

#### GIRO conference and exhibition 2010 Phil Ellis

## Plenary One Commercial Lines Pricing

12-15 October 2010

## Who and What

#### Who are you?

- The (mixed) cream of the actuarial profession
  - many of whom know lots about commercial pricing

#### Who am I?

- The Group Actuary at Amlin for the last 11 years
  - where other actuaries do the "real work"

#### What do I plan to do with you?

Educate, entertain, provoke, amaze, cause reflection, etc
 – in 20 minutes (!)

## **Commercial Lines Business**

- Contrast is with Personal Lines
- Includes, for me, all B2B including reinsurances
  - In fact, "Commercial Lines" ≈ mix for Syndicate 2001
    - All classes in Lloyd's market, including motor fleet, small businesses, excluding life
- Enormous variety
  - Types of risk
  - "Size" of risks
    - Exposure, volatility, claim severity, frequency, correlations
  - Market dynamics
    - Sophistication, traditions, approaches (brokers, wordings, procedures),

### **Generic Commercial Lines Issues**

#### Exposures can be complex and change over time

- Entity appetite, positioning of book
- Wordings, deductibles/limits, nature of underlying business (e.g. Risk XL)
- Data quality variable, and worse than actuaries want
  - Brokers may not always be as helpful as possible
  - Grouping is common
    - Exposures in bands
    - Locations not individually geo-coded
    - Claims bordereau
- Most classes have "unique" elements
  - Can spend many years becoming a "real" expert

## The role and position of the actuary

- Underwriter (always) and broker (almost always) are key
- Some variation on actuaries between entities
- Typically not the underwriter, but subservient
   part of a support team including claims, wordings experts
- Sometimes elevated: joint sign-off with u/w
- For some classes as important as in Personal Lines
- But ... not always necessary
  - statistician, technician, analyst, cat modeller, "fly solo"

# Numbers of actuaries in Commercial Pricing (a stunning success story)

#### **CALM 2010 survey of Lloyd's market:**

Total 382
Pricing / underwriting 102 (27%)
Cat modelling 29 (8%)
Other 251 (31% res, 19% cap)

#### Add to this the actuaries in:

- Other London market insurers
- Brokers, Consultancies, Regulators, Lloyd's, Raters, ...
- Other UK Companies
- Overseas Companies

## The life of the commercial pricing actuary

- Workload can be highly seasonal
  - vast majority of risks may renew on same day
- Unless a key lead market, may be price taker
  - only decision is to play or not at pre-defined price
- Often time pressure
- Getting "own" data may not be as easy as it should be
- Market data may be unavailable or of dubious relevance
- Exciting, entrepreneurial environment(?)

## **Technical Pricing models**

#### Key big picture issues

- Data and time constraints
- Experience rating
  - Commercial risk outcomes often very "spiky"
  - Risk likely to have changed over time
  - Hard to know true expectation and variability / percentiles

#### Exposure rating

- Often large variation between risks
- "Standard metrics" may be poor fit
- Adjustments subtle and/or judgmental
- Credibility

## The commercial pricing actuary and TAS - I

- Does the April 2010 Exposure Draft of TAS-I fit this world?
- Many actuaries very concerned that it doesn't
  - Often very different from both Life and Personal Lines
- Transactional pricing as one part of highly knowledgeable team
- Packed meetings of concerned pricing actuaries(!)
- 50 signatories to Tony Jones / UMACS response(!)
- Movement from the BAS in redrafting

## **Pricing Commercial Lines**

#### For each risk Amlin records:

- Achieved price
- Technical price
  - Actuarial model, incl. loadings for expenses, capital / profit
    - Explicit, auditable, reproducible
- Expected Loss Cost
  - Best estimate ultimate claim cost, no loadings or margins
    - Allowing for "soft factors", depending on underwriter judgement
- Rate change
- ... broken down by various sub-elements

## ERM ... surely one "killer" model is all you need?

#### Ideal world

- Build the perfect all-in model then relax
- Tick all the boxes for rating agents, Solvency II, management

#### Real world

- Work in parallel on various imperfect approaches
- Understand which sheds most light in individual circumstances
- Think when different signals don't reconcile
- Use actuarial skill and judgement to add value!

## The commercial pricing actuary and Solvency II

- Some Solvency II text arguably more ideal world than real world
   Manager sits in "insurer cockpit" with dials and knobs
- Does Use Test imply join between capital model and pricing?
- Text requires Capital Allocation and Risk Ranking
  - Each entity (and regulator) working out what this means
- I do hope it all ends happily
- Some danger of lemming-like model adoption?!

## **Rating and Profitability Indices**

- For example, the Amlin "Altimeters" date back to 1993
  - "On level" adjustment for premium rate and claim inflation
- Many others have and publish similar series
- This may make us better able to read and manage the cycle
- There are difficulties in compiling such indices
- It is tempting to believe them too much
- Are we over-selling their usefulness
  - or just not restraining keen management enough?

## **Capital Allocation**

#### Just a little go on one of my hobby horses ...

- Although it looks highly tempting
  - and sounds marvellous
- Capital allocation can be done very badly
  - and then used very badly
- Some of what I read in public domain is worrying
   and presumably this is a "select" subset of what everyone is doing?
- Amlin is adopting capital allocation very thoughtfully
  - and using it quite carefully

## **Pricing models : summary**

#### **Spectrum**

- GLM to (educated) guesswork
- Cat models to fag packets

#### Aim

- Suitable form of model
- Useful parameters and sensitivity analysis
- Make a call

Consider an example from another world

## **Search for Extra-Terrestrial Intelligence**

#### **The Drake equation**

- $N = N^* x f_p x n_e x f_l x f_i x f_c x L/T_g$ 
  - Billions of stars, but rare life
- Model first proposed in 1961, not seriously improved since
- Drake's original result was 10
- Current "plausible" estimates include 2.1, 6.5\*10<sup>-5</sup>, 2\*10<sup>4</sup>
  - Source Wikipedia
- Actuaries must price, capitalise for and reserve "binary events"
  - even with a "sound model", usefulness may be limited!

## **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.



