

# Reinsurance Reserving: Top-Down vs. Bottom-up

Gary Blumsohn

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# History

- Late 2001 startup
- Small staff
- Most premium from a small number of larger contracts.
  - Typically, 30 contracts comprise about 75% of annual premium in a year
  - Not the same 30 contracts each year.
  - Inconsistent inception dates & terms

# More History

- Reserving initially done at contract level.
  - Some exceptions – e.g., casualty clash, property cat, facultative, ...
    - Done in the aggregate, but typical actuarial aggregate methods are somewhat iffy here as well.
  - Focus by actuaries, underwriters, senior management on individual deals.
  - Better information – in both directions.
  - More believable.
- First aggregate reserve study in 2006
  - First page loudly proclaimed it to be “**Junk**”

## The ***Most Stable*** casualty development triangle from the 2010 reserve study

	3	7	11	15	19	23	27	31
2002		9.692	4.751	1.263	1.177	1.138	1.006	1.025
2003	3.984	7.247	2.394	1.434	1.103	1.020	1.146	
2004	34.595	3.050	1.724	1.386	1.022	1.044		
2005	62.286	2.907	2.209	1.448	1.232			
2006	184.445	8.052	2.748	2.114				
2007	936.539	4.872	2.615					
2008	38.197	3.019						
2009	7.229							

1. Factor selection?
2. Tail?
3. Blumsohn/Laufer, *Unstable Loss Development Factors*, CAS Forum, Spring 2009: 30% CV of mean loss reserve in an unstable triangle

# What to do?

- Not enough data to do anything fancy, even when data is cumulated.
- As benchmarks, calculate chain ladder and B-F for both case-incurred and paid for each contract.
- Put a bunch of people in a room for a couple of days and let them hash it out.

# The middle ground

- No-one argues there is no benefit from reviewing
  - individual contracts.
  - aggregated data.
- “Happy medium” is not in the middle – even for large reinsurers.
  - Aggregate approach:
    - How much statistical credibility does “large” triangle have?
    - How stable is data?
    - How predictive of the future?
    - How much extra information do you gain from accumulating contracts?
  - Contract-level approach:
    - How much extra information do you gain from understanding the dynamics (claims, types of business written, cedent’s strategy,...) of each account?

# Practical Issues

- Need data, including loss pick and development pattern at the contract level from the start.
- Do you get crushed by ever-larger buildup of contracts?
  - No, you just get ever-more efficient at weeding out contracts you know won't change.

# Bottom Line

- You're going to get the reserves wrong
- You want the earliest warning of things going wrong
  - Not only because you care about reserves.
  - Feedback for underwriting and other later decisions.
  - Build culture of intense focus on profitability of the business written – historically and going forward.
- Makes financial reporting cleaner
  - everything at a granular level, so more a process of adding things up, rather than splitting them by black-box methods.

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