

**The Actuarial Profession**  
making financial sense of the future

Momentum 2011  
Mark Cockroft (Novae Re)



## Periodical Payment Orders (PPOs)

Manchester; December 1st, 2011

© 2011 The Actuarial Profession • [www.actuaries.org.uk](http://www.actuaries.org.uk)

---

### Presentation agenda

---

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- Why worry?
- Solvency II implications

© 2011 The Actuarial Profession • [www.actuaries.org.uk](http://www.actuaries.org.uk)

1

## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- Why worry?
- Solvency II implications

## UK Motor market: recent press coverage

**BBC NEWS** Mobile  
Home World UK England NI, Ireland  
Market Data Your Money Economy  
1 March 2011 Last updated at 15:18

**Insurance and pension gender ruling**  
COMMENTS (1268)  
Insurers cannot charge different premiums to men and women because their gender, the European Court of Justice (ECJ) has ruled.  
The decision means that women can no longer be charged lower car insurance premiums than men, and the cost of their pensions annuity will change.  
The change will come into effect in December 2012, although customers could see premiums alter in the interim.

**the guardian**  
News Sport Comment Culture Business Money Life & style  
Money Car Insurance  
OFT lool  
The consumer spotlight after 40% in a year

**This is MONEY.co.uk**  
FINANCIAL WEBSITE OF THE YEAR  
Money Home Markets Saving Investing Bills Cars Holidays Cards & loans Pensions Mortgages & more

**Victory for motorists as 'referral fees' which push up car insurance premiums are banned**  
By JAMES SLACK and RAY MASSEY  
Last updated at 10:10 AM on 9th September 2011  
Comments (12) Share Like

Justice Secretary Ken Clarke will today announce the end of 'referral fees' – a cynical cash-for-contacts scam where insurers trade the details of accident victims with claims-shark lawyers, driving up car insurance premiums in the process.  
The insurance racket is blamed for crippling increases in the cost of motor cover and is set to be finally banned. Ministers had previously resisted demands for a ban.

The OFT is to look into car insurance costs. Photograph: photodisc green

Soaring car insurance premiums are to be investigated by the Office of Fair Trading in a bid to establish whether drivers are being overcharged.

## UK Motor market: recent press coverage – relevant to large claims severity



© 2011 The Actuarial Profession • www.actuaries.org.uk

4

## Motor third-party liability insurance in the UK

- Compulsory purchase if you own a vehicle that is not permanently off the road
- Covers physical damage (PD) and bodily injury (BI)
- Required coverage is unlimited for BI
- Motor Insurance Bureau (MIB) for uninsured or untraced drivers
- Main heads of damage:
  - Pain and suffering
  - Immediate costs
  - Loss of future earnings
  - Costs of care
- Contributory negligence
  - in practice burden of proof is with defendant
- NHS & claimants can recoup costs

© 2011 The Actuarial Profession • www.actuaries.org.uk

5

## Motor third-party liability insurance in the UK – salient issues for large insured claims

- Compulsory purchase if you own a vehicle that is not permanently off the road
- Covers physical damage (PD) and bodily injury (BI)
- **Required coverage is unlimited for BI**
- Motor Insurance Bureau (MIB) for uninsured or untraced drivers
- Main heads of damage:
  - Pain and suffering
  - Immediate costs
  - **Loss of future earnings**
  - **Costs of care**
- Contributory negligence
  - in practice burden of proof is with defendant
- NHS & claimants can recoup costs

© 2011 The Actuarial Profession • www.actuaries.org.uk

6

## General liability insurance in the UK

- Compulsory purchase for some entities (e.g. employers)
- Covers physical damage (PD) and bodily injury (BI)
- No requirement for unlimited coverage but minimums apply for compulsory purchase
- No uninsured/untraced back-up
- Main heads of damage:
  - Pain and suffering
  - Immediate costs
  - Loss of future earnings
  - Costs of care
- Contributory negligence
  - in practice burden of proof is with defendant
- NHS & claimants can recoup costs

