

The Actuarial Profession
making financial sense of the future

Health and Care Conference
Bill Baker, Peter Banthorpe, Andy Chan



Health and Care Reserving Working Party

19 May 2011

© 2010 The Actuarial Profession • www.actuaries.org.uk

Agenda

- History and Background
- Selected Results from Survey, to draw out
 - Comparisons with 2007
 - Interesting Results
 - Points for discussion
- Future work

Background and History

- Successful 2007 H&C Reserving Working Party
 - Looked at reserving practices specifically for Critical Illness, Income Protection and Private Medical Insurance products
 - Largely motivated by PS06/14 and ICA
- 2010 H&C Reserving working party
 - Concentrate on Solvency 2 issues
 - Limited questions on traditional reserving approaches
 - This session covers Income Protection (IP) and Critical Illness (CI) only.

© 2010 The Actuarial Profession • www.actuaries.org.uk

2

Working Party Membership

- Sheila Anstead
- Bill Baker
- Peter Banthorpe
- Jo Buckle
- Andy Chan
- Chris Coote
- Robert Kipling
- John Smith
- Lindsay Smitherman

© 2010 The Actuarial Profession • www.actuaries.org.uk

3

Timeline

| Date | Action |
|----------------|---------------------------------|
| 14 January | Surveys issued |
| 14 February | Survey original deadline |
| 4 March | Survey closed and data cleaned |
| 20 April | Results issued to respondents |
| 19 May | Presentation to H&C Conference |
| 21/22 November | Presentation to Life Convention |

© 2010 The Actuarial Profession • www.actuaries.org.uk

4

Outline of the CI and IP Surveys

- CI survey drafted first;
- IP was then modified from this;
- Key sections:
 - Methodology and Process
 - Claims
 - Lapses
 - Options
 - Additional Reserves
 - ICA
 - Solvency 2

© 2010 The Actuarial Profession • www.actuaries.org.uk

5

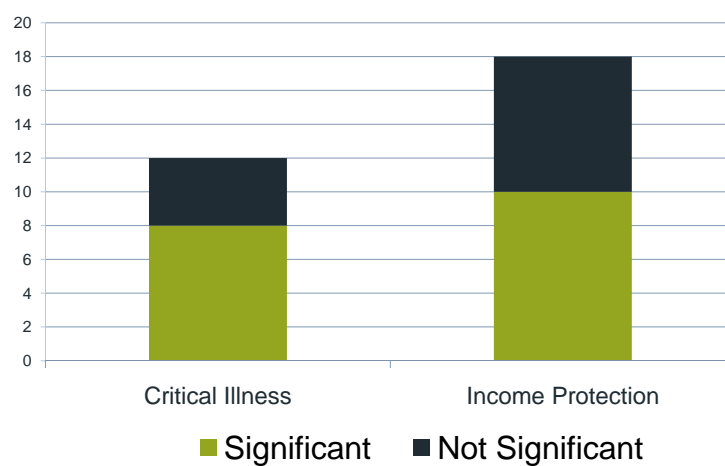
Some Survey Limitations

- Unlike 2007 no questions about company type, or distribution channels;
- Some comments received from respondents that IP survey was most suitable for writers of long-term IP – Holloway plans not as well catered for.

© 2010 The Actuarial Profession • www.actuaries.org.uk

6

Respondents and Significance of Business



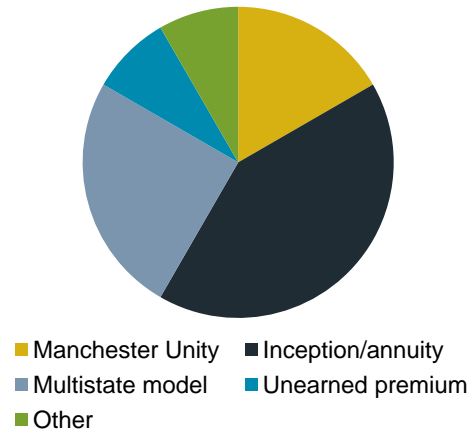
© 2010 The Actuarial Profession • www.actuaries.org.uk

7

IP Valuation Approach – Individual Business

Some respondents indicated more than one approach.

