Institute
and Faculty
of Actuaries

R-3: Real World meets Industry Standards: IFoA/CAS Paper tested by Marketplace Realities

Annual Meeting of the Casualty Actuarial Society
Hilton Hawaiian Village, Honolulu, HI

November 11, 2019

Overview by: John Buchanan, FCAS, ISO / Verisk
Dr. Ana Mata, ACAS, MatBlas

Disclaimer

The views expressed in this presentation are those of invited contributors and not necessarily those of the Institute and Faculty of Actuaries or the Casualty Actuarial Society. The Institute and Faculty of Actuaries do not endorse any of the views stated, nor any claims or representations made in this presentation and accept no responsibility or liability to any person for loss or damage suffered as a consequence of their placing reliance upon any view, claim or representation made in this presentation. The information and expressions of opinion contained in this publication are not intended to be a comprehensive study, nor to provide actuarial advice or advice of any nature and should not be treated as a substitute for specific advice concerning individual situations. On no account may any part of this presentation be reproduced without the written permission of the Institute and Faculty of Actuaries and the Casualty Actuarial Society.

About the speakers

- **John W. Buchanan, FCAS**
- ISO / Verisk Managing Director, Excess & Reinsurance
- Over 30 years of experience as a front-line pricing actuary and consultant in the US, London, and other international reinsurance marketplaces. Conceptualized, developed and implemented extensive benchmarking and modeling services.
- Initiated and chaired the joint IFoA/CAS Working Party which produced the paper which won the UK GIRO Brian Hey and the US CAS Hachemeister awards

- **Dr. Ana J. Mata, ACAS**
- MatBlas Managing Director & Actuary
- Over 20 years of experience as consultant, pricing actuary, trainer, researcher and software developer. Based in London serving clients worldwide.
- Awarded IFoA's Brian Hey Prize 2002 and 2017, and CAS's Hachemeister award 2019

IFoA/CAS Paper - Session overview

Monday November 11, 2019 3:55 - 4:45pm

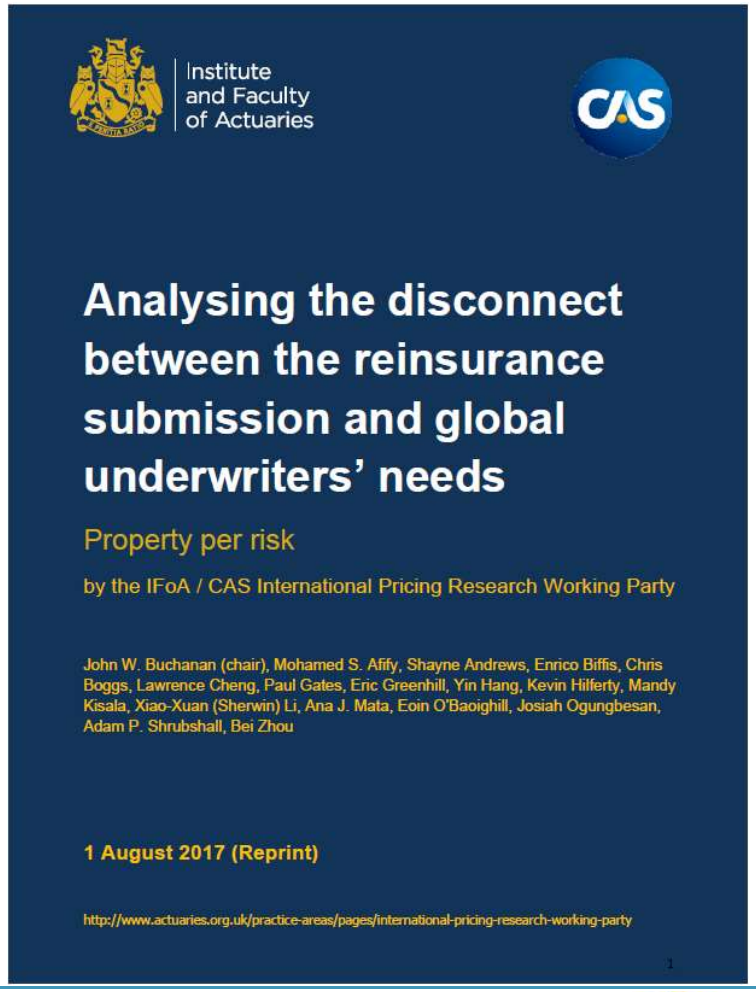
- Starting in 2014, a joint IFoA-CAS Working Party featuring a cross-section of actuaries, underwriters, and academics, produced a research paper to analyze data and information gaps related to pricing global property per risk coverages and competitive marketplace realities. Results from surveys of members in the UK, European and US actuarial and other communities, indicated a clear disconnect between the desired information, and the information commonly available for pricing.
- The resulting paper filled the global literary void, as well as presenting a broad range of related pricing topics, including various behavioral economic aspects. The paper won two prestigious awards: the UK IFoA/GIRO 2016 Brian Hey award, and the US CAS 2019 Hachemeister award. Much of this information is also appropriate for usage in other property and casualty lines of business.
- This session will present an **overview of the paper**, including a more detailed review of some of the key chapters and real world aspects of this reference document, **as well as what has happened in the US and non-US marketplaces since the papers publication**. While much has been written about e.g. the growing importance of data scientists, data algorithms, and the role of AI, it seems that the originally identified information gap still exists and in fact in some areas getting larger with less adequate information being provided.