© 2011 The Actuarial Profession • www.actuaries.org.uk

7

## UK motor & liability market: XL reinsurance highlights

- Protection is unlimited xs retention for motor BI
  - Retention is typically about 0.5% of insurer's GWP
    - From £0.5m for smaller monolines, up to £5-10m for composite & multinationals
    - Reinsurance cost is typically in the range 5-15% of GWP
- Typical reinsurer share is 5-15% of cession
- Reinsurers usually purchase own retrocession, especially for motor, although unlimited cover not generally available
- Layers are indexed for BI, i.e. they increase over time in line with (usually) wage inflation until date of settlement
- XL market has been relatively stable and conservative, good data, (relatively) long history of actuarial pricing

© 2011 The Actuarial Profession • www.actuaries.org.uk

8

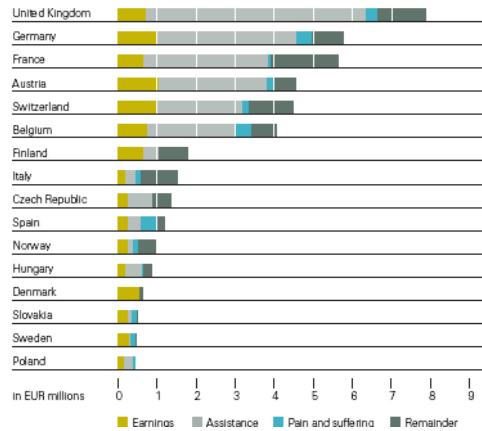
## How large is "large"?

The screenshot displays two news websites side-by-side. On the left is 'The Telegraph' with a 'Law Reports' section featuring an article titled 'Car crash victim awarded record £17.5m'. On the right is 'Mail Online' with a 'London Evening Standard' section featuring a headline 'Girl paralysed in road crash is awarded record £17.5m'. Both articles mention a 16-year-old girl named Chrissie Johnson who was a passenger in a car hit by a lorry in July 2006. The Mail Online article includes a 'Get it now' button and a 'Sponsored links' section for a 'Life Insurance Calculator'.

© 2011 The Actuarial Profession • www.actuaries.org.uk

9

## A comparison of UK vs rest of Europe



Source: European Motor Markets (Sigma, 2007) from swissre.com/publications

© 2011 The Actuarial Profession • www.actuaries.org.uk

10

- 2006 benchmark case study:
  - 30 y.o. male
  - Wife, 2 children
  - Ave income
  - Severe spinal injury
  - No ventilation but remains 100% disabled
  - No return to work

## Lump sum payouts

- Tax-free lump sum to pay immediate damages/costs and fund future care and loss of future earnings
- Finality of settlement for (re)insurers
- Claimant takes mortality and investment risk
  - Ogden tables convert future costs into lump sum based on expected future lifetime and 'risk-free' investment return
  - Risks can be positive and negative
- Jackpot!...and possible inheritance