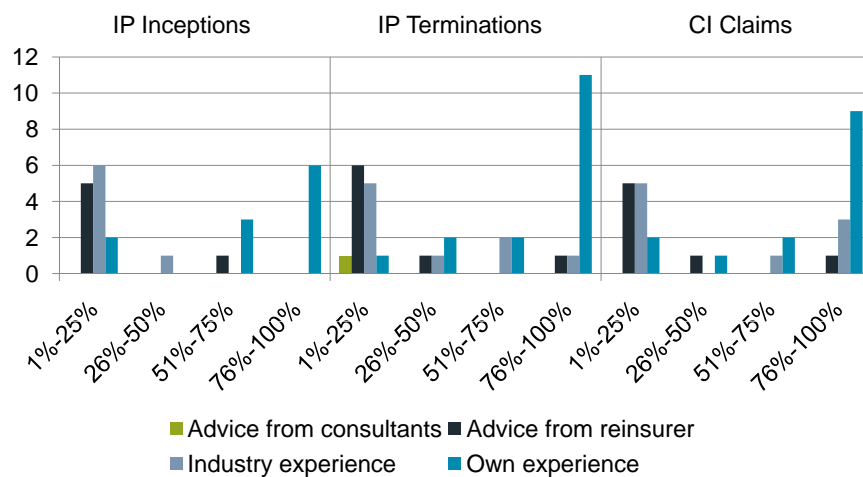
4 indicated MU approach, 3 of which indicated they also used Inception annuity or multistate



