The Actuarial Profession
making financial sense of the future

GIRO 2011
Mark Cockroft (Novae Re) & Sarah MacDonnell (Towers Watson)

PPO Working Party Update

Liverpool; October 13, 2011

Presentation agenda

- Best estimate reserving and Solvency II impact
- Industry claims pool?
- Industry survey results
- Discussion

Other sections in the paper

- Underwriting and pricing for aggregate reinsurance covers, e.g. stop loss XLs
- Role of the FSCS

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Acknowledgements
Working party members

- Anthony Claughton
- Avni Gohil
- Bruce Stocker
- Gary Yeates
- Karl Murphy
- Mark Cockroft (Co-Chair)
- Nathan Williams (Co-Chair)
- Peter Yeates
- Peter Saunders
- Sarah MacDonnell
- Simon Warsop
- Sylvie Le Delliou-Viel

…plus several others we consulted and spoke with

Fair cross-section of the UK motor market:
6 insurers
2 reinsurers
4 consultants

Presentation agenda

- Best estimate reserving and Solvency II impact
- Industry claims pool?
- Industry survey results
- Discussion

Best estimate reserving and Solvency II impact: current practice (or "the obligatory ostrich pic")

Arguing for non-materiality will not suffice in the future if PPOs continue to grow in number. Eventually they will be material to the balance sheet risk.

QIS5 technical specifications: "Annuities stemming from non-life contracts"

- TP.1.13:
  "In particular, annuities stemming from non-life insurance contracts (for example motor vehicle liability insurance) are life insurance obligations"
- TP.2.49 & TP.2.55: *substance* (nature of liability) over *form* (legal form of original contract)
- TP.2.58:
  "…value technical provisions [for annuities] separately from…remaining non-life obligation…should apply appropriate life insurance valuation techniques…consistent with valuation of life insurance annuities with comparable technical features."
- TP.2.63-67: Lump sum reserves allowable in run-off triangles pre-"annuitisation" (i.e. before becoming obligated to pay an annuity)

Timeline of a PPO claim: best estimate reserving

Claim not yet notified: IBNR

Claim notified but not settled, might be a PPO: IBNER

Claim settled as PPO: in payment

Reserving basis

Likelihood of settlement as a PPO

Traditional methods plus load for PPOs not yet in prior year experience	Summary valuations, e.g. Ogden table lump sum assuming reduced (risk-free) discount rate (*)	Life insurance techniques: projected cash flows and discounting (*)

Note (*): See last year's PPO paper for details

Timeline of a PPO claim: Solvency II capital

Claim not yet notified: IBNR

Claim notified but not settled, might be a PPO: IBNER

Claim settled as PPO: in payment

Capital basis

Likelihood of settlement as a PPO

Current S2 methods plus load for PPOs not yet in prior year experience	?	Enhance own model, or apply life insurance standard formula

Solvency capital requirement for life insurance contracts – standard formula

- Reminder: SCR = Basic Solvency Capital Requirement + Op Risk + adjustment for risk-absorbing effect of technical provisions and deferred taxes
- BSCR for life insurance consists of a series of stresses:
  - Market risk (bond spreads, interest rate and term structure, illiquidity premium, etc)
  - Life underwriting risk (mortality/longevity, morbidity, expense overrun, revision risk, etc)
- Op Risk as for non-life but different factors apply
- No discretionary PPO benefits, so TP adjustment assumed to be nil

Presentation agenda

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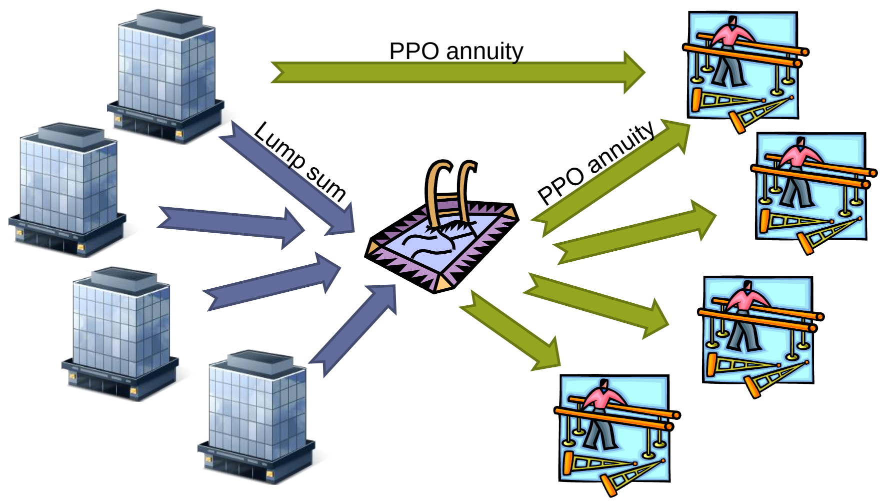
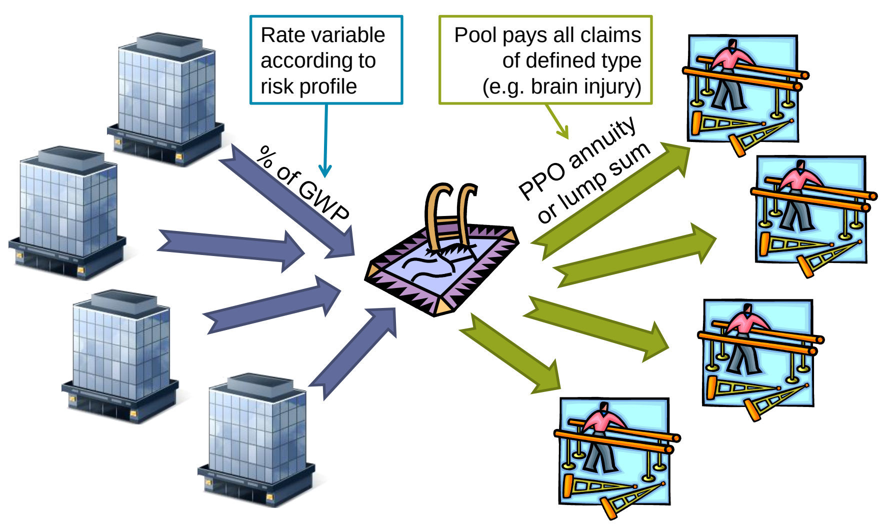
Industry claims pool – separating the insurer from the claimant (after the event)