© 2011 The Actuarial Profession • www.actuaries.org.uk

11

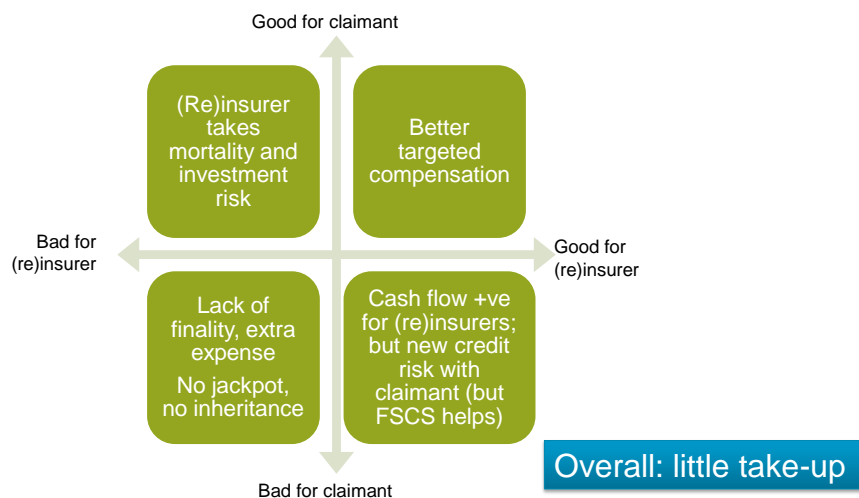
## Structured settlements

- Damages Act 1996 allowed annual or semi-annual payments in lieu of lump sum for lifetime future costs
- Had to be agreed by both parties, endorsed by courts
- Usually payments increased in line with RPI and payments were what could be purchased as indexed annuity by lump sum
- Standard XL reinsurance wording altered to include structured settlements: indexation extended

© 2011 The Actuarial Profession • www.actuaries.org.uk

12

## Claimant's and (re)insurer's viewpoint on structured settlements vs lump sum



© 2011 The Actuarial Profession • www.actuaries.org.uk

13

## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- Why worry?
- Solvency II implications

## Courts Act 2003

- Introduced Periodical Payment Orders (PPOs), implemented 2005
- Can be imposed by a court even if one or both sides disagree
  - in some circumstances, the judge is required to consider a PPO
- Focus on needs of claimant: lump sum plus ongoing annual or semi-annual payments to meet future costs
- Not simple annuities: indexed payments, can be varied in the future, can build in step change
- Payments determined by expected future costs: no direct link to Ogden lump sum



## Thompstone vs Tameside

- Courts Act 2003 specified RPI index but permitted other measure if justified
- Judges and claimants concerned that RPI not sufficient to cover future cost inflation
- Thompson vs Tameside and Glossop Acute Services NHS Trust
  - 2006: court ruled that wage inflation is better link in this case and chose ASHE; Tameside appealed
  - 2008: appeal upheld original court decision; Tameside declined any further appeal
- Other cases generalised ASHE link

© 2011 The Actuarial Profession • www.actuaries.org.uk

16

## RPI vs ASHE (Annual Survey of Hours and Earnings)

### RPI

- Published by ONS
- Monthly index
- Long history
- Able to match investments

### ASHE

- Published by ONS
- Annual survey, volatile
- Short history (back-dated to 2002), several changes
  - Affected by min. wage although generally higher percentiles used for PPOs
- Difficult to match investments
- Series 6115 = care assistants and home care

© 2011 The Actuarial Profession • www.actuaries.org.uk

17

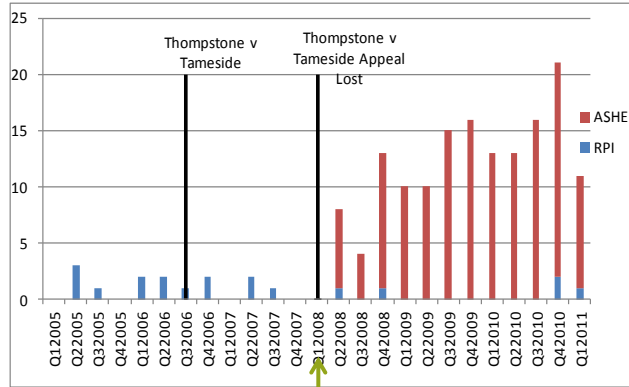
## Summary: what is a PPO?

- Annuity-style award instead of a lump sum
- Indexed
  - was RPI but court cases established that ASHE 6115 is a better link
- Payments can be varied to meet likely future changes in circumstance
- (Re)insurer now takes on mortality and investment risk
  - and expense of decades-long settlement duration

## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- **PPOs take-off**
- Profile of a PPO
- Why worry?
- Solvency II implications

