THE IMPLICATIONS OF THE RESERVING AND UNDERWRITING CYCLES FOR RESERVING

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WP Terms of Reference

- Review of previous work
- Investigate effects of cycle on traditional methods
- Undertake research to
  - Enhance understanding of the drivers of reserving cycle
  - Develop methods for dealing with the cycle
- Consider need for guidance

Review of Previous Work

- Many papers discussed UW cycle
- Consensus that Reserving Cycle exists
  - GRIT, Cycle Survival Kit (GIRO 2003)
- Others discussed consequences of Reserving Cycle
  - CAS (1999)
- None presented solutions
  - Tom Wright CAS 2008??
Agenda

- Shortcomings in existing methods
- Mitigating shortcomings:
  - A framework for subjective adjustments
  - Alternative modelling approaches
    - Rate indices
    - Tail length
- Real World issues

Shortcomings in Existing Reserving Methods

- Rate monitoring
- Cyclical changes in underlying risk
- Tail length

Shortcomings: Rate Monitoring & Cyclical Changes in Risk
Characteristics of a softening market (Apart from reducing prices!)

- Increased limits
- Reduced deductibles
- Loosening of terms and conditions
- New business cheaper than renewal business
- New business is someone else’s lapsed business
- Increase in competition
- Increase in propensity to claim
Shortcomings: Rate Monitoring
Issues exacerbated by:

- Under-estimation of impact of changes in terms and conditions
- Rate monitoring based on renewals only
- Unmodelled impact from winner’s curse
- Oversight bias
- Management intervention
- Compounding of effects year-on-year

Shortcomings: Rate Monitoring & Cyclical Changes in Risk
Impact on Reserving:

- Dynamics of underwriting cycle not fully reflected in many rate monitoring exercises
- Prior loss ratios rely on rate monitoring conclusions
- Early stages of reserving often relies on the prior loss ratio or a blended approach (e.g. Bornhuetter-Ferguson)... especially for longer-tailed classes

Shortcomings: Tail Length

Source: Cycle Survival Kit Paper; GIRO 2003
Shortcomings: Tail Length
Potential Reasons for Tail Lengthening in a Soft Market:

- Change to policy structure, e.g.:
  - Reductions in deductibles leading to more attritional losses
  - Reductions in aggregate deductibles leading to more aggregate breaches
  - Weakening of claim reporting requirements
  - More multi-year policies
- Financial considerations:
  - Increased tendency for disputing claims
  - Changes in case reserving philosophy

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Shortcomings: Tail Length Model
Framework for subjective adjustments:
Overview
- Portfolios will change as the cycle softens
- Change → selection and survivorship bias
- There will be plausible reasons for changes
- There will not be compelling evidence of under-pricing

Portfolio change increases the risk of underperformance
Framework: Mix of business
- Increasing levels of delegation
- Increasing cat / large loss risk
- Increasing large limit + large premium policies
  - $ swap or attrition
  - Large policies are competitive
- Segment and target profitable sectors
- Policy innovation

Framework: Increasing limit
- Reasons to increase limit
  - Increased confidence in performance of hard years
  - Increased confidence in underwriters
  - Commodity price increases
  - Write against reinsurance
  - Brokers slicing and layering
- Impact on profitability difficult to quantify
  - Changes in sub-limits and aggregates deductibles
  - Obscured by signing down
  - Uncertainty over correct excess ILF

Framework: Policy length
- Binder inception date
- Underlying policy length
- Multi-year deals / resigning
Framework: Rate recording

- The tendency is to underestimate the true drop in premiums rates in a “soft” market
- Robust rate recording can help avoiding underestimation of reserves
- Good practice to understand:
  - Risk by risk analysis
  - Rates changes split by components?
  - New Business/renewals/lapse business
  - Frequent/reliable process?

Framework: Price adequacy

- How is the target price derived?
- How does this affect the reserving?
- What types of adjustments should be made?

Framework: Soft Information

- Some soft factors can also affect profitability and tail lengthening.
- Good practice to try and understand:
  - Economic conditions
  - Terms and conditions
  - Changes in underwriting
Mitigating Issues Arising from Rate Indices

- Use alternative exposure measures
- Allow for rate differentials between new, renewed and lapsed business
- Adjust for changing limits and deductibles
- Adjust for changing terms and conditions

Mitigating Issues Affecting Tail Length

- Derive separate development patterns for hard and soft market conditions
- Use curve fitting and vary parameters

Booked Reserves not Equal to Best Estimates

Two reasons:
- Actuarial estimate contains margin
- The Board books a reserve that is different from the actuarial estimate
Actuarial Estimate Contains Margin

- Estimates often include elements of prudence
- Best estimate may not even be calculated
- Prudent reserves calculated using same projection techniques as best estimate reserves - so distorted by the same issues
- May be driven by management's wishes

Booked Reserves Differ from Actuarial Estimate

- May differ from initial actuarial estimate
- … or from final actuarial estimate
- Tendency to be more prudent in hard market conditions than in soft market conditions
- Impossible to tell what is causing an observed reserving cycle without inside knowledge
- Eliminating the actuarial reserving cycle may not eliminate the cycle in booked reserves

Summary

- Reserving Cycle exists
  - Empirical evidence
  - Shortcomings of existing methods
- There are ways to deal with it
  - Within existing reserving framework
    - Modified models
    - Structured application of judgement
  - Data issues
  - New approaches…?