Industry claims pool – separating the insurer from the claimant (before the event example)



(Some) Pros and cons of an industry claims pool

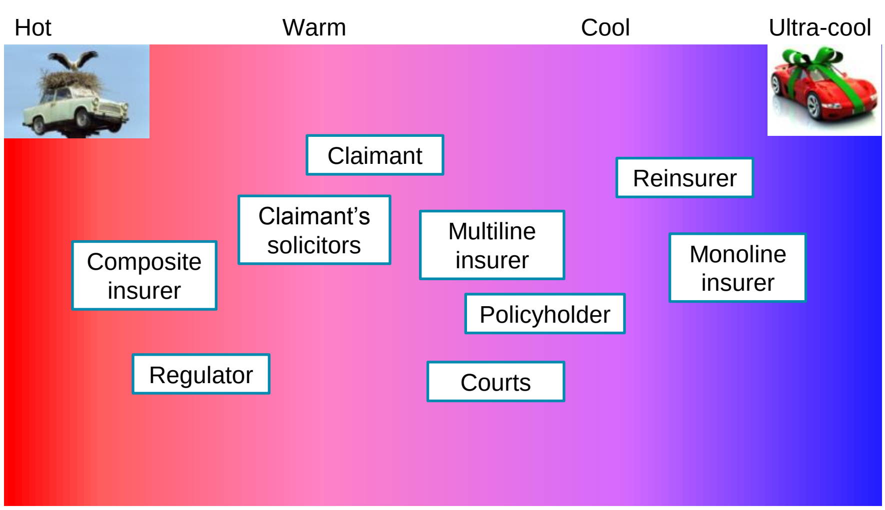
Why?

- Removes very long-tail liability from (re)insurers balance sheets
- Reduces costs by benefits of scale
- Gives capitalisation event for reinsurance claim
- Claimants no longer have to deal with “nasty” insurer

Why not?

- Legal barriers – would it give finality to (re)insurers?
- What if some (re)insurers don’t want to join (at the given lump sum cost)?
- Concentration of risk: potential higher capital load and hence higher cost
- What if it fails in the future?

Stakeholders’ “cool wall” (© *Top Gear, BBC*)



Presentation agenda

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Industry Survey 2011

Profile of a PPO

Additional measures in 2011

- Propensity
- MIB experience
- Liability PPOs
- Nature of Injury

Current reserving practice

Contributors

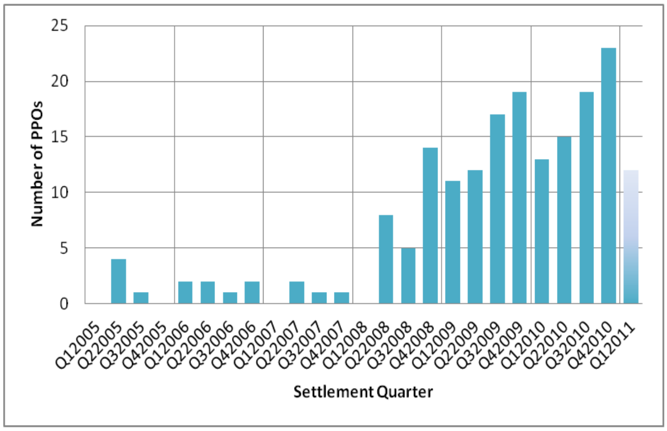
- UK motor market
  - 12 insurance groups
    - 9 out of the 10 top insurers
    - 87% of FSA regulated entities by premium volume
  - 8 out of the 12 also contributed to last year's survey
- Motor Insurer's Bureau

Contributors

- Allianz Insurance
- Aviva
- AXA
- esure
- Groupama
- Highway
- HSBC
- Liverpool Victoria
- NFU Mutual
- Provident
- RBSI
- RSA
- Zurich Insurance