## Known settled PPOs in UK insurance market (excl MIB), split by index basis



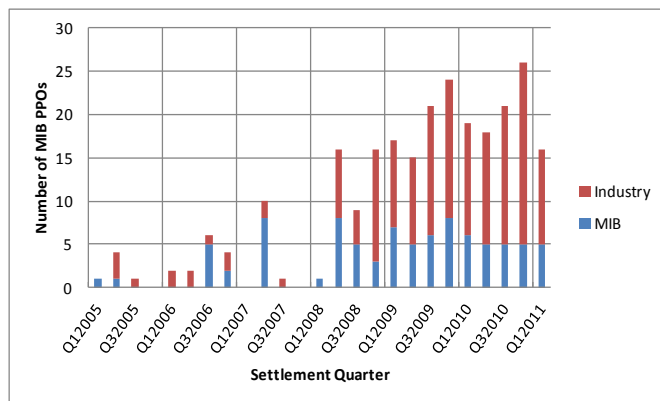
Source: GIRO PPO working party update 2011

2008 also saw credit crunch, and dramatic reduction in investment return, hence reduced value of lump sum

© 2011 The Actuarial Profession • www.actuaries.org.uk

20

## Known settled PPOs (including MIB)

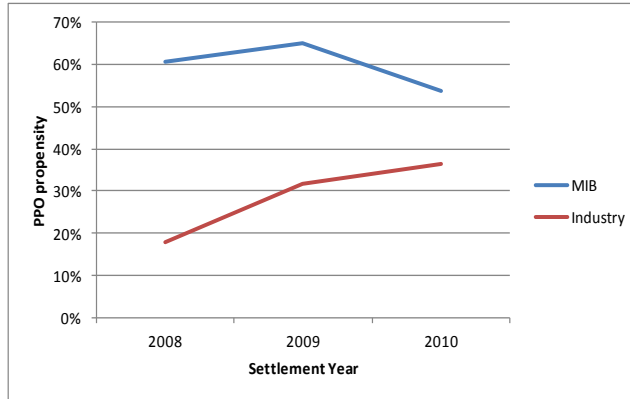


Source: GIRO PPO working party update 2011

© 2011 The Actuarial Profession • www.actuaries.org.uk

21

## PPO propensity: proportion of large claims (>£1m) settling as PPO

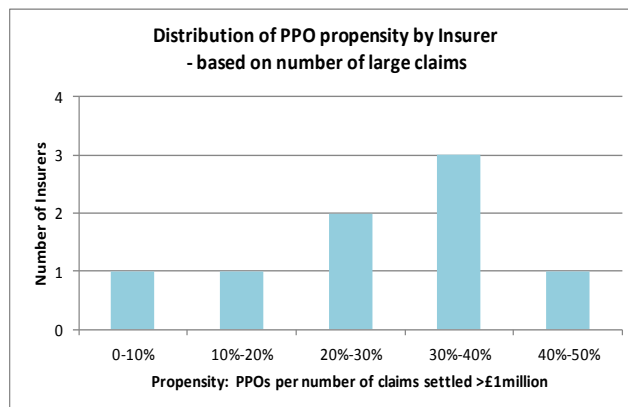


Source: GIRO PPO working party update 2011

© 2011 The Actuarial Profession • www.actuarial.org.uk

22

## PPO propensity: variation between insurers



Source: GIRO PPO working party update 2011.

Qualification: minimum 20 settled large claims in 2008-10

© 2011 The Actuarial Profession • www.actuarial.org.uk

23

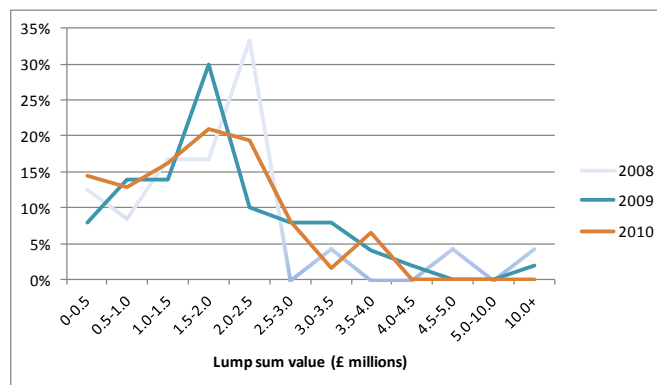
## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- Why worry?
- Solvency II implications

