



# **Underwriting and Actuarial Audits**



**A Reinsurer's Perspective**  
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# Agenda

- Types of Audits
- Audit Challenges
- Underwriting Audits – Key Elements
- Claims Audits
- Role of the Actuary
- Rate Monitoring
- Review of Pricing Adequacy
- Individual Account Umbrella Rate Adequacy Tool
- Final Advice

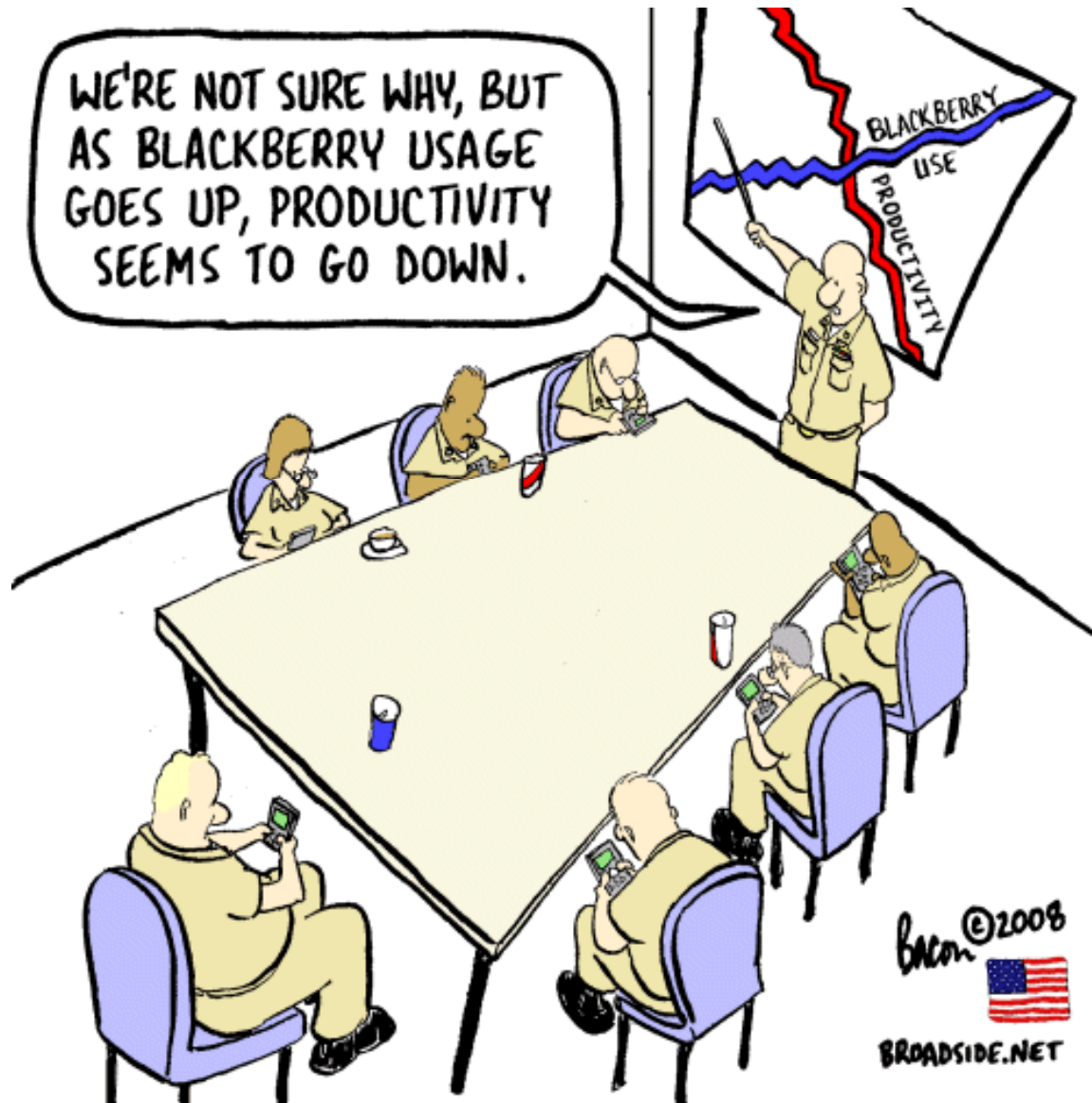
## Goals for Different Types of Audits

- Ceding Companies
  - Managing the relationship
  - Getting access to additional data
- MGA's
  - Adherence to guidelines
  - Testing ceding company oversight
- Internal Audits
  - Avoid creating internal squabbles
  - Providing information to upper management
  - Best practice sharing
- Acquisition Targets
  - Review of prospective book – repricing large programs
  - Reserve review – contents of reserve cells, mix changes, basis of BF ELR's
  - Retention of business and key personnel

## Audit Challenges

- Short time frame
- Lots of required social time
- Regular job doesn't go away
- Each file takes a while to review
- Relationship considerations
- Other auditors in conference room don't shut up
- Key Question: How to best spend your time?