Update

Number of PPO claims by settlement quarter



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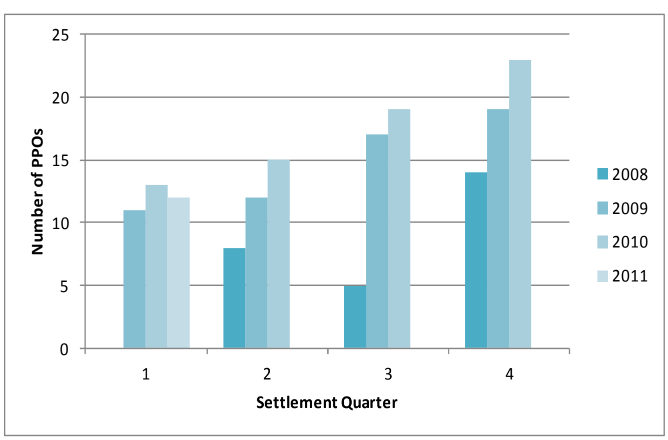
Update

Number of PPO claims by settlement quarter



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Industry Survey 2011

Profile of a PPO

Additional measures in 2011

- Propensity
- MIB experience
- Liability PPOs
- Nature of Injury

Current reserving practice

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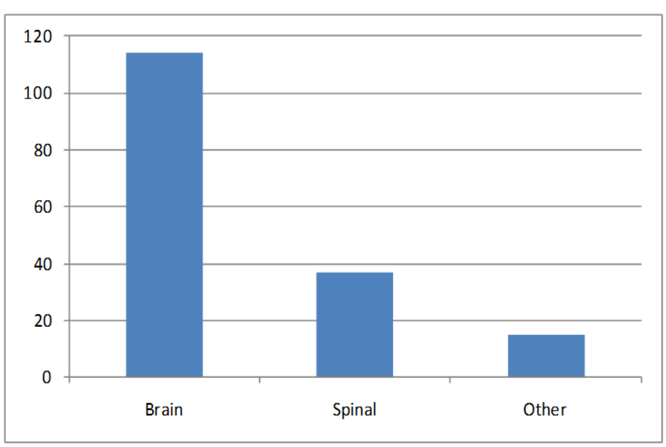
Profile of a PPO

Number of PPOs by type of injury



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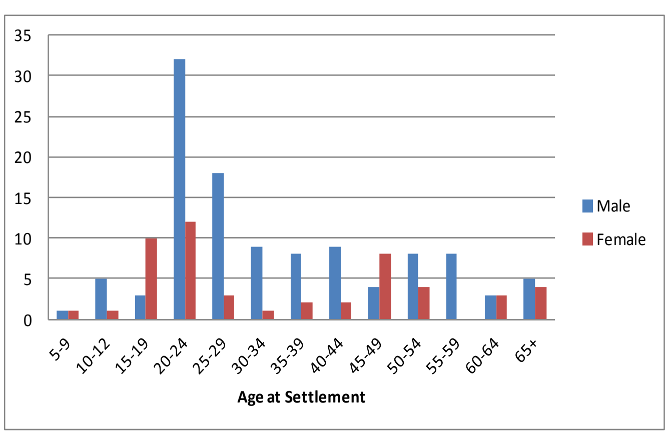
Profile of a Motor PPO