© 2011 The Actuarial Profession • www.actuaries.org.uk

24

## Profile of a PPO: distribution of lump sum

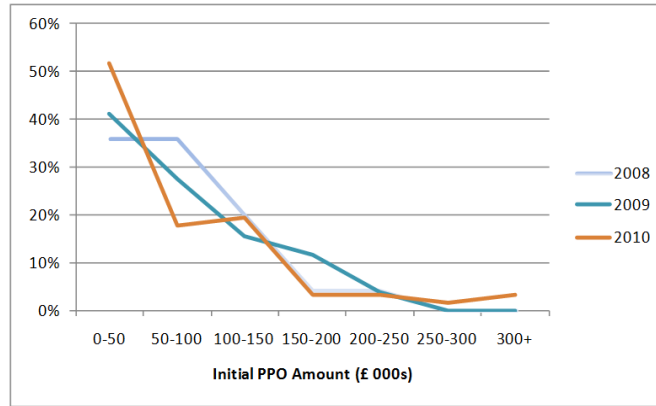


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

25

## Profile of a PPO: distribution of first annual payment

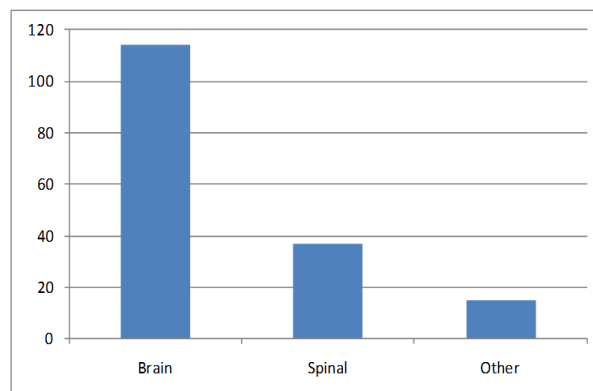


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

26

## Profile of a PPO: number of PPOs by injury type

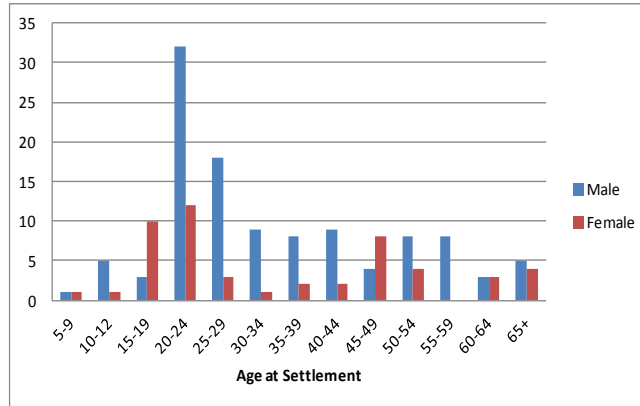


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

27

## Profile of a PPO: number of PPOs by age at settlement

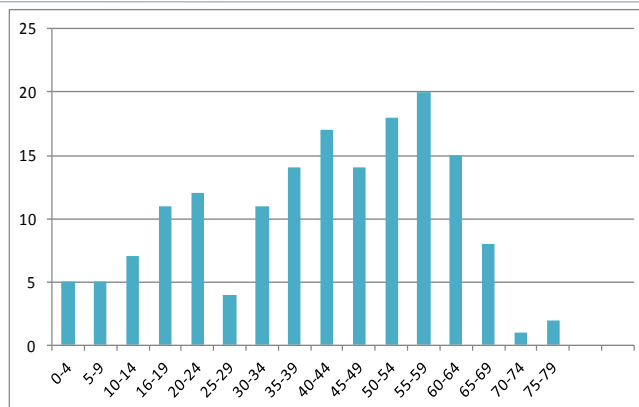


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

28

## Profile of a PPO: number of PPOs by estimated future life expectancy

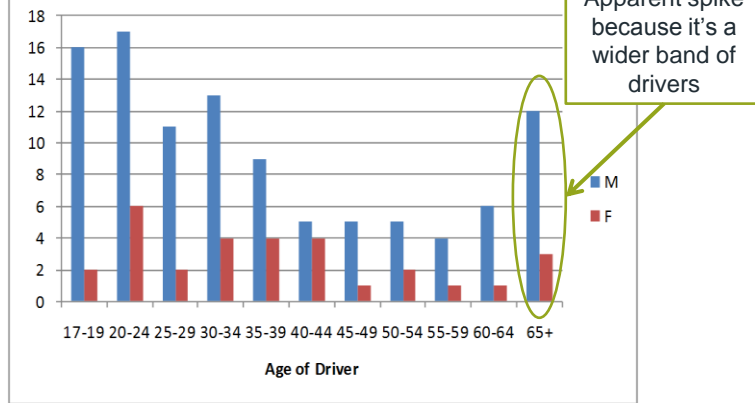


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

29

## Profile of a PPO: number of PPOs by age of driver

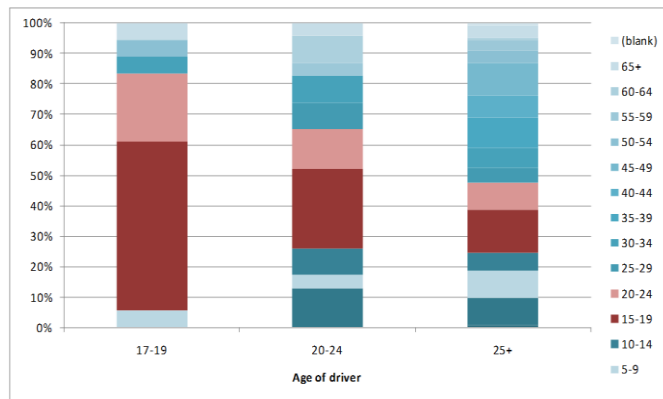


