2010 Ratemaking Survey

Presented By:
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Objective

- Companion to 2008 CAS Reserving Survey
- Ratemaking Survey initially proposed in GRIP paper
- Desire to coordinate U.S. with UK, Australia efforts
- Desire to cover all aspects of pricing (Personal, Commercial, London market & Reinsurance)
- Focus on what people are actually using
- Global coverage with a comparison of results by region
- Report back to the professions (GIRO, CAS Annual, RPM)
- Important part of the CAS Research Centennial Goals

Process

- UK, US and Australian working parties
- Started with Reserve Survey questions
- Three separate sets of questions, three interpretations of scope, three time zones
- Each group came up with recommendations and reviewed other teams questions
- Final survey was product of US/UK working parties
- Survey included:
  - 34 Common Questions
  - 11 US questions
  - 14 UK questions
- Rolled out early July until mid-August to:
  - CAS mailing list
  - GIRO mailing list
  - LMAG
  - CAE
1,295 responses to the first question
- 913 from the US
- 89 from Canada
- 135 from the UK
- 46 from Europe (17 Switzerland, 6 Germany, 3 Sweden)
- 92 from Rest of the World (Bermuda-19, China-10, Uruguay-8, Australia-6)
- 20 from out of this world!

602 (46%) finished the survey
- 46% from US
- 34% from Canada
- 49% from UK
- 63% from Europe
- 42% from Rest of World

Response by Employer Type

<table>
<thead>
<tr>
<th>Employer Type</th>
<th>Europe</th>
<th>ROW</th>
<th>UK</th>
<th>US</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker/Intermediary</td>
<td>2%</td>
<td>5%</td>
<td>7%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Small Consulting</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>Large Consulting</td>
<td>7%</td>
<td>13%</td>
<td>5%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>Insurance Information Entity (ISO, NCCI, etc.)</td>
<td>0%</td>
<td>3%</td>
<td>0%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Lloyd’s Syndicate</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Primary Insurer (RMLI)</td>
<td>33%</td>
<td>33%</td>
<td>18%</td>
<td>15%</td>
<td>28%</td>
</tr>
<tr>
<td>Primary Insurer (Multi-National)</td>
<td>35%</td>
<td>15%</td>
<td>3%</td>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>Primary Insurer (Regional or Monoline)</td>
<td>6%</td>
<td>14%</td>
<td>5%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Regulatory Body</td>
<td>0%</td>
<td>4%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Reinsurer</td>
<td>13%</td>
<td>20%</td>
<td>12%</td>
<td>6%</td>
<td>25%</td>
</tr>
</tbody>
</table>

602 respondents from Primary Carriers
- Only 9% from Reinsurers – largest for Europe/ROW
- Brokers fairly small representation, largest concentration from UK

Response by Length of Experience
- 50% of the responses were from individuals with < 10 years. This increased to 70% for non-US responses.
- 75% of the respondents from the UK have < 10 years of experience compared to 46% for US.
- Nearly 80% are credentialed actuaries, another 15% under the course of study to become actuaries.
Nearly 50% of responses were from a Senior or Lead Actuary.
+18% of responses were from a Chief Actuary/Practice Leader incl. management of a business segment.

Slightly more than 50% indicated their principal role is Pricing.
Approximately 15% indicated they perform Reserving/Pricing and Capital modeling.

Personal Lines dominate. UK lowest percentage personal lines, but more diverse than other regions.
What are the top 3 product lines?