- Brain or spinal injuries
- Average age at settlement: 34

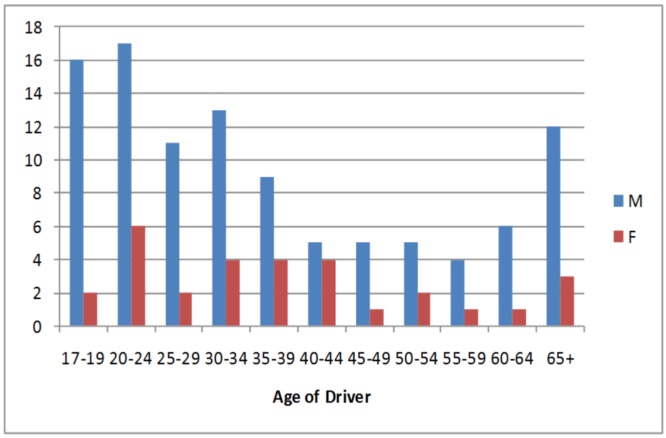
Profile of a PPO

Number of PPOs by age at settlement



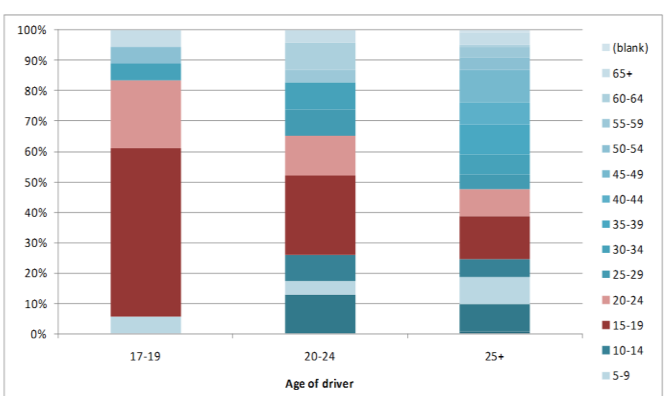
Profile of a PPO

Number of PPOs by age of driver



Profile of a PPO

Age of driver against age of claimant at the time of the accident

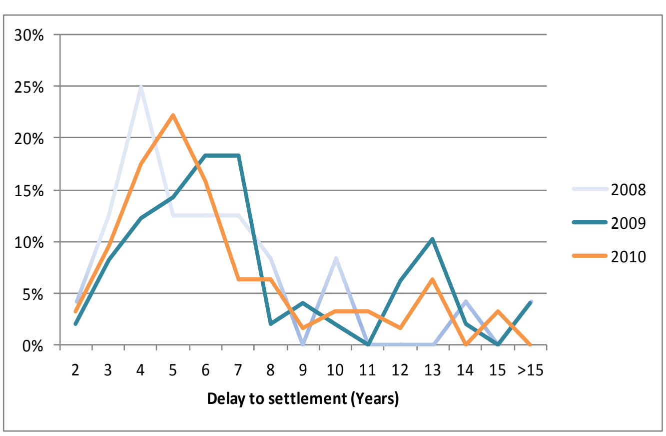


Profile of a Motor PPO

- Brain or spinal injuries
- Average age at settlement: 34
- Delay to settlement: 6 years

Profile of a PPO

Distribution of delay to settlement



Profile of a Motor PPO

- Brain or spinal injuries
- Average age at settlement: 34
- Delay to settlement: 6 years
- Future life expectancy at settlement: 41
- Life expectancy reduction: 10 years
- Indexation linked to ASHE 6115
- Annual PPO payment: £80k
- Lump sum: £2m

Industry Survey 2011

Profile of a PPO

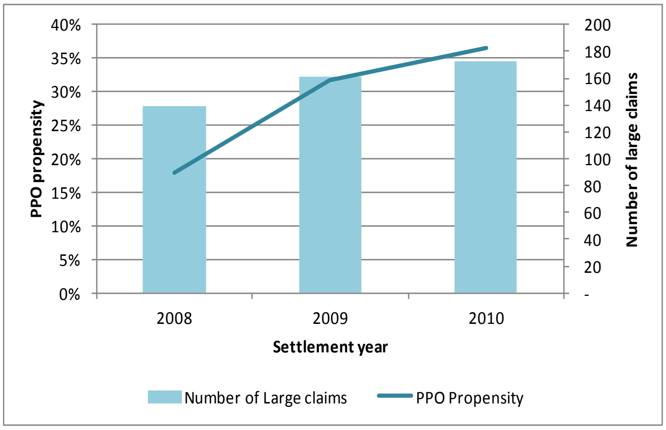
Additional measures in 2011

- Propensity
- MIB experience
- Liability PPOs
- Nature of Injury

Current reserving practice

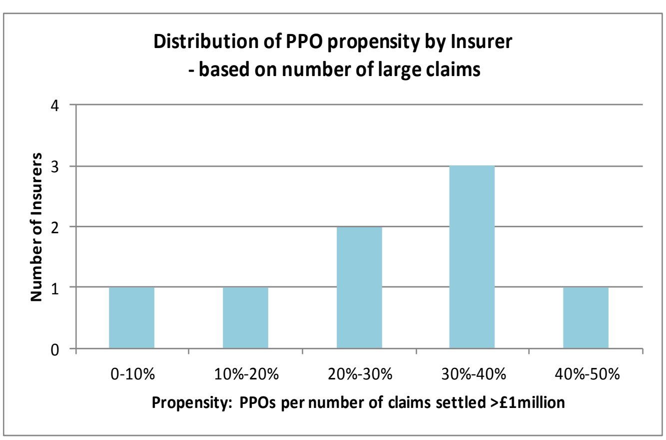
Overall propensity

Number of large claims (>£1m) which settle as PPOs



Propensity by insurer

Variation in propensity between insurers



Industry Survey 2011

Profile of a PPO

Additional measures in 2011

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- Nature of Injury

Current reserving practice

Industry Survey 2011

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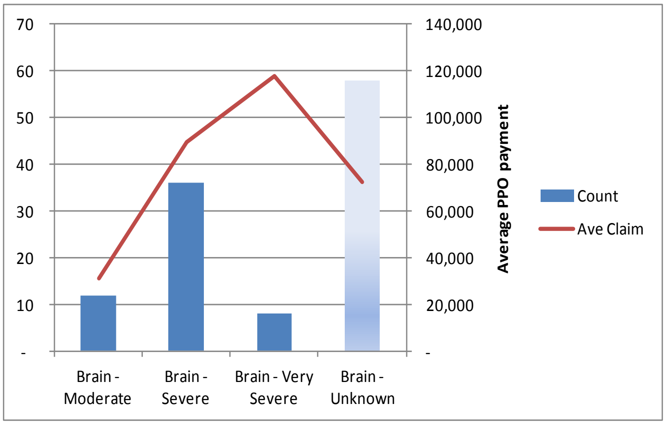
Current reserving practice