© 2010 The Actuarial Profession • www.actuaries.org.uk

8

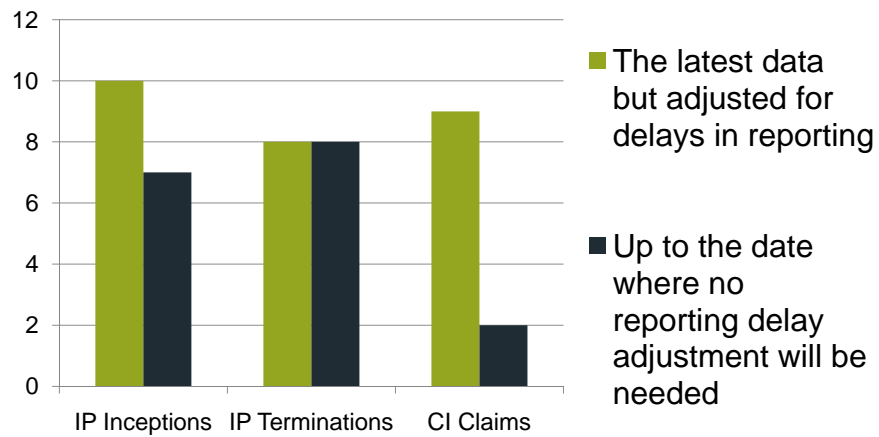
Sources of Data for Best Estimate Basis



© 2010 The Actuarial Profession • www.actuaries.org.uk

9

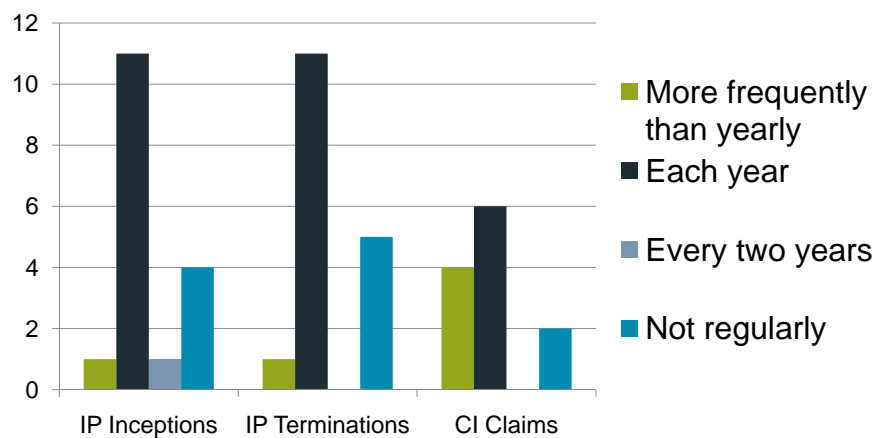
Data used for experience Investigations



© 2010 The Actuarial Profession • www.actuarial.org.uk

10

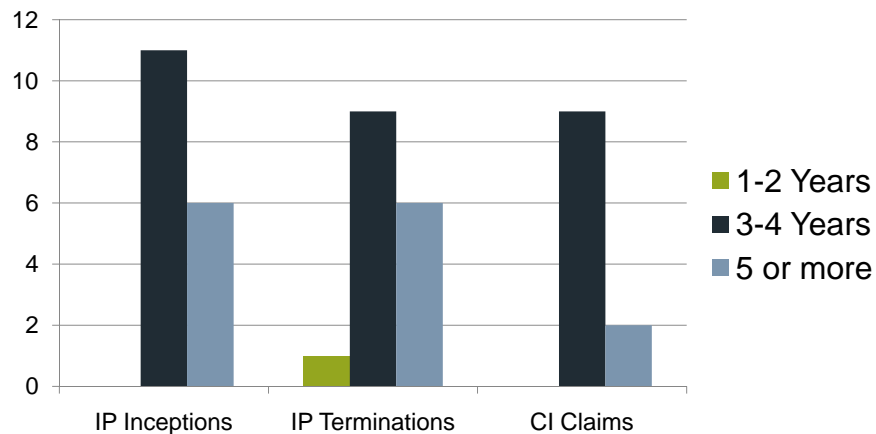
Frequency of experience Investigations



© 2010 The Actuarial Profession • www.actuarial.org.uk

11

How many years of data used in best estimate experience



© 2010 The Actuarial Profession • www.actuaries.org.uk

12

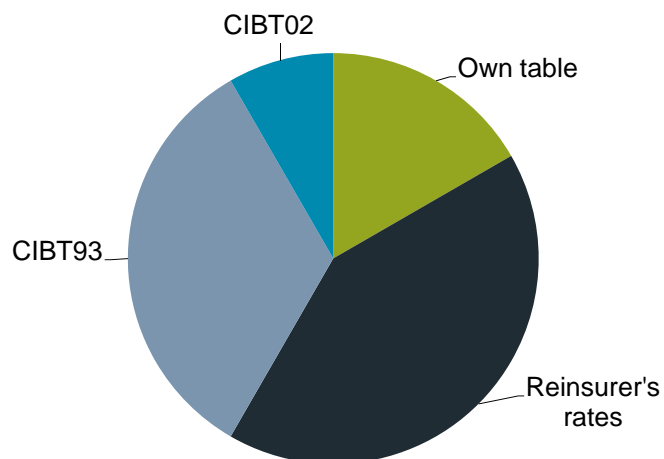
Critical Illness Analyses

- Last survey gathered information on mortality and morbidity assumptions separately;
- This time we asked:
 - "Do you carry out separate investigations for mortality and morbidity experience for your accelerated critical illness products, or do you just investigate a combined claim rate?"
- 100% of respondents said "combined rate"

