PREMIUM RATING INDICES
Workshop
2001 GIRO / CAS Convention

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Members of the Working Party

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Summary of Workshop

• Background
• Objectives of workshop
• Definition of rating indices
• Simple example of application
• Uses
• Practical problems
• Lloyd’s index
• Deriving the increase rate
• Other indices
• Future developments
Background
• Lloyd's forecasts

Illustrating The Need

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Illustrating The Need
Background

• Lloyd’s forecasts
• FSA

Objectives of Workshop

• Discuss potential uses
• Discuss practical issues & solutions
• Decide on next steps

Definition

• Index = System by which changes in the value of something, and the rate at which it changes, can be measured
• So, Rating Index = means of comparing the level of premium rates from one period to the next
Simple Example of an Index and Its Application to Reserving

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% Change = (Rating Index / Previous Rating Index) - 1

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<tr>
<th>Year</th>
<th>Rating Index</th>
<th>% Change</th>
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<tr>
<td>1993</td>
<td>100</td>
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<td>-2%</td>
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<td>1996</td>
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<td>1999</td>
<td>80</td>
<td>-6%</td>
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<td>2000</td>
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Estimated ULR

Adjusted ULR (1993 terms) = Estimated ULR * Rating Index / Original Rating Index

Average of Adjusted ULR (1993-1998) = 91

Prior ULR = Average of Adjusted ULR * Original Rating Index / Rating Index

Future % Development = 20%

IBNR % of Premium = Future % Development * Prior ULR

Incurred % [Data] = 82%

Estimated ULR = Incurred % [Data] + IBNR % of Premium

Definition

- Different forms of index
- Make sure appropriate for use
  - Expected claim experience
  - Premium rate adequacy
  - Profitability
  - Incremental / Cumulative
  - Inflation
  - Prospective / After event
Uses

• Actual (from Questionnaire):
  – Reserving
  – Pricing analyses
  – Initial view of profitability / capital requirements
  – Understanding the insurance cycle
  – Decisions on targeting capacity utilisation
  – Business plan
    • Construction
    • Review

Uses

• Potential (from Questionnaire):
  – Input for DFA models
  – Justification / explanation of results to regulator
  – Assessing value of outwards reinsurance
  – Benchmark for underwriting performance
  – Explanation to brokers / clients on why rates have moved
  – Make underwriters aware of potential costs of writing in soft market

Uses

• Other Possible:
  – Monitoring underwriting performance v market
  – Marketing
  – Regulatory control of capital requirements
  – …?
Methods of Construction

- Actual (from Questionnaire)
  - Underwriter’s view on rate changes
    - Asked annually
    - Asked for each risk
  - ULR at time of writing risk
  - Actual premium v Technical benchmark
  - Consider underlying business rate movements

Practical Problems (from Questionnaire)

- Need for Underwriter to do additional work
- Subjectivity
- Consistency across time
- Construction needs to reflect use
- How to allow for new business
- Allowance for changes in cover
- Delegated authorities / binders
- Allowance for outwards reinsurance
- Is Premium the best exposure measure anyway?

Practical Problems

- Treatment of non-renewed contracts
- Inwards reinsurance allowance for changes in cedants’ rating levels
Lloyd’s Premium Rating Index

- The need for the index
- Construction of the index
  - inception date
  - Frequency
  - Classes of business
  - Collection of data
  - Method of construction
  - Weakness of index

Classes of Business

- Aviation
  aviation hull, aviation liability, aviation product and aviation XOL
- Marine
  marine cargo, marine liability, marine hull, marine war, marine XOL and Yacht
- Energy
  offshore PD, onshore PD, liability

Classes of Business

- Non marine
  bankers bond, D&O, EL, engineering, extended warranty, GL, livestock, med mal, PA, political risks, PI, property (US / non US / direct / assumed / retro), specie
- Motor
  fleet, overseas, private comp, private non comp, UK motor cycles and UK other
Example of Returns

Example 2 of Returns

Deriving the Increase Rate
- Same aggregate cover provided
- Premium 1999 = 0.5m, 2000 = 0.55m
- 1999 = 20 partners, 2000 = 21 partners
- Cover on a claims made basis
- The increase in premium is caused by an increase in fees
- So what is the rate of increase?
Improvements

- Is the index of any value?
- What improvements can be introduced
  - currency split?
  - different splits within market?
  - any classes missing?
  - is the frequency ok?
- What can managing agents do themselves

Other Indices

- Tillinghast motor index
- Tillinghast D&O Survey Rating Index
- CBSL market rate index
- Moody’s underwriting & rating index
- AA British insurance Index
- Marsh Aviation News

Discussion Points

- Uses
- Construction issues
- Lloyd’s index
- Future of the working party
Other Issues

• What should you do if the conclusion of the analysis is that business should only be written for certain parts of the cycle?
• What effect is better (& shared?) premium rating information going to have on the cycle?