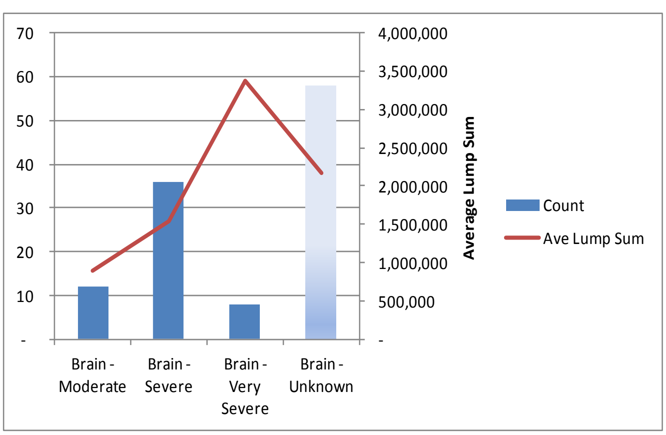
Brain Injury PPOs

Initial payment amount (£)



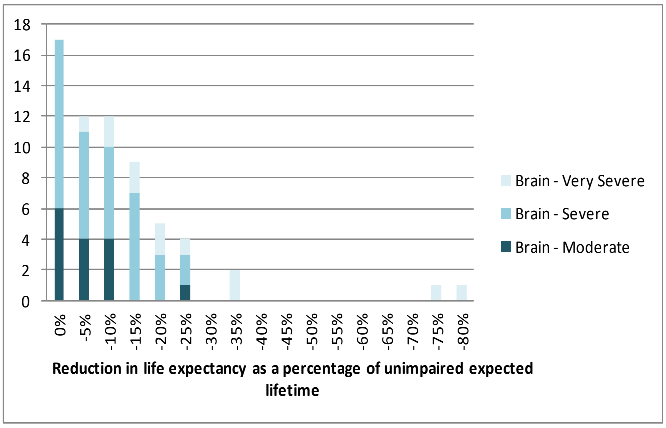
Brain Injury PPOs

Lump sum amount (£)



Brain Injury PPOs

Percentage reduction in life expectancy



Industry Survey 2011

Profile of a PPO

Additional measures in 2011

- Propensity
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- Nature of Injury

Current reserving practice

Reserving practice

Claims can be split into different elements for reserving purposes

- Claim settled as PPO (in payment)
- Future PPOs
  - Claims notified but not yet settled as PPO: IBNER
  - Claims not yet notified: IBNR

Current reserving practice

PPOs in payment

- Similar practice across the industry
  - Reserves calculated on an individual basis
  - NPV cashflow approach
- Differences in assumptions used
  - Earnings inflation
  - Life expectancy
  - Investment return

Reserving practice

Annuity certain approach

- Assume payments will be made with certainty for every year of future life expectancy

Probabilistic approach

- Take into account probability of survival for all future payments

Reserving practice example: Male 49 year old at time of settlement

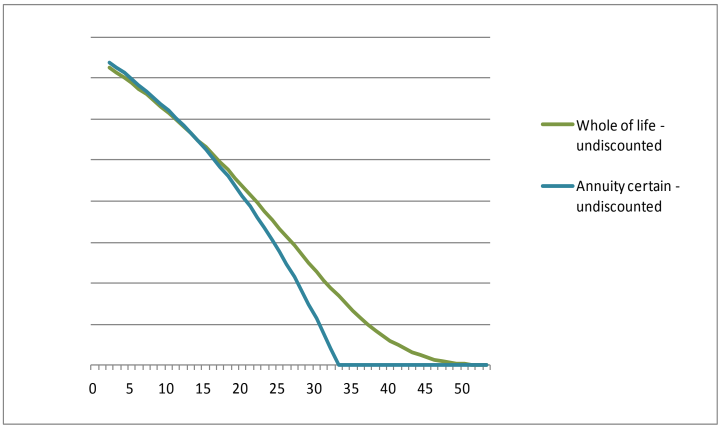
Probabilistic approach

- Future life expectancy
  - Year 0: 31.03 years
  - Year 1: 30.13 years 0.90 difference

- Discrepancy is larger as the claimant becomes older
  - Year 20: 14.67 years
  - Year 21: 13.98 years 0.31 difference

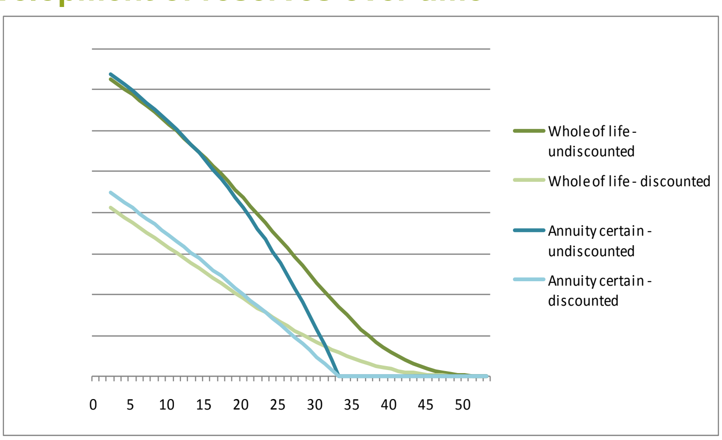
Reserving practice

Development of reserves over time



Reserving practice

Development of reserves over time



Reserving practice

Probabilistic approach

- Takes into account effect on life expectancy of someone who has already survived a year
  - Not always material over the course of a single year, however will become more material over the longer term
  - Allows for possibility of survival longer than their original life expectancy assumption
- Impact on discounting
- When PPOs are material, Solvency II requirement