## Yet Another Audit Challenge



## Understanding the Exposure

- Good chance to meet management and line underwriters
- Opening Meeting: Client overview of their book
  - Ask open ended questions
  - Be prepared with good questions – clients appreciate it when you do your homework
  - Get their view of market trends and competitors
  - What are they targeting, where are they pulling back
  - Good chance to judge quality of management
    - But does that transfer down to line underwriting and pricing?
- Review of Bordereaux Critical
  - Are they writing anything obviously outside of their stated risk appetite
  - Board of Director audit example

## Underwriting Audits – Overview

- Optimal Team: Underwriter, Claims Officer, sometimes a transactional auditor, and an Actuary (of course!)
- Typical Schedule
  - Overview Meeting
  - File Review
  - Lunch or Dinner with Client
  - Wrap Up
- Objectives
  - Specific limited objectives are optimal
  - File Review: Review of adherence to underwriting and pricing guidelines
  - Gather additional data for final pricing and underwriting analysis
  - Deepen relationship with client: Get feedback on your level of service, find out more about their needs, try to make the relationship stickier
  - Provide value added to the client, but...

## Typical Reinsurance Audit Team: Client Perspective





## Elements of Underwriting File Review

- File Information and Analysis
  - Completed Application, Loss History, Loss Control Reports, MVR's, Financials
  - Indications that the above have been reviewed
- Risk Analysis
  - Quality review and understanding of the policyholder's operations and exposures
  - Review of historical losses
  - Follow up on loss control recommendations
  - Proper use of limits, sub-limits, and SIR's
  - Coverage: Were the policy form, exclusions, and endorsements appropriate?
- Pricing
  - Was risk property classified and rated?
  - Does the exposure base seem reasonable – test WC payroll versus # of employees x reasonable average salary
  - Was the use of schedule rating reasonable or just a means to back into the needed rate
- Documentation
  - Is file neat and organized? Did they clearly summarize the reasons for writing the risk
- Compliance
  - Is the risk within their underwriting guidelines
  - Was the risk appropriately referred and approved
- Alignment – Does the risk fit with the company's strategy and capabilities?
- Risk Return

## Underwriting Audit: Lessons from an Experience Underwriter

- If you have a question or don't understand something, ask the client underwriter
- Look at the e-mail correspondence
- Don't fixate on just one file – look at the results of your full sample
- Maintain consistent grading among audit team members
- Critical Suggestions to the Client: You need to provide examples
- File Sample: Should be selected by the auditors
- Large & Tough Accounts: You want to see the ones that can blow up on you, but don't over-emphasize those accounts when judging the book

## Claims Audits: Key Elements

- Review of claims management and staffing
- Coverage Analysis
  - Is the claim covered?
  - Were reservation of rights letters and denial letters legally sound and appropriate?
- Claim Investigations – Good information in file, evidence of early attention
- Reserving Adequacy
  - Claims auditors usually have more trouble seeing and assessing changes in reserving practices
- Claim Resolution
  - Are they making efforts to close claims quickly?
  - Are settlement amounts appropriate?
- Subrogation/Recovery
- Management of External Resources: Vendors & Litigation Expense
- Evaluation of Systems & Protocols
- Reinsurance Reporting
- Claims Supervision & Interface with Underwriting

## Claims Audits Key Lessons: The World According to Marc Karnell



## Claims Audit: Examples of Significant Findings

- Often more valuable than the underwriting audit
- Honest dialogue within the claims fraternity/sorority

### Sample Findings:

- Public D&O: Companies rarely put up case reserves on security class action claims. Critical to work with claims for this line of business
- Property insurer doesn't reserve for business interruption or if there was a coverage issue
- President of company reviews all claims excess of a certain amount – claims often were reserved below that amount
- One small regional client updated case reserves only once per year
- Fraud
  - Clients were outsourcing adjustments to companies owned by family members
  - Cat Covers: Clients sometimes slip in an occasional fire loss with their hurricane claims
- Buy Backs: Client agrees to pay out claim on heavily reinsured policy. Policy renewed at very favorable term which they coincidentally kept net
- Noticing Potential Underwriting Issues:
  - EPLI claims on companies suffering layoffs; should have been caught in the underwriting process
  - Splitting a bond on a single project to get around treaty special acceptance rule

