Pricing MI in the London Market

Using pricing data to improve underwriting decision-making and profitability
Agenda

• Problems and excuses
• A poor first effort
• Some glimmers of hope
• New MI platforms
• What makes pricing MI useful?
• Questions and Comments
• References
Problems and excuses

• A lack of data
• Heterogeneous risks
• Operational overheads
• Market practice

• IT & development expense
A poor first effort

• MI used by underwriters to assess class performance

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Is there a graph?

Do we get this by sub-class?

Do we get this by Broker?

• All too often, not even the easy stuff is done...

• MI lacks granularity and only informs long after the horse has bolted.
Some glimmers of hope

- Exposure modelling is more developed for nat cat
- Sophisticated MI is available when a business case can be made
- Graphics: RMS
New MI platforms

• Excel-based solutions not robust or scalable
• In-house development can be expensive
• New online platforms have emerged to bridge the gap:
  – R/Shiny, Plotly and Google Charts
  – Tableau
  – Microsoft Power BI
New platforms: R & Shiny

- Open source stats package R talks to excel and databases
- Online graphics package Shiny allows R graphics to be deployed using a web browser
- Combination offers a cost-effective way of getting actuarial work out into the business without reliance on internal IT.
New platforms: R/Shiny & Plotly

- Plotly charts running in Shiny
- Charts are interactive, allowing underwriters controlled access to data

- Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.
New platforms: R/Shiny & Plotly

- Plotly charts running in Shiny
- Charts are interactive, allowing underwriters controlled access to data

* Dummy underwriting data shown here.
New platforms: R/Shiny & Google Charts

- Animated bubble chart from Google Charts in Shiny
- Popularised by Hans Rosling from WHO
- Used by Lloyd’s to show development over time.

- Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.
New platforms: Tableau

- Tableau is a package option
- Interactive dashboards
- Connectivity to various data sources

- Tableau example shown [here](#).
New platforms: Microsoft Power BI

- Microsoft Power BI has excellent integration with standard tools
- Similar interactive dashboards and data visualisation

- Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.
What makes pricing MI useful?

• For analytics to be most useful to underwriters they must be presented in underwriting terms:
  
  – Show *risk rates on line*
  – Show results by *rating factor*
  – Show results by *segment*
  – Record *exposure*
  – *Benchmark* risks

• By matching the underwriter’s own rating process, pricing model data can feed directly into improved insight

• *Loss ratios aren’t enough on their own, nor Achieved to Technical.*
What makes pricing MI useful?

• With full underwriter engagement a virtuous circle emerges...

  Better MI → More UW engagement

  Better Models

  Better Data

• *Circle feeds improved underwriting decision-making and profitability.*
Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.
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<td>Matthew Evans</td>
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