Reserving practice

Reserves may increase from year to year

  - Once survived a year, an individual's life expectancy will have increased
  - Effect of the discount unwinding

Current reserving practice

- Known PPOs
- Future PPOs
  - Claims already reported but not yet settled as PPOs
  - IBNR claims

Current Reserving Practice

Future PPOs

- No consistent approach in the market
- Significant element of the reserves – delay to settlement
- Almost all respondents monitor open claims for likelihood of turning into a PPO
  - Variety of ways this is achieved

Observations

- Lack of consistency in / disclosure of assumptions
  - Economic assumptions
  - Life expectancy
- Nature of injury
- Life insurance methodologies
  - (Re)education needed

Presentation agenda

- Best estimate reserving and Solvency II impact
- Industry claims pool?
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Potential future investigations

- Overseas markets
- Impaired life mortality / future life expectancy
- Impact of any change on Ogden discount rate
- Continue industry survey

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

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

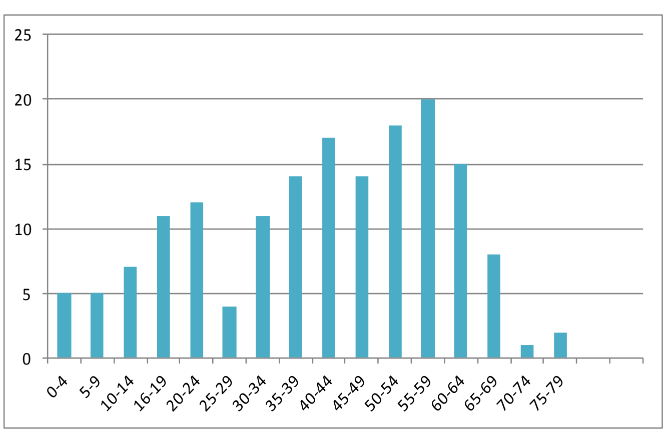
Suggested discussion points

Some thoughts:

- Are PPOs here to stay? Even if the Odgen discount rate comes down?
- Are liability limits of indemnity sufficient? What about limit indexation in case of PPO?
- Is there sufficient awareness of reserving and capital implications, even among actuaries?
- Industry pooling of experience (a new role for CMI?)

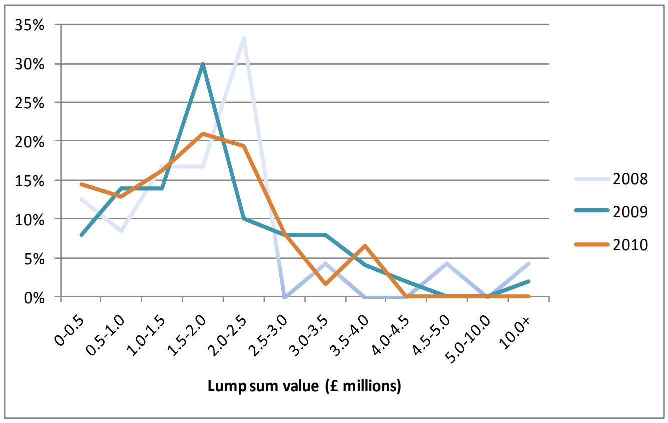
Profile of a PPO

Distribution of future life expectancy at the time of settlement



Profile of a PPO

Distribution of lump sum payment amounts



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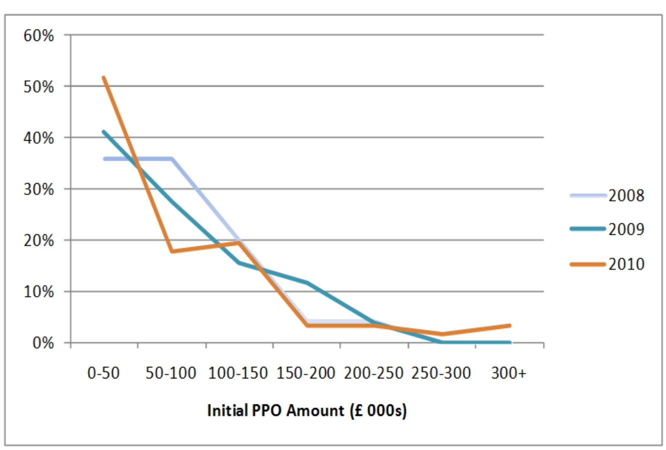
Profile of a PPO

Distribution of initial PPO payment amount



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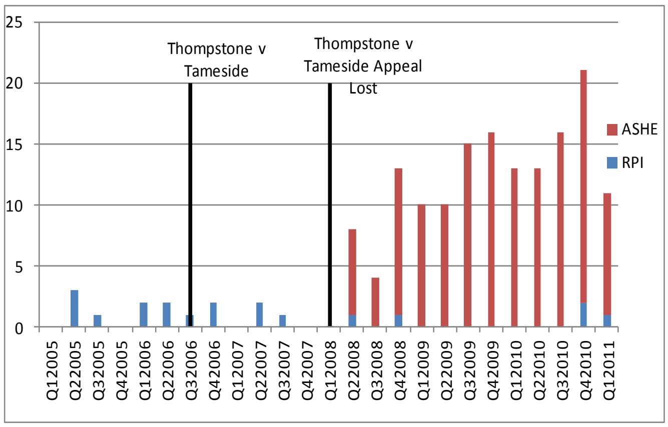
Profile of a PPO