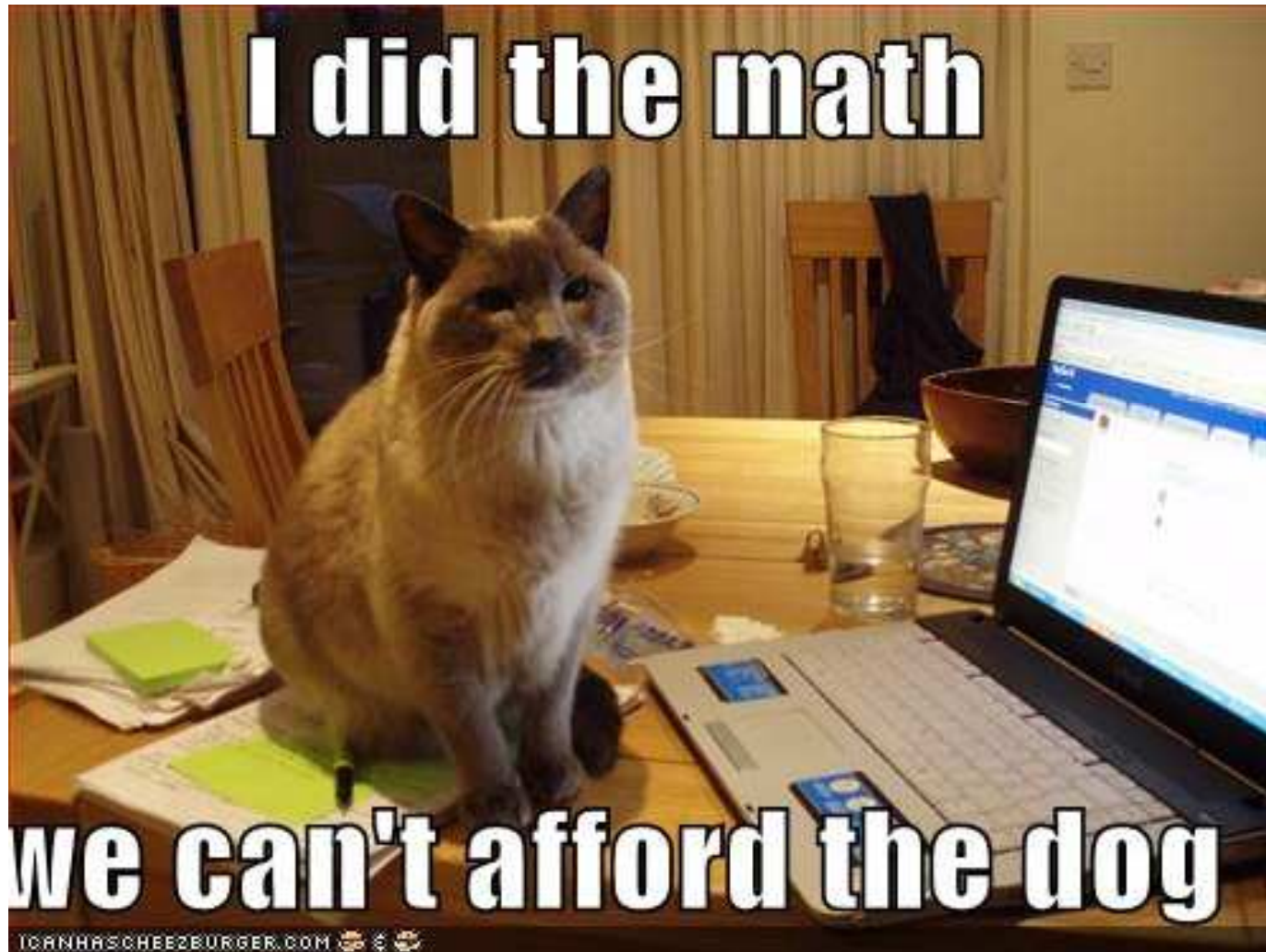
## Role of the Actuary

- Gain a better understanding of the client, target business, and exposures
- Member of the underwriting file review team
- Meet with client actuary
  - Actuaries usually very open with each other
- Review rate monitoring
- Review price adequacy
- Gather additional sources of data for renewal analysis. Some good examples:
  - Excess of loss development
  - Rate Monitoring: Data dump of renewal business showing renewal and expiring premium and exposures
  - Data dump allowing us to run our umbrella rating tool on the company's portfolio
  - Insight into changes impacting loss development – for one client older accident years taken over by runoff company that had incentive to close claims, changes in mix, etc.
  - New Ideas: Earned premium per indemnity claim for immature WC books
    - LR = State Average Severity x Med Only Load / Earned Premium per Indemnity Claim
    - = \$30,000 avg severity per indemnity claim x 1.1 med only load / \$50,000 EP per indemnity claim = 66%

