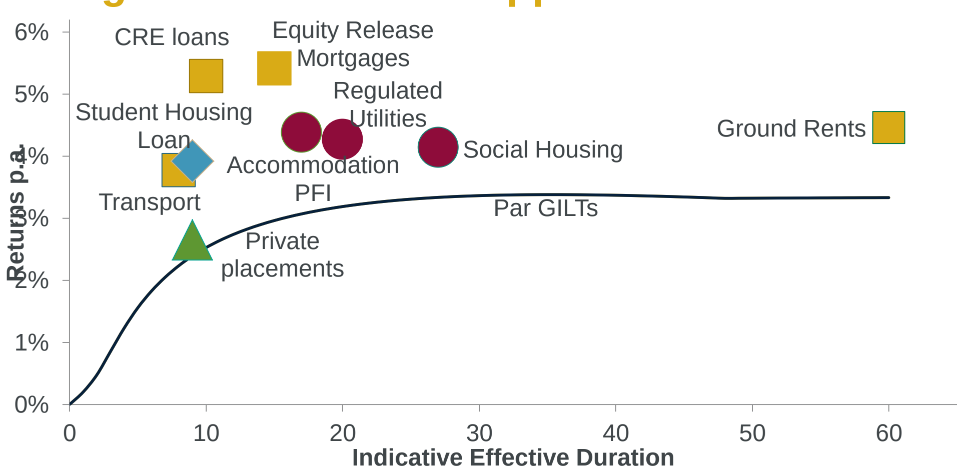
Investment opportunities

Long term investment opportunities



As of 31 March 2014. SOURCE: Institute of Actuaries Non-Traditional Working Party, PIMCO
Refer to Appendix for additional investment strategy, issuer and risk information

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But these assets aren't as easy to manage…

- Key considerations?
  - Set criteria for viewings
  - Current condition vs. personal value
  - Due diligence / lawyers
  - Surveyors
  - Exchange and completion
  - Redecoration
  - Future sale
  - Leasehold / Freehold
  - Ongoing maintenance
  - Rates and taxes
  - Managing agents

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Potential ALM challenges

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Broad hedging considerations

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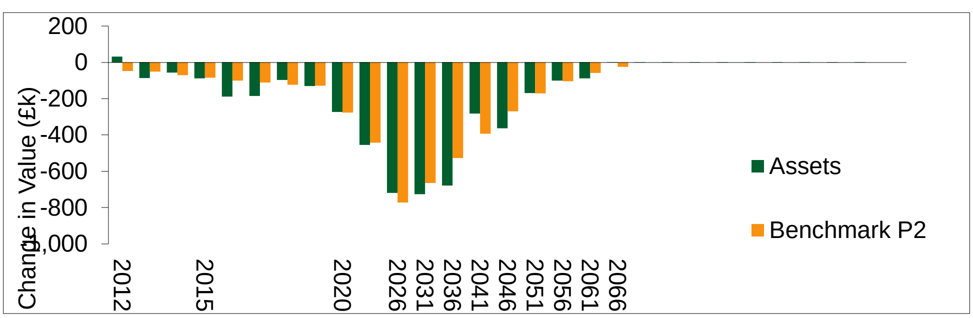
Delta hedging – pros and cons



Pros

- Cost
- Generally well understood
- Works well for small movements

Cons

- Generally poor match for complex movements (i.e. large parallel shifts / twists / steepening / flattening)

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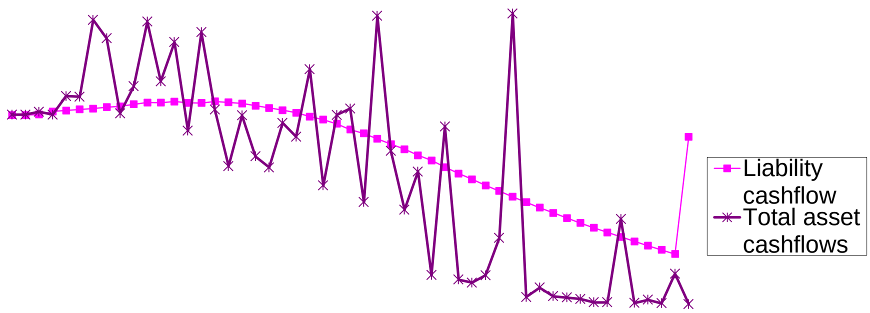
Cashflow matching- pros and cons



