Agenda

- 9:40 Plenary
- 10:15 Workshops A
- 11:15 Coffee
- 11:35 Workshops B
- 12:35 Lunch
- 13:40 Workshops C
- 14:40 Workshops D
- 15:40 Tea
- 16:00 Workshops E
- 17:00 Close

Workshop Session A

- A1 Integrating ICAs and Pricing
  JB Crozet, PricewaterhouseCoopers
  Wolfson Theatre

- A2 Personal Lines Pricing – Challenges in International Business
  Karl Bedlow, RBS Insurance
  Council Chamber

- A3 Practical Pricing for Commercial Lines – An Introduction
  Martin Cross
  Sloane Room

- A4 What do London Market Actuaries Price?
  Wendy Russell, Catlin & Ana Mata, MadBlas
  Censors Room
Workshop Session B

- B1 The Gender Directive: Age discrimination & Free Market Pricing Issues
  Nathan Williams, Royal & SunAlliance
  Wolfson Theatre

- B2 Demand Modelling in Personal Lines
  James Tanser, Watson Wyatt
  Censors Room

- B3 Applying GLMs to Pricing London Market and Commercial Lines
  Ryan Warren, Watson Wyatt
  Council Chamber

- B4 Trends in Pricing, What People are Doing Differently Today
  Vincent Branch
  Sloane Room

Workshop Session C

- C1 Estimating the Predictive Distribution for Risk Premiums Using Bootstrapping
  Derek Bain, Axa
  Wolfson Theatre

- C2 Principles of Non-Proportional Reinsurance Pricing
  Tom Wright, Deloitte
  Council Chamber

- C3 Conflicting Objectives – Putting Commercial Lines Pricing in Context
  David O’Connor, Towers Perrin
  Censors Room

- C4 Pricing Issues for Financial Institutions
  Mark Flower, Axa
  Sloane Room

Workshop Session D

- D1 ISO Industry Data – How it Works in the US and What Might be Done in the UK
  Beth Fitzgerald, ISO
  Wolfson Theatre

- D2 Predictive Modelling for Commercial Lines
  Jim Guszcza, Deloitte
  Sloane Room

- D3 Developments in Price Optimisation
  Stephen Jones and Tony Lovick, EMB
  Council Chamber

- D4 London Market Pricing in the Soft Market
  Sanjiv Chandaria, Watson Wyatt
  Censors Room
Workshop Session E

- E1 Capital Allocation in Pricing
  Martin Cairns, EMB and Buu Triang, ACE
  Wolfson Theatre

- E2 Price Optimisation – A European Case Study
  Mark Ailey & Francisco Gomez-Arribi, Towers Perrin
  Censors Room

- E3 Understanding the Customer Value Chain
  Mike Brockman, EMB
  Council Chamber

- E4 Marine Hull Pricing
  Tom Jewett, Swiss Re
  Sloane Room

Plenary

- How Do You Solve a Problem Like Flood?
  Simon Black, Norwich Union

How Do You Solve a Problem Like Flood?
Simon Black, Norwich Union

Tewkesbury 2007
Simple……
- Analyse past experience
- Project into the future
- Allow for market dynamics
- Achieve return on capital!!!

So the past...
UK Property (Commercial & Personal)
Major insured weather events 1980-2005, excl subsidence

- Flood’ includes ‘storm’ but only the Jan ’05 event included very high winds

So the past...
Reserves – always a good guide to the future!
So the past…
Analyse a few year’s data and play with GLMs

<table>
<thead>
<tr>
<th></th>
<th>Personal - Flood</th>
<th>Personal - Weather</th>
<th>Commercial - Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Year</td>
<td>2.5%</td>
<td>10.9%</td>
<td>25.4%</td>
</tr>
<tr>
<td>5 Year</td>
<td>3.3%</td>
<td>15.8%</td>
<td>20.7%</td>
</tr>
<tr>
<td>10 Year</td>
<td>4.1%</td>
<td>17.3%</td>
<td>20.7%</td>
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How do you change rates?

And the future’s not much better…
Climate change?

Hurricane Vince (9/10/05) in a region not previously expected to support such weather events (easterly North Atlantic, Maderia)

Last week… 2 seminars… Climate change? 1 yes 1 no

And the future’s not much better…
Climate change?

- Increase in greenhouse gases
- Increase in temperature air + sea
- Increase in humidity
- Increase in sea level
- More extreme weather events:
  - e.g. windstorms, hail storms, rain storms and drought
  - Important for insurer:
    - stronger events
    - frequent events
What do we need to assess risk?

- Frequency
- Severity
- Where?
- When?
- From what?
- Mitigating features
  - Rivers, the coast, drains, surface water, dams...
- Rivers, the coast, drains, surface water, dams...

That means data... and detail

NEXTMap Britain

Elevation Model + Radar Image + Flood data from CEH = Flood Risk Assessment

Flood layers

Radar image

DTM shaded to 10m contours

DTM shaded to 1m contours

75 Year Flood Outline

Flood outlines overlaid on DTM
Insurance assessment of flood risk

cross-section of the flooded valley

©Intermap Technologies Inc

And more detail

Lidar

Flood defences
- where they are
- state of repair
- protection they offer
- properties benefiting

Dams
- where some are
- their state of repair
- their capacity

Drains
- where they are
- their state of repair
- their capacity
- ‘wet spots’

OR
we can’t go to one place to find out

Throw in some water and watch where it goes

Tewkesbury July 2007 Model View and Actual

©Infoterra

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making入侵者无从下手
So you’ve done the analysis

And the FD wants to reflect the true cost of capital – say 50% for volatility - ouch

Return periods???
• Just a frequency measure
• 1 in 75, 1 in 200 etc.
• Summer of 07: 1 in 170

Claims
• £1k - £300k+
• Average £25k-£50k!!

And a moderate commercial risk...
0.4% x £30k = £120

Flood premium for a high risk semi
1.3% x £100k = £1,300

According to the EA...
517,000 high risk properties
2.2 million properties at risk
And that excludes drainage, dam, groundwater

In reality

A typical Commercial process:
• Underwriter receives risk
• References system/pseudo-scientific rates
• Moderates rates based on
• past claims experience
• level of risk mitigation
• site specific features (e.g. only the admin block is at risk)
• Rate combined with other perils to form a technical premium
• Overall premium rounded and then “traded” by broker

So how much did we charge for flood?

Reinsurance

• Clever models need calibrating
• Tricky - see top slice which varies by XOL limit
• Rely on primary insurer’s data
• Consider European, worldwide and UK experience
Never underestimate PR... one comment lost circa £500m

Knowing the 'right' flood premium and charging it are two very different things.

How Do You Solve a Problem Like Flood?
Simon Black, Norwich Union

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