## Review of Client Rate Monitoring

- Methodology:
  - How is it calculated? Renewal rate monitoring or changes in filed loss costs, LCM's, and average credits
  - How are changes in limits, attachment points, and exposure considered?
  - Are changes in schedule credits considered?
  - Does the calculated rate change include or exclude premium exposure trend?
  - Were rate changes in the submission really just approximations?
- New Business
  - Is it considered in the rate monitoring? If not, how does the exclusion of new business impact the meaningfulness results?
- Communication and Uses:
  - Do individual policy rate change calculations get used in the underwriting process?
  - How are corporate total rate changes communicated to the organization?
- A few reinsurers focus their file review entirely on calculating rate changes

## Review of Price Adequacy





## Review of Price Adequacy

- Wherever possible, bring benchmark rating plans or models to audit
  - Access to ISO loss costs
  - We have a D&O pricing model
  - Relevant rate filings, competitor information (just for background)
- Examples of Beneficial Audits
  - D&O Audit in 2002: Pricing astoundingly higher than expiring
  - E&S Property Example – Facultative primary rates, exposure rating tool, and use of RMS output
  - Excess WC Example
  - Large Account Umbrella Audit: Fortune 1000 primary umbrella book pricing shockingly low relative to primary loss cost – more later
- Audience: Examples of particularly beneficial audits?

# Individual Account Umbrella Pricing Model

## Typical Data Available From Client

- Umbrella Loss Development Triangles
- Premium
- Excess Factors; i.e.:
  - 1xP (as a percent of P)
  - 4x1xp (as a percent of 1xP or P)
  - 5x5xp (as a percent of 5xP or 1xP or P)
- 1xP Rating basis: Re-rated vs. Charged
- Price Monitoring

## Issues with Standard Umbrella Pricing Approaches

### ➤ Experience approach

- Loss development and experience is often volatile
- Change in mix of business is not considered
- Long tail nature makes it particularly tough to evaluate underwriting changes
- Good price monitoring is often available only for recent years
- Book may be relatively new or growing

### ➤ Analyzing client excess factors

- Approach involves comparison of client umbrella factors to a benchmark – either ISO or factors from other umbrella carriers
- When comparing to other carrier's rates, doesn't always consider differences in judgment credits used
- Doesn't consider whether client hazard group (ISO ILF table) assignments are appropriate
- Doesn't reflect adequacy of primary premium actually used in rating
- Difficult to appropriately analyze programs using 1xP auto unit rates
- Rarely explicitly considers impact of minimum premiums

## Another Solution: An Exposure Rating Approach

➤ Beautiful in its simplicity....on an account by account basis determine:

- Umbrella Loss Ratio = Umbrella Loss Cost/Umbrella Premium
- Umbrella Loss Cost = Primary Loss Cost \* (Umbrella Loss Cost as a % of Primary)
- Primary Loss Cost (for GL and CCA separately) =  
Primary Premium \* Gross Loss Ratio
- Sample Calculation for one account:

Account Name	Umbrella Terms				Comm Auto			General Liability		
	Limit in \$'s	Premium in \$'s	Calculated Loss Cost Using ISO ILF's	Projected Loss Ratio	Estimate Primary Loss Cost	Umb Charge as a % of Primary	Estimated Umbrella Loss Cost	Estimate Primary Loss Cost	Umb Charge as a % of Primary	Estimated Umbrella Loss Cost
Company XYZ	10,000,000	41,118	29,783	72.4%	21,600	32.1%	6,941	62,300	36.7%	22,842