Number of PPOs by settlement quarter
- split by RPI and ASHE indexation



History

2003 Courts Act

- Courts can impose a PPO for some or all of the heads of damage
- Implemented April 2005

Thompstone versus Tameside and Glossop NHS Trust

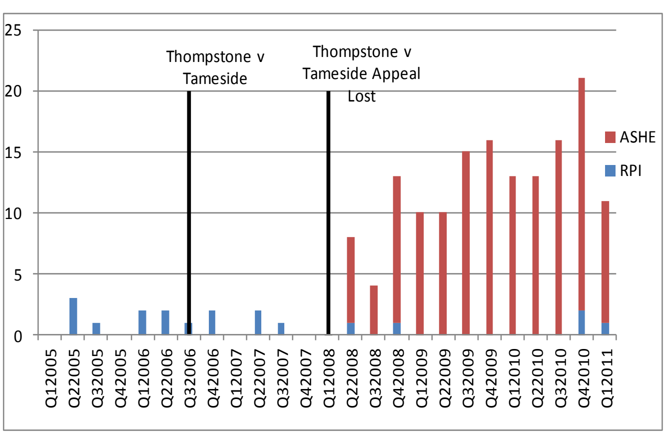
- November 2006 ruling
  - RPI was the automatic index but it is not suitable for wage based costs or losses
  - Indexation linked to ASHE, for example, for medical care
- Upheld by Court of Appeal January 2008
- NHS abandoned appeal to House of Lords late 2008

ASHE

- Annual Survey of Hours and Earnings
- Sub-category 6115 relating to salaries of care assistants and home carers
- Difficult to match investments
  - Survey not an index
  - Methodology changes
  - No long term projections
  - Different percentiles used

Profile of a PPO

Number of PPOs by settlement quarter
- split by RPI and ASHE indexation



Industry Survey 2011

Profile of a PPO

Additional measures in 2011

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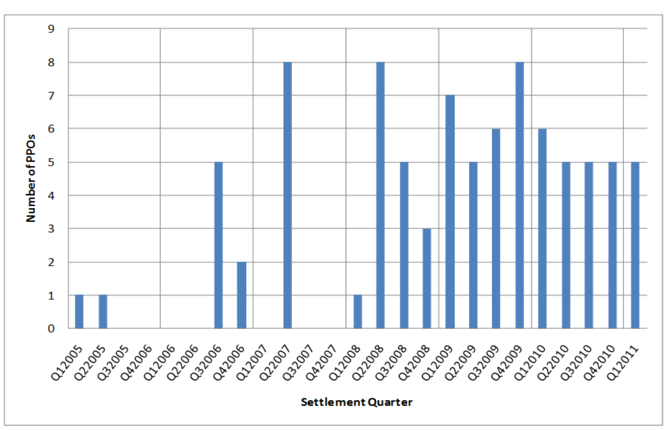
- Nature of Injury