© 2010 The Actuarial Profession • www.actuaries.org.uk

13

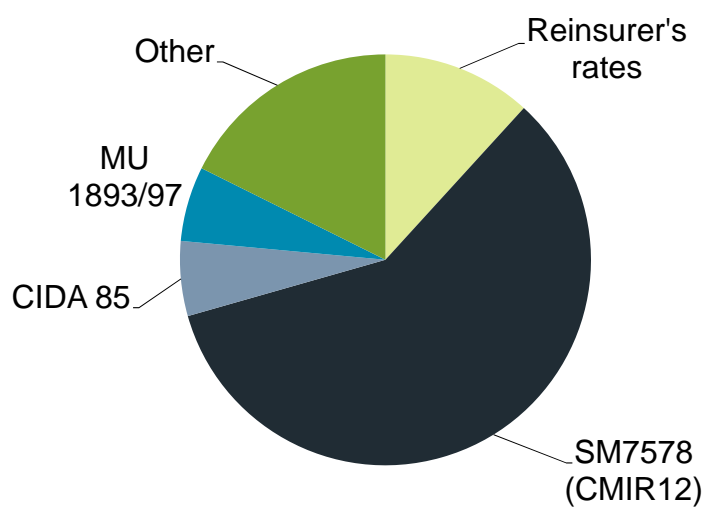
Base Tables – Critical Illness



© 2010 The Actuarial Profession • www.actuaries.org.uk

14

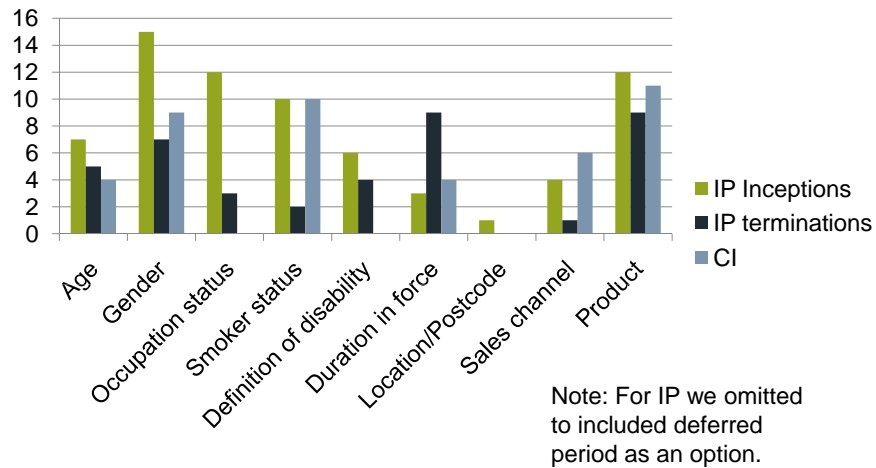
Base Tables – Income Protection Inceptions



© 2010 The Actuarial Profession • www.actuaries.org.uk

15

Adjustments to Base Tables



© 2010 The Actuarial Profession • www.actuaries.org.uk

16

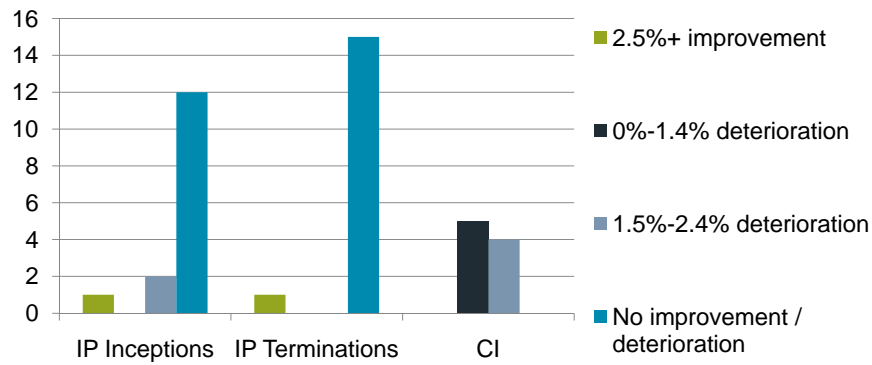
IP Inception Adjustments

| | Increase | Decrease | No change |
|--|----------|----------|-----------|
| Credit crunch | 2 | 0 | 14 |
| Treating customers fairly | 1 | 0 | 15 |
| Changes in claims admittance practices | 0 | 0 | 15 |