Source: GIRO PPO working party update 2011  
Motor only; excl MIB

© 2011 The Actuarial Profession • www.actuaries.org.uk

30

## Profile of a PPO: relationship between age of claimant and age of driver



Source: GIRO PPO working party update 2011  
Motor only; excl MIB; ages at time of accident

© 2011 The Actuarial Profession • www.actuaries.org.uk

31



## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- **Why worry?**
- Solvency II implications

© 2011 The Actuarial Profession • www.actuaries.org.uk

32

## Reinsurance recovery Example claim

### Claimant details

- Male, 18 at incident, 25 at settlement
- Normal life expectancy (say 55 years, deterministic)

### Settlement

- £2m lump sum and £50,000 p.a. for life linked to ASHE 6115

### Reinsurance

- Unlimited excess £2m, indexed using standard LMIC clause

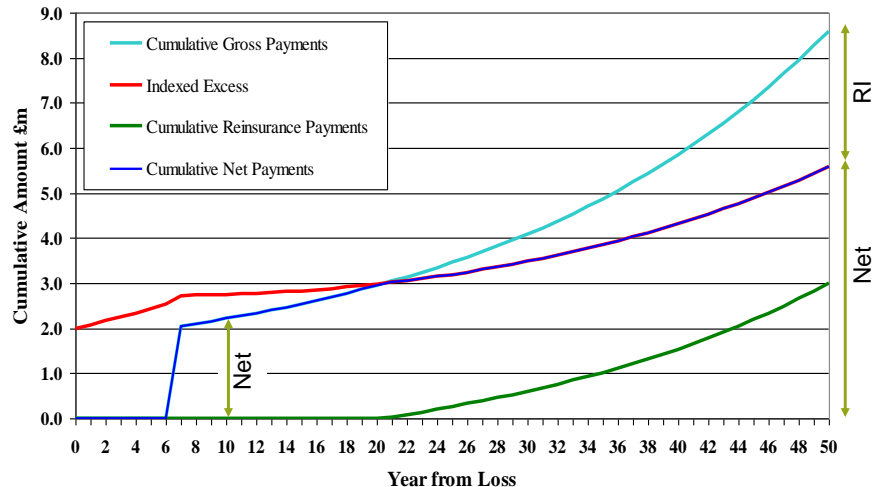
### Market Assumptions

- AWI of 4%, ASHE of 4.5%
- Real discount rate of 2.5% over AWI.