Current reserving practice

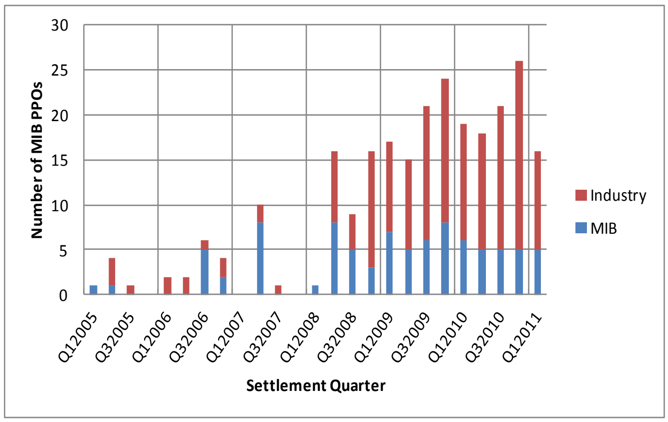
MIB experience

Number of claims by settlement quarter



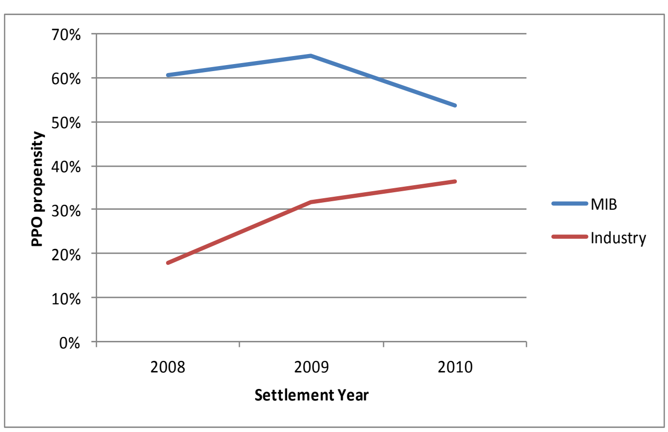
MIB experience

Number of claims by settlement quarter



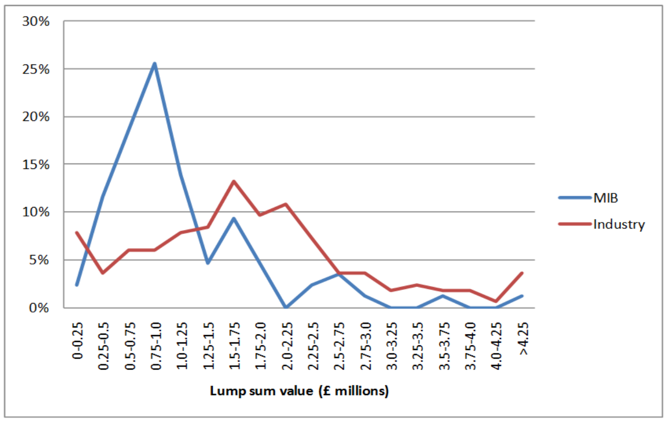
MIB experience

Propensity: number of PPOs per large (>£1m) settlement



MIB experience

Lump sum



Industry Survey 2011

Profile of a PPO

Additional measures in 2011

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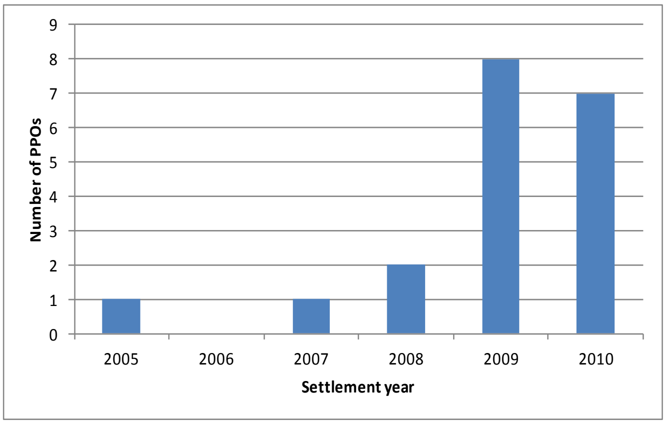
Current reserving practice

Liability PPOs

Number of liability PPOs by settlement year



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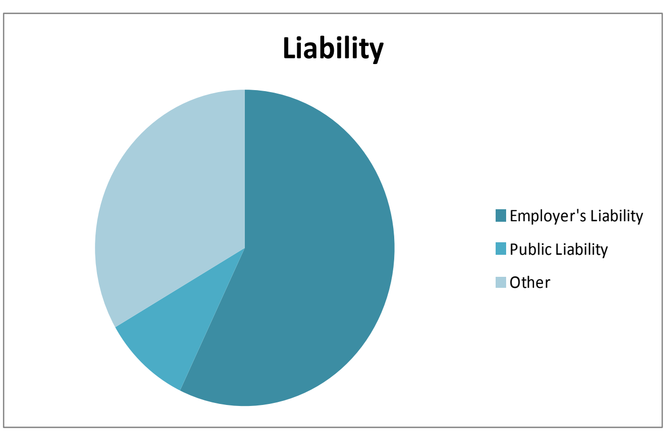
Liability PPOs

Cover type



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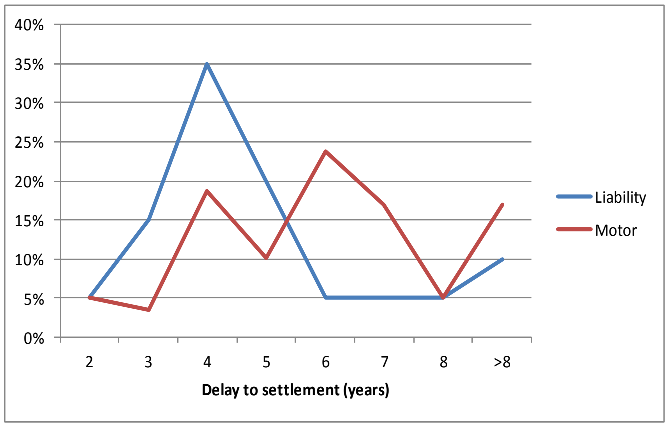
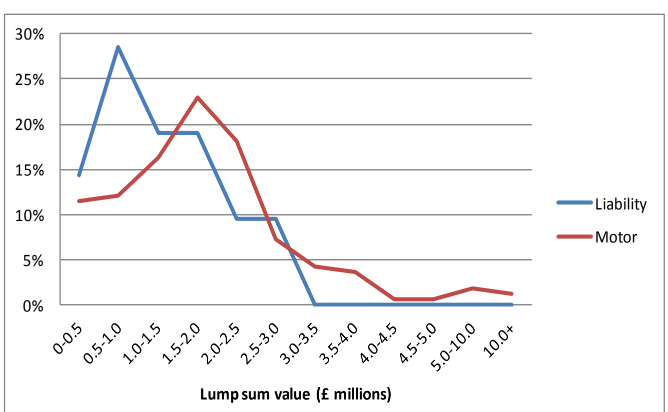
Liability Vs Motor PPOs

Delay to settlement



Liability Vs Motor PPOs

Lump sum



Liability Vs Motor PPOs

Initial PPO amount