© 2010 The Actuarial Profession • www.actuaries.org.uk

17

Trend Assumptions

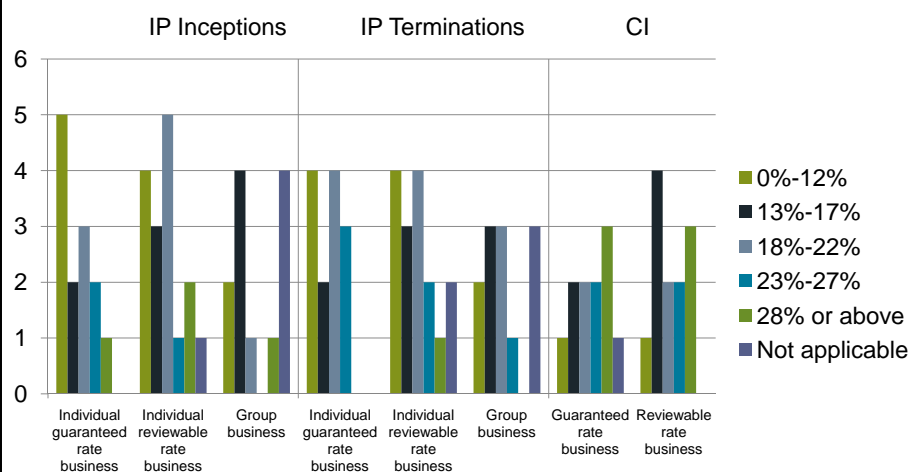


NB: Only Deterioration options were included in the CI survey – 3 CI respondents skipped this question

© 2010 The Actuarial Profession • www.actuaries.org.uk

18

Reserving Margins overview



© 2010 The Actuarial Profession • www.actuaries.org.uk

19

CI Margins for Statutory Valuation

| | | Reviewable Margin | | | | | N/A |
|-------------------|--------------|-------------------|---------|---------|---------|--------------|-----|
| | | 0%-12% | 13%-17% | 18%-22% | 23%-27% | 28% or above | |
| Guaranteed Margin | 0%-12% | 1 | 0 | 0 | 0 | 0 | 0 |
| | 13%-17% | 0 | 2 | 0 | 0 | 0 | 0 |
| | 18%-22% | 0 | 1 | 1 | 0 | 0 | 0 |
| | 23%-27% | 0 | 1 | 0 | 1 | 0 | 0 |
| | 28% or above | 0 | 0 | 0 | 1 | 2 | 0 |
| | N/A | 0 | 0 | 0 | 0 | 1 | 0 |

© 2010 The Actuarial Profession • www.actuaries.org.uk

20

Individual IP Terminations Margins for Statutory Valuation

| | | Reviewable Margin | | | | | N/A |
|-------------------|--------------|-------------------|---------|---------|---------|--------------|-----|
| | | 0%-12% | 13%-17% | 18%-22% | 23%-27% | 28% or above | |
| Guaranteed Margin | 0%-12% | 3 | 0 | 0 | 0 | 0 | 1 |
| | 13%-17% | 0 | 2 | 0 | 0 | 0 | 0 |
| | 18%-22% | 0 | 0 | 4 | 0 | 0 | 0 |
| | 23%-27% | 0 | 1 | 0 | 2 | 0 | 0 |
| | 28% or above | 0 | 0 | 0 | 0 | 0 | 0 |
| | N/A | 0 | 0 | 0 | 0 | 0 | 0 |
| | No response | 1 | 0 | 0 | 0 | 1 | 1 |

© 2010 The Actuarial Profession • www.actuaries.org.uk

21

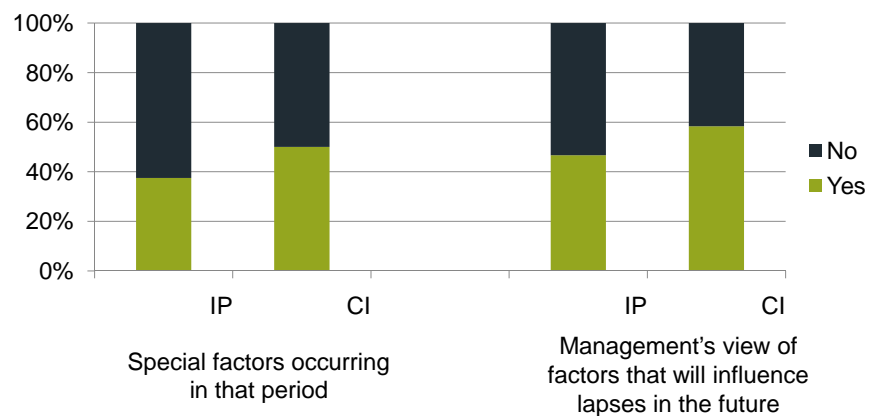
Correlations Between IP Inception and Termination Pads – Guaranteed Individual business

| | | Termination Margin | | | | |
|------------------|--------------|--------------------|---------|---------|---------|--------------|
| | | 0%-12% | 13%-17% | 18%-22% | 23%-27% | 28% or above |
| Inception Margin | 0%-12% | 3 | 0 | 2 | 0 | 0 |
| | 13%-17% | 1 | 1 | 0 | 0 | 0 |
| | 18%-22% | 0 | 1 | 2 | 0 | 0 |
| | 23%-27% | 0 | 0 | 0 | 2 | 0 |
| | 28% or above | 0 | 0 | 0 | 1 | 0 |