Agenda (50 mins)

1. Overview of the paper, motivation, and survey results – 5 mins
2. Key points of the paper – 30
3. Market observations and what's new since paper published – 10
4. Conclusions & Q&A – 5

About the IFoA-CAS Working Party

- **Impetus**
  - New joint WP idea at 2014 GIRO Conference in Wales, when John Buchanan approached IFoA organizers
  - Focus: Property per risk insurance and reinsurance
  - Limitations of information provided by primary companies, agents, and brokers to reinsurers
  - Conservative assumptions in the absence of complete data – higher premiums
  - Better data could benefit all parties
- **Steps**
  - Started with Phila CARe 2015 survey of actuaries and underwriters worldwide – 44 responses
  - Analysis of survey results and impact of data on pricing assumptions
  - **17 authors/reviewers** - 5 actuaries initially, and expanded to include 5 non-actuaries and 12 outside US
  - 15 months for first paper, and then another 3 months for revised paper to include requested expansions
  - Detailed paper with **16 chapters** covering topics in data quality, actuarial, underwriting, and market behavioral characteristics
- **Road show**
  - **2015-2019:** Phila, DC, NY, London (3 including Staple Inn BH presentation award), Boston, Liverpool, Edinburgh, Berlin, Singapore, Hawaii including HM award ***(12: 5 US / 7 International)***
  - **Presenters:** Ana Mata, John Buchanan, Adam Shrubshall, Sherwin Li, Chris Boggs, Enrico Biffis, Kevin Hilferty, Larry Cheng ***(8: 4 actuaries / 4 other professionals)***



Institute and Faculty of Actuaries

Analysing the disconnect between the reinsurance submission and global underwriters' needs

Property per risk

by the IFoA / CAS International Pricing Research Working Party

John W. Buchanan (chair), Mohamed S. Afify, Shayne Andrews, Enrico Biffis, Chris Boggs, Lawrence Cheng, Paul Gates, Eric Greenhill, Yin Hang, Kevin Hilferty, Mandy Kisala, Xiao-Xuan (Sherwin) Li, Ana J. Mata, Eoin O'Baoighill, Josiah Ogungbesan, Adam P. Shrubshall, Bei Zhou

