

Introduction to Exposure and Experience Rating A Case Study

**Mike Angelina, Endurance Specialty Holdings
CARE Seminar – INTMD-1
Philadelphia, PA
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CARE 2011 – Introduction to Exposure and Experience

1

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2

INTMD-1:

Introduction to Exposure and Experience Rating

This session will introduce the mechanics and finer points of Exposure and Experience reinsurance rating methodologies. A Case Study will be used to highlight the approaches typically taken by reinsurance practitioners. An initial comparison of the results will be made, highlighting the differences between the results, and the difficulties with deriving a single estimate.

Moderator/Panelist:

Michael E. Angelina, Chief Actuary and Chief Risk Officer,
Endurance Specialty Holdings, Ltd.

Panelists:

Maria Morrill, Senior Vice President, Willis Re, Inc.
John Buchanan, Senior Vice President, Platinum Underwriters
Reinsurance Inc.

3

Agenda

- Introduction to Case Study (5 mins – Mike)
 - Reinsurance Proposal
 - Pricing Information Received
- Exposure Rating (30 mins – Maria)
 - Basics of Method
 - Indications
- Experience Rating (30 mins – John)
 - Basics of Method
 - Indications
- Comparison of Results (10 mins – Mike)
 - Exposure vs. Experience
 - Next Steps
- Questions

4

Reinsurance Proposal

- Layer \$100,000 xs \$100,000
- Estimated Premium: \$40,000,000
 - Rapid growth recently
 - Was \$10,000,000 six years ago
 - Large apparent rate increases
- GL Business
 - Southeast US
- Underwriting
 - Business has been sold a few times during 10 year history to different fronting carriers
 - Latest sold two years ago

5

Pricing Information Received

- Premiums
 - by Class Code
 - by Policy Limit
- Historical loss ratios
- Claim listings
 - Reporting threshold of \$50,000
 - Current evaluation
 - Histories
- Claims
 - Reserve stair-stepping
 - Higher than average expenses

6

Exposure and Experience Pricing

- Presentations...

7

What's your final answer?

- **Experience** for this layer is **half** of the **exposure**
- Exposure = 3.92% (1.57 mm)
- Experience = 1.85% (0.74 mm)
- Trick Question...
 - More investigation needed

8

Exposure Pricing

Layer			Exposure Method			
			Indicated Exposure Burn (%)	Indicated Ultimate Loss (USD)	Benchmark Excess Claim Counts	Benchmark Severity
125,000	xs	75,000	6.59%	2,636,000	23.47	112,292
100,000	xs	100,000	3.92%	1,568,000	20.26	77,406
350,000	xs	150,000	3.19%	1,276,000	5.61	227,500
300,000	xs	200,000	2.00%	800,000	4.10	195,000

- Don't just look at layer you are pricing (100 xs 100k)
- Look at layers below and above as well
- Look at Exposure burns and claim counts

9

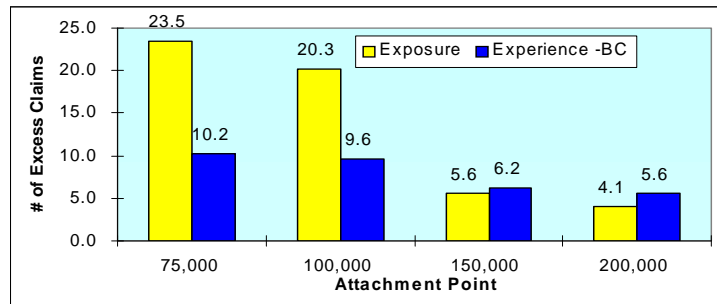
Experience Pricing

Layer			Experience - Traditional Burning Cost Method			
			Indicated Experience Burn (%)	Indicated Ultimate Loss (USD)	Indicated Excess Claim Counts	Implied Indicated Severity
125,000	xs	75,000	2.86%	1,144,422	10.19	112,292
100,000	xs	100,000	1.85%	741,067	9.57	77,406
350,000	xs	150,000	2.75%	1,101,180	6.18	178,281
300,000	xs	200,000	1.92%	768,718	5.56	138,284

- Ditto for Experience Pricing
- Use same layers for easier comparison

10

Exposure and Experience Comparison



- In this case study, there is an inconsistent relationship as move up the attachment points
- While the low layer experience is about half of exposure, the upper layers are about equal to exposure
- Need more investigation to reconcile and help solve the puzzle (next session – INTMD2)

11