© 2010 The Actuarial Profession • www.actuaries.org.uk

22

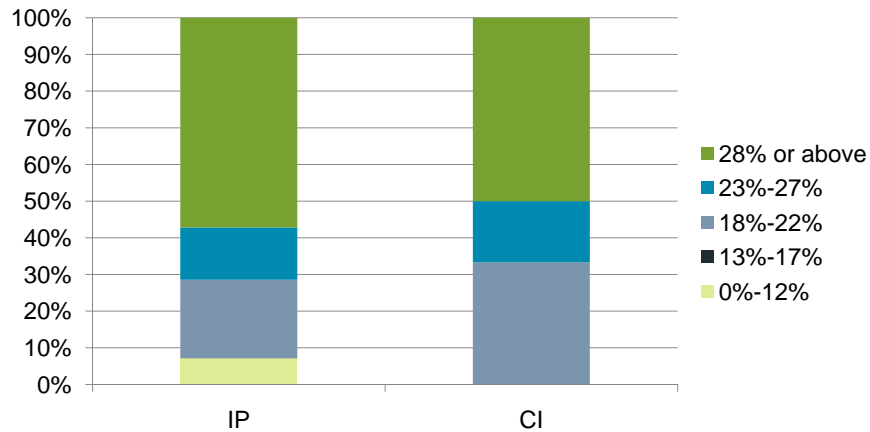
Adjustments to Past Lapse Experience



© 2010 The Actuarial Profession • www.actuaries.org.uk

23

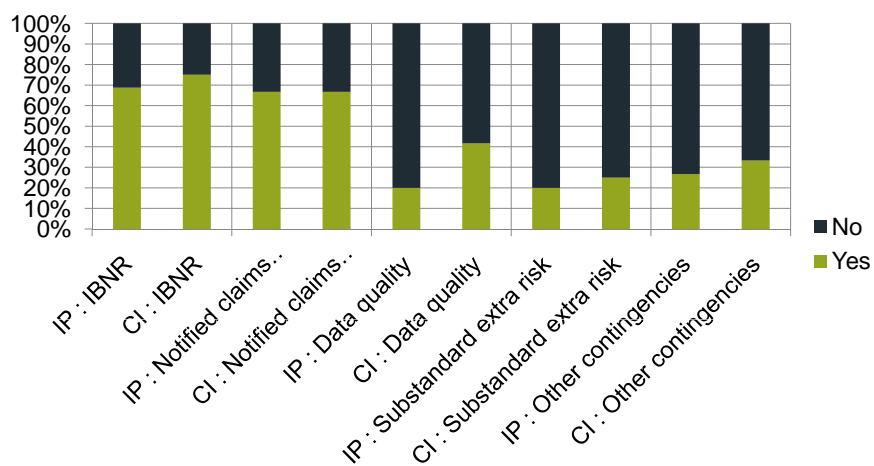
Reserving Margins for Lapses



© 2010 The Actuarial Profession • www.actuaries.org.uk

24

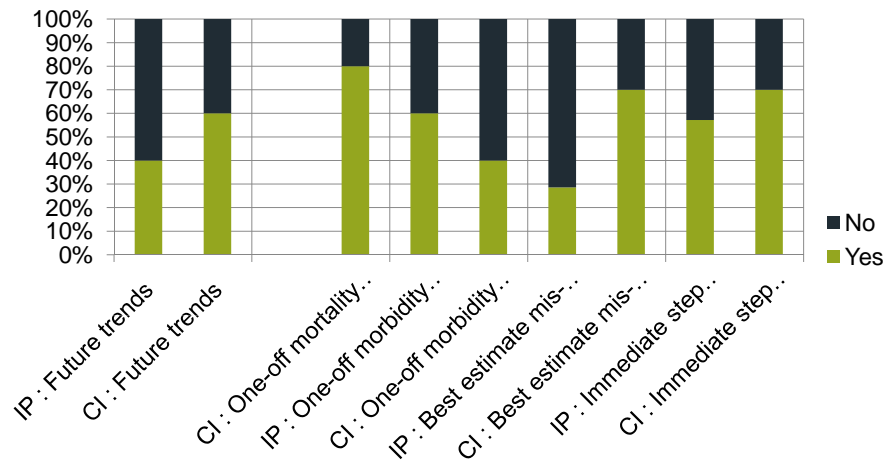
Explicit Additional Reserves



© 2010 The Actuarial Profession • www.actuaries.org.uk

25

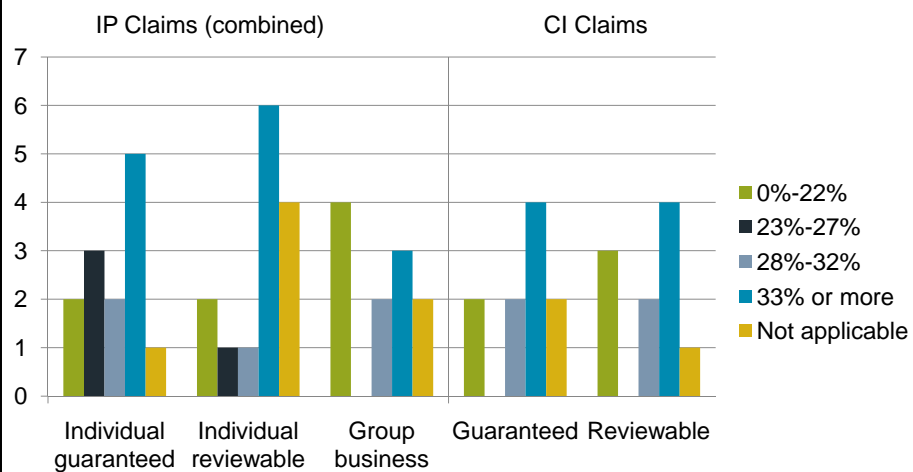
ICA Scenarios



© 2010 The Actuarial Profession • www.actuaries.org.uk

26

99.5% Confidence Interval Equivalent Margins



© 2010 The Actuarial Profession • www.actuaries.org.uk

27

CI – ICA 99.5% Margin vs Statutory Margin

| | | ICA 99.5% Margin | | | | | No Answer |
|----------------------------|----------------|------------------|---------|---------|-------------|----------------|-----------|