Pros

- Very sophisticated hedge
- Matches complex movements well

Cons

- Expensive to maintain
- Requires significant rebalance upon assumption changes

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Inflation hedging

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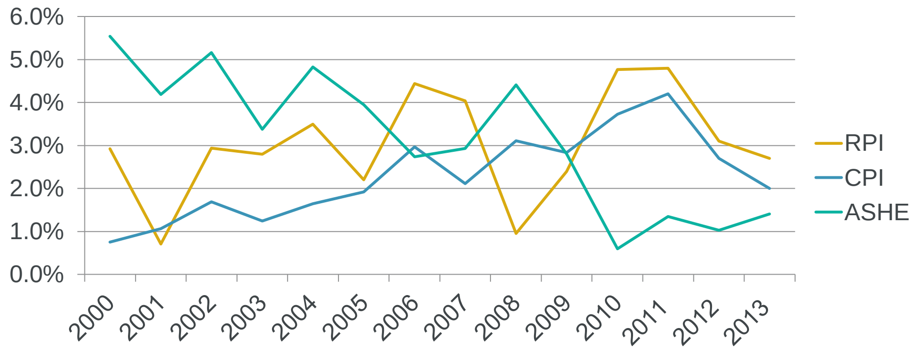
Inflation



- ASHE not positively correlated with RPI (or CPI) over the observation period
- However, an RPI inflation hedge would leave a 1.5% deficit compared to 54% if unhedged

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Inflation hedging

- Key considerations for hedging:
  - Leave unhedged (and be exposed to significant uplift in benefits as per previous graph)
  - Hedge with RPI swaps – poor correlation (even some evidence of negative correlation) but over the long term provides reasonable level of protection
  - Hedge with RPI linked gilts – tend to be more flexible to supply and demand drivers from pension funds but should theoretically provide a similar hedge to RPI swaps
  - Purchase bespoke ASHE hedge (if available). For illiquid inflation hedges (e.g. CPI and LPI), bank charges tend to be very significant

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Longevity & mortality hedging

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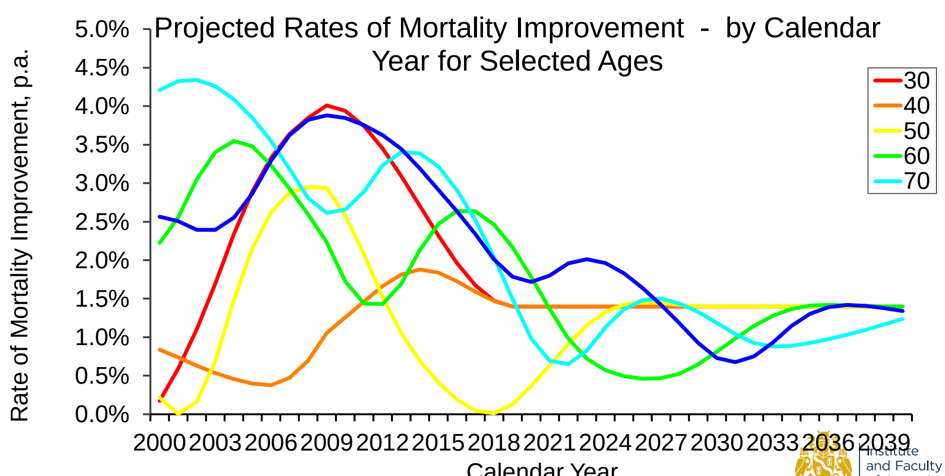
Longevity risk



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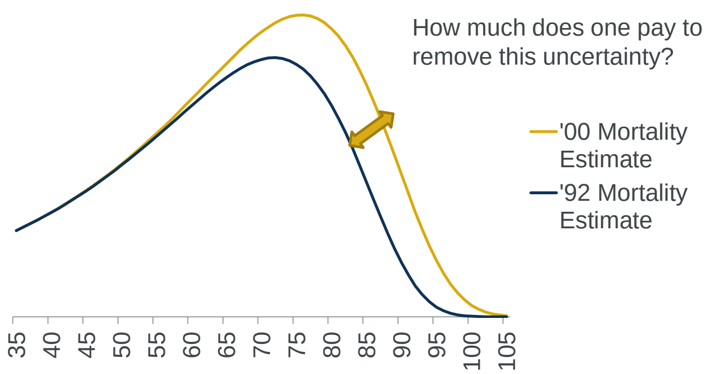
Impact of longevity reinsurance on ALM



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.