1 August 2017 (Reprint)

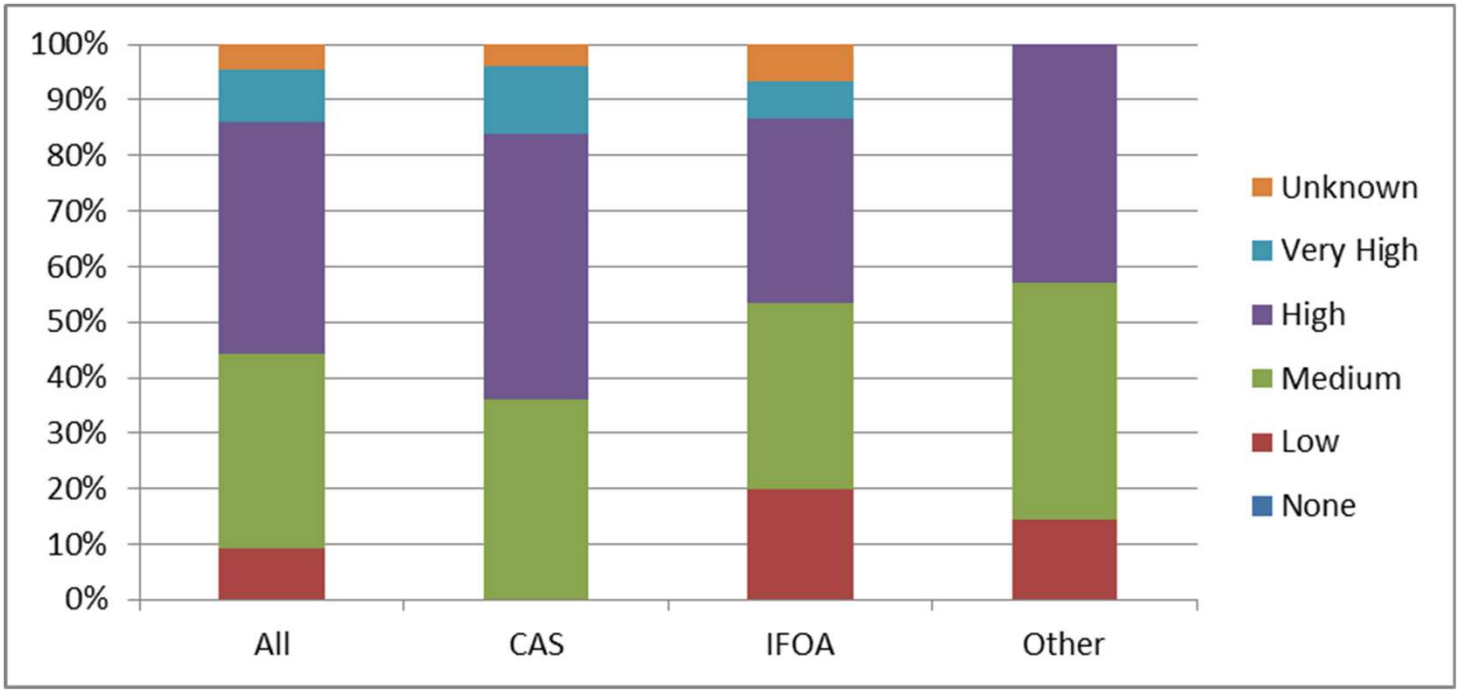
http://www.actuaries.org.uk/practice-areas/pages/international-pricing-research-working-party