| | | 0%-22% | 23%-27% | 28%-32% | 33% or more | Not applicable | |
| Statutory Reserving Margin | 0%-12% | 1 | 0 | 0 | 0 | 0 | 0 |
| | 13%-17% | 0 | 0 | 0 | 1 | 0 | 1 |
| | 18%-22% | 0 | 0 | 1 | 0 | 1 | 0 |
| | 23%-27% | 0 | 0 | 0 | 2 | 0 | 0 |
| | 28% or above | 1 | 0 | 1 | 1 | 0 | 0 |
| | Not applicable | 0 | 0 | 0 | 0 | 1 | 0 |

© 2010 The Actuarial Profession • www.actuaries.org.uk

28

No Appetite for Stochastic Models

- Only 1 Company said they would develop a stochastic model:
 - For CI for ICA/ORSA Purposes
- 2 companies said they already had one:
 - 1 for CI for ICA/ORSA purposes
 - 1 for IP (inceptions and terminations) for ICA/ORSA purposes
- Consistent with last survey.

© 2010 The Actuarial Profession • www.actuaries.org.uk

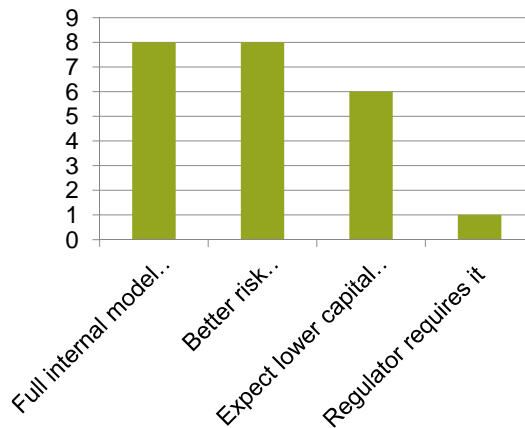
29

Internal Model for IP

10 from 16 responses
said they would
develop an internal
model

(7 from 10 for
companies stating IP
significant).