# Audit Data Capture

<b>Umbrella:</b>	
Account name	<b>XYZ</b>
Brief description of operations and chief exposure(s)	<b>Bad</b>
State of domicile	<b>NY</b>
Umbrella Limit	10,000,000
Umbrella attachment point	1,000,000
Umbrella Charged Premium	41,118
<b>Auto Liability:</b>	
Primary CA Limit	1,000,000
Primary CA Premium (\$\$\$) used for rating umbrella	36,000
Was Primary CA Premium based on rerated manual? (y/n and \$\$\$)	<b>Y; 36,000</b>
Was Primary CA Premium based on charged? (y/n and \$\$\$)	no; based on manual; charged was 20,000
Vehicle counts: Light	2
Vehicle counts: Heavy	17
Vehicle counts: Extra Hvy	4
Vehicle counts: All other	2
Vehicle counts: Zone rated	1
<b>General Liability:</b>	
Primary GL Limit	1,000,000
Primary GL Premium (\$\$\$) used for rating umbrella	89,000
Was Primary GL Premium based on rerated manual? (y/n and \$\$\$)	N
Was Primary GL Premium based on charged? (y/n and \$\$\$)	Yes; charged was 89,000
Approximate split of GL exposures - PremOps vs Products (x%; y%)	80% Premops; 20% Products
Approximate split of GL exposures - PremOps Tables 1,2,3	table 1 = 10%; table 2 = 90%
Approximate split of GL exposures - Products Tables A,B,C	table B = 80%; table C = 20%

## Overview of Method

➤ An audit sample:

Account Name	Umbrella Terms				Comm Auto			General Liability		
	Limit in \$'s	Premium in \$'s	Calculated Loss Cost Using ISO ILF's	Projected Loss Ratio	Estimate Primary Loss Cost	Umb Charge as a % of Primary	Estimated Umbrella Loss Cost	Estimate Primary Loss Cost	Umb Charge as a % of Primary	Estimated Umbrella Loss Cost
Company XYZ	10,000,000	41,118	29,783	72.4%	21,600	32.1%	6,941	62,300	36.7%	22,842
A	5,000,000	31,406	12,091	38.5%	3,268	0.0%	-	30,898	39.1%	12,091
B	5,000,000	25,057	6,922	27.6%	14,067	0.0%	-	33,541	20.6%	6,922
C	2,000,000	4,132	58	1.4%	6,735	0.0%	-	419	13.8%	58
D	2,000,000	21,053	11,985	56.9%	5,012	0.0%	-	46,205	25.9%	11,985
E	5,000,000	26,506	6,450	24.3%	21,787	0.0%	-	29,950	21.5%	6,450
F	3,000,000	24,710	10,393	42.1%	35,000	0.0%	-	33,600	30.9%	10,393
G	5,000,000	26,867	11,729	43.7%	5,237	0.0%	-	52,702	22.3%	11,729
H	5,000,000	15,479	2,587	16.7%	5,956	0.0%	-	30,139	8.6%	2,587
I	1,000,000	7,500	4,066	54.2%	-	0.0%	-	25,835	15.7%	4,066
J	2,000,000	12,000	7,221	60.2%	-	0.0%	-	29,280	24.7%	7,221
Projected LR of Sample				43.8%						

## Advantages

- Supplements results from other approaches
- This method reflects current pricing and composition of book
- Reflects impact of minimum premiums
- Provides quantitative result of underwriting audit
- Results of this method have been in line with our expectations for given types of business
- Even better if you can get an in-force policy data dump



## Challenges

- Selection of Primary Loss Ratios:
  - For a supported book, analyze the client's gross experience
  - For unsupported business that is re-rated, use LCM's and average credits.
  - For unsupported business that is not re-rated, make an educated guess (find out who predominant underlying carriers are, consider industry LR's)
- Underlying auto premium not available as client uses auto unit rates for the 1<sup>st</sup> Mill umbrella.
  - Apply guesstimates for average premium per type of vehicle to the corresponding vehicle counts
  - But try to get underlying actual premium
- Selection of exposure curves.
  - ISO curves haven't always been intuitively logical in umbrella layers.
    - Mixed exponential curves are light in the tail compared with the truncated pareto – work very well for the 1<sup>st</sup> million primary
    - ISO appears to have done a better job in recent years, but for GL 4x1xP and higher factors are nearly identical for all tables
    - We determined our selected curves by comparing the loss ratios from this umbrella benchmark to client experience across multiple programs

## Final Advice

- Participating in audits in a great way to better understand your clients and their business
- Don't get lost in the minutia, file reviews are important, but...
  - Meeting with actuaries and seeking out additional data is critical and often more fruitful
  - Don't forget to review the bordereaux
- Clients can be very sensitive to audit recommendations. Make suggestions carefully and with supporting examples
- The audit process can have big benefits
  - Better client relationships
  - Better data
  - Finding major pricing problems or opportunities