1

Contents

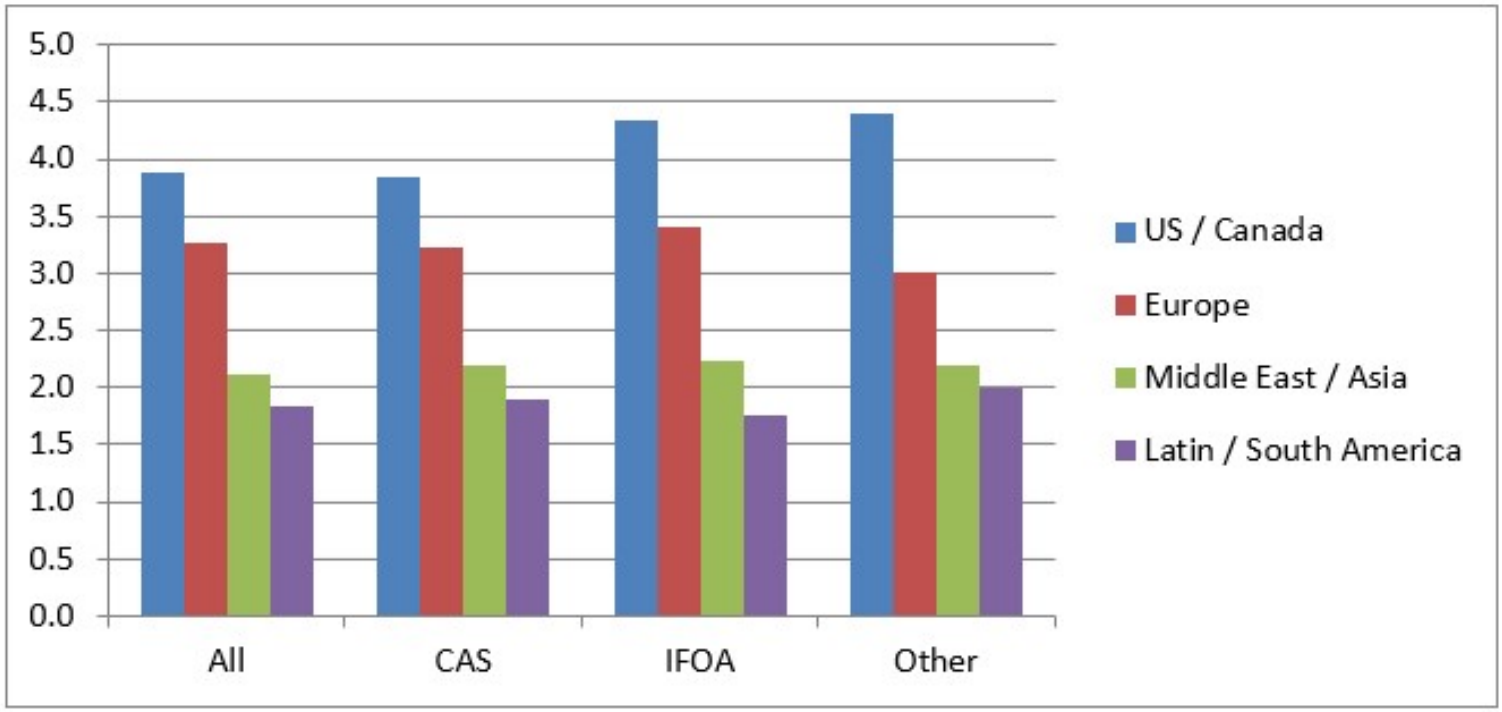
Figures

How much does quality of submission impact your price?



How much does quality of submission vary by region?

Figure 37 - Survey: Submission quality rank (1=poor, 5=excellent)



Overview of paper by chapter

1. Introduction
2. Motivation and results of survey
3. ***Insurance company's (cedant) considerations (AM)***
4. ***Reinsurance company's considerations (AM)***
5. ***Experience and exposure data elements (AM)***
6. ***Amount of insurance definition (AM)***
7. ***Types of risk profiles (AM)***
8. Loss ratio information
9. Historical risk profiles
10. Traditional COPE and portfolio extensions
11. ***Large claim information and link to AOI (JB)***
12. ***Rate monitoring information (AM)***
13. ***Practical considerations: winner's curse, overconfidence and submission bias (JB)***
14. Using property cat submission information
15. Country specific issues
16. Conclusions

Chapter 3: Insurance company's considerations (Cedant)

- Process starts when risk is presented to the insurance underwriter
- Data collection depends on insurance company's rating models and databases
- Data quality and completeness benefit for all parties

Chapter 4: Reinsurance company's considerations

- Reinsurers benchmark parameters based on market data
- Benchmarks used in the absence of credible data from cedant
- Fair Price vs. Smooth Price
- New vs. Renewal treaties
- Reinsurance brokers
- Long term relationships and consistent pricing
- Overconfidence and submission bias

Chapter 5: Data elements

Exposure rating

- Historical and prospective loss ratios
  - Gross of THIS treaty
  - Cat vs. non-cat (definition of cat loss)
  - Accident Year vs. UW Year
- In-force risk profile (banded) – what is a risk?
- Individual in-force risk listing
  - Amount of insurance
  - Excess/deductible
  - Premium allocated to each risk

Experience rating

- Large losses preferable with development
  - Amount of insurance and excess
  - Loss description
  - Date of loss vs. policy date
- Historical premium (earned vs. written)
- Historical and prospective rate changes
  - Basis of calculation

Chapter 6: Amount of insurance (AOI) definition

- **How does the treaty respond to a loss?**
  - Usually risk excess treaties respond per location/building
- **What is the amount of insurance?**
  - Policy limit is maximum loss an insurer would pay in the event of a loss.
  - The amount of information contained in that one single value is extremely limited.
  - Is it building only or does it include other coverages, e.g. business interruption?
- **What is a risk?***
  - A policy covering multiple locations
  - The location with highest amount of insurance (top location)
  - A single location (building)

**Source: Riegel, U. (2010). On fire exposure rating and the impact of the risk profile type. ASTIN Bulletin, 40(02):727–777.*

Chapter 6: Amount of insurance

- **Common presentations**
  - Total insured value (TIV)
  - Maximum probable loss (MPL)
  - Possible maximum loss (PML)
  - Maximum feasible loss (MFL)

  Could be per location or aggregated for the policy

  - Average TIV across all locations in the policy
  - Largest/top location or key location
- **Subscription market policies**
  - Common presentation: one policy with lowest attachment and total programme participation.
  - Cedant's participation per layer: % share, limit and attachment with stack code

Chapter 6: Importance of AOI Definition – Continued Issue

It is very important to understand what amount of insurance is being supplied either in a statement of values or in a banded profile. Many different definitions have