Motivations were:



© 2010 The Actuarial Profession • www.actuaries.org.uk

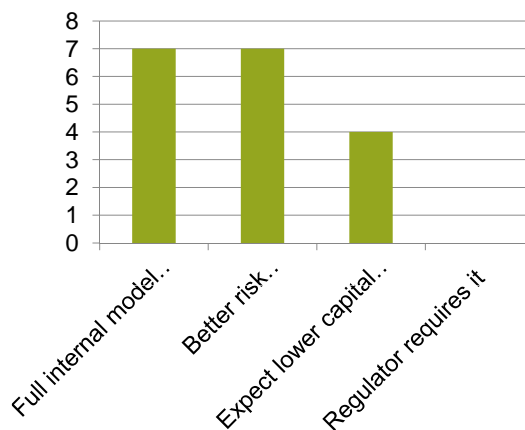
30

Internal Model for CI

8 from 11* responses
said they would
develop an internal
model

(7* from 8 for
companies stating CI
significant).

Motivations were:



* One of the 7 didn't answer the question but did go on to give reasons why they were building an internal model so I have inferred a yes answer.

© 2010 The Actuarial Profession • www.actuaries.org.uk

31

Next Steps

- What would like to see next?
 - More analysis? What is interesting/useful to you?
 - Any appetite to make this a regular survey?
 - If so, when should we conduct the next survey?

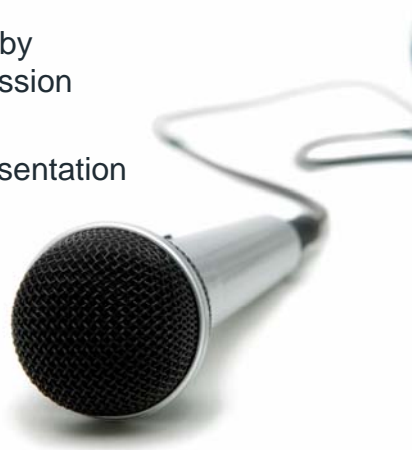
© 2010 The Actuarial Profession • www.actuaries.org.uk

32

Questions or comments?

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

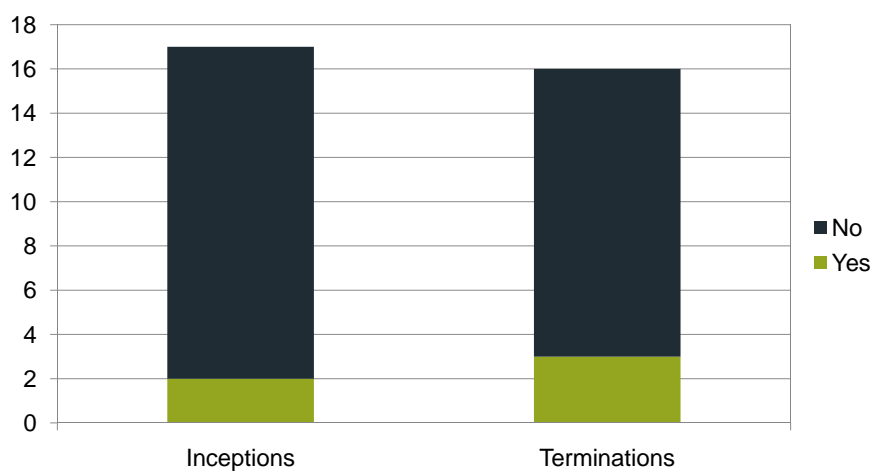
The views expressed in this presentation are those of the presenter.



© 2010 The Actuarial Profession • www.actuaries.org.uk

33

IP Experience Analysed By Cause of Claim?



© 2010 The Actuarial Profession • www.actuaries.org.uk

34