- Personal Lines Property is second largest line for nearly 30% of US respondents

Technique - Main Line of Business

- Experience and Exposure Rating most common for Commercial lines
- Freq/Severity and Predictive Modeling popular for Personal Lines
- Judgment commonly used for several lines

Personal Lines Individual Account Pricing Techniques By Region

- Experience and Exposure Rating most common for Commercial lines
- Freq/Severity and Predictive Modeling popular for Personal Lines
- Judgment commonly used for several lines
Pricing Techniques
Commercial Lines Individual Account
Pricing Techniques By Region

Pricing Techniques
Personal Lines Methods By Region

Pricing Techniques
Commercial Lines Methods By Region
Pricing Techniques

Data Sources (Trend) by Region

- EU
- ROW
- UK
- US/Canada

UK is region with largest reliance on Industry or Advisory Data Sources
US is region with largest reliance on Account Specific information

Pricing Techniques

Loadings – Profit Provision

- Combined Ratio most common
- Return on Capital popular in US/Canada, Capital model in UK

Pricing Techniques

Loadings – Large Losses

- No adjustment
- Cap
- Separate model
Pricing Techniques

Loadings – Type of Cat Models Used

- Single vendor model
- Vendor w/ in-house adjust
- Pure in-house
- Blended
- Actual experience

Types of Platforms Used for Pricing

- Personal lines
- Commercial lines
- Liability
- Reinsurance

Form of Estimates Given to Employer/Client

- More than 80% provide a final price subject to UW discretion
- Range of Estimates less than 10% of the time
Pricing Techniques
Internal Price Monitoring

- 80% monitor at least renewal price levels, highest in UK/EU
- 20% do not monitor internal price levels at all or only follow industry trends

Views
Do you believe that the price monitoring process at your company/client is sufficiently robust and reasonable enough for the intended purpose and the client/senior management have sufficient understanding of the uncertainty inherent in the results?

- 57% believe the process is sufficiently robust
- More than 20% believe it is not robust, but uncertainty is understood

Operations
Who is involved in producing the pricing deliverable?

- Underwriters - Leads Process (UK-26%, US-10%)
- Statisticians - Core Member or Leads Process (approximately 20% globally)
- Senior Mgmt - Core Members or Leads Process (UK-29%, US-45%)
- Brokers - No Involvement (UK-45%, US-58%)
- Actuarial Consultants - No Involvement (UK-73%, US-59%)
Regional Questions
For Actuaries Operating in North America

Credibility Techniques

- Credibility Weighting/Exposure & Experience Rating
- Approaches Used to Assign Credibility

Determining Rate Need Uncertainty

- Recursive methods
- Varying assumptions, modeling techniques, etc.
- Statistical Bootstrap
- Parametric Bootstrap [i.e., FFT]
- Judgment
- Not applicable

Determining Correlation/Diversification

- Nearly 1/3 do not reflect correlation/diversification in their results
- When reflected, most common are judgment and analysis of own data
Regional Questions
For Actuaries Operating in North America

Predictive Modeling Tools

- Classification Ratemaking
- Territorial Ratemaking

Nearly 2/3 rely on internal data
< 10% use Vendor/Advisory Org data

Regional Questions
For Actuaries Operating Outside of North America

Which elements of pricing are integrated with Reserving and Capital models?

Methods

Integration with reserving and capital
More with reserving, less capital

Regional Questions
For Actuaries Operating Outside of North America
Impact of Solvency II on Pricing

More than ½ in UK indicate there is some impact to pricing
Views
Constraints to Using Stochastic Methods in Pricing

- Some overlap with responses
- Principal reasons vary by region: Data limitations (EU/ROW), No benefit (UK) and Lack of familiarity (US)

Views
Value of Educational Support

-US seems to lead other regions

Write-In Comments
How can the professional organizations improve educational opportunities for pricing actuaries?

- Seminars (preferably webinars) that cover a detailed technical example
- More hands on training (e.g., computer lab sessions)
- Downloadable spreadsheets that work through a particular method/approach
- Publication of a pricing handbook
- More information on methods that are being used overseas
- Sessions at (CAS) meetings tend not to be balanced (too focused or too general) and are too short.
Next steps

- Survey will be jointly analysed by US/UK working parties
- Full report written up and published
- Summarized results presented in Actuarial Review
- Further presentations booked
  - CAS RPM Seminar (March 2011)
- Further presentations considered:
  - UK Pricing Seminar (June 2011)
- Future Ratemaking Survey