© 2011 The Actuarial Profession • www.actuaries.org.uk

33

## Reinsurance recovery Cumulative cash flows for example claim



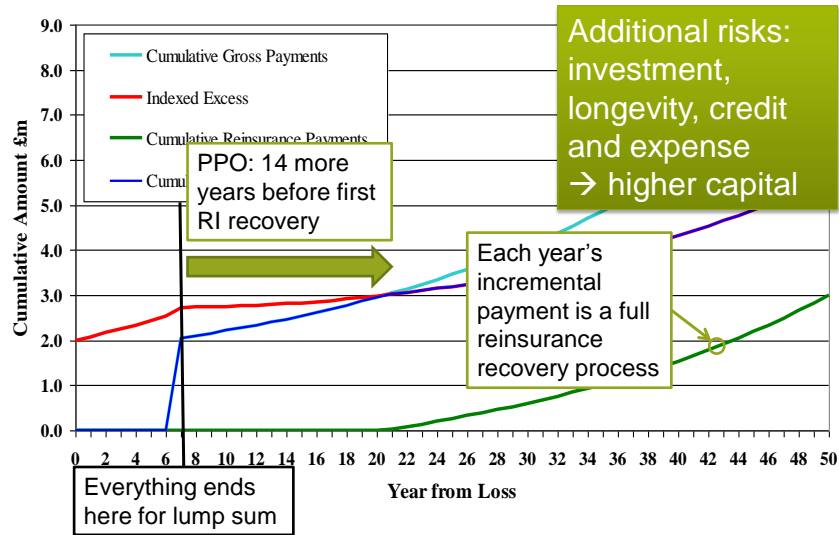
## Reinsurance recovery NPV for example claim

	Ogden Equivalent	PPO Equivalent	Change	
			+/-	%
Gross	3,522,841	3,580,674	57,832	1.6%
Reinsurance	794,635	511,900	-282,735	-35.6%
Net	2,728,207	3,068,774	340,568	12.5%

### Impact

- The impact is a slight deterioration at a gross level, due to ASHE inflation being higher than AEI
- However, the key impact is the reinsurance
  - The reinsurer's position improves significantly due to indexation
  - The insurer's net position is significantly worse
- These results are will vary by situation (e.g. initial lump sum vs retention) and many will be worse for reinsurers instead
- Uncertainty: has implications for reserving, pricing and capital

## Reinsurance recovery Other factors



## Liability limits – the problem

- GIRO working party survey results for 21 liability PPOs:
  - Average lump sum = £1.3m
  - Average initial annual payment = £80k
  - Average future life expectancy at settlement = 26 years
- Therefore, “average case” total payment = £5.1m (\*)
- This will increase for new loss events happening today
- Typical PL limits are £1m-5m; EL at £10m
- These are just the average, there is a wide range of values
- Current liability limits are not sufficient for PPOs

(\*): Assuming 4.5% p.a. ASHE inflation, annuity certain

## Liability limits – potential solutions

- Don't award PPOs
  - Claimants' needs are not always addressed
  - This is largely current practice by the Courts
- Increase limits generally
  - Liability market is very soft; no-one will pay for higher limits and insurers won't give them away for free
- Index/increase limits for PPOs
  - Complex wording issues, different interpretations, may "invite" PPOs
  - Possibly the best solution, but nothing happening yet

© 2011 The Actuarial Profession • www.actuaries.org.uk

38

## Presentation agenda

- UK bodily injury large claims before PPOs
- What is a PPO?
- PPOs take-off
- Profile of a PPO
- Why worry?
- Solvency II implications

© 2011 The Actuarial Profession • www.actuaries.org.uk

39

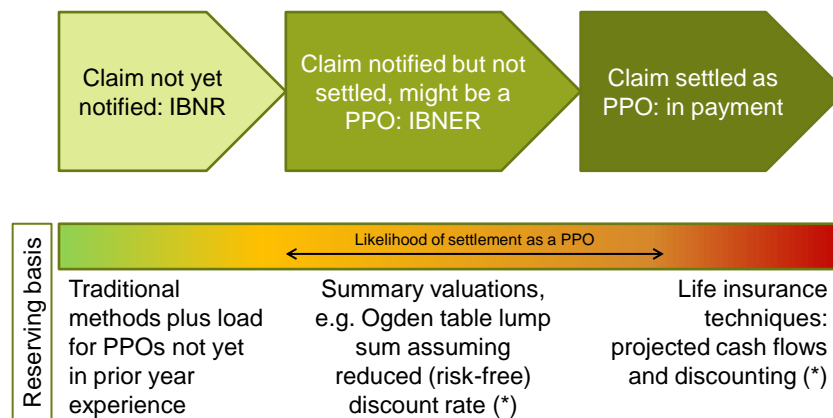
## QIS5 technical specifications: “Annuities stemming from non-life contracts”

- 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)

© 2011 The Actuarial Profession - www.actuaries.org.uk

40

## Timeline of a PPO claim: best estimate reserving

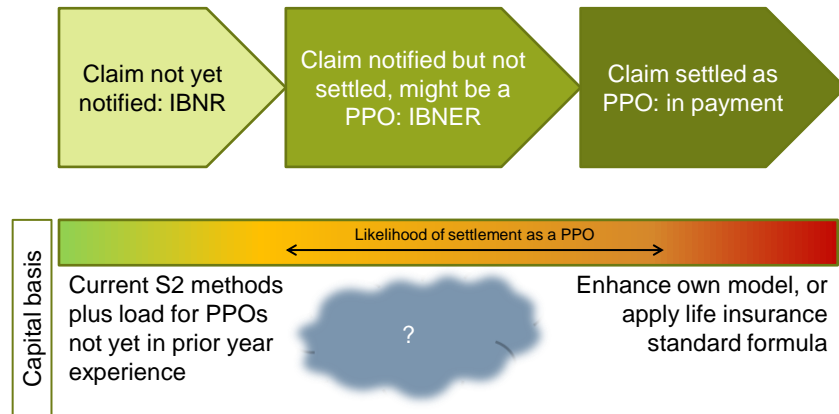


Note (\*): See last year's PPO paper for details

© 2011 The Actuarial Profession - www.actuaries.org.uk

41

## Timeline of a PPO claim: Solvency II capital



© 2011 The Actuarial Profession - www.actuaries.org.uk

42

## Solvency capital requirement for life insurance contracts – standard formula

- Reminder:  $SCR = \text{Basic Solvency Capital Requirement} + \text{Op Risk} + \text{adjustment for risk-absorbing effect of technical provisions and deferred taxes}$
- 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

© 2011 The Actuarial Profession - www.actuaries.org.uk

43

## Summary

- PPOs are annuity-style payments for bodily injuries
- Indexed, can be varied in some circumstances
- Better match for many claimants' future needs
- Eliminate investment and mortality risk for claimants
- But no "jackpot" or inheritance
- (Re)insurers now have much (decades!) longer run-off and additional risks/capital
- Uncertainty over impact on NPV, reserves sensitive to assumptions
- Can't match investments
- Liability limits not adequate
- Solvency II complications

© 2011 The Actuarial Profession • www.actuaries.org.uk

44

## Questions or comments? ...and a plug for the GIRO PPO working party

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 presenter.

**Novae Re**

**Mark Cockroft** | FIA  
Chief Actuary

Novae Re  
71 Fenchurch Street, London EC3M 4HH  
Tel: +44 (0) 20 7903 7300 | Direct Dial: +44 (0) 20 7903 0537  
Fax: +44 (0) 20 7903 7333 | Mobile: +44 (0) 7502 278 756  
mcockroft@novaere.com | www.novaere.com



© 2011 The Actuarial Profession • www.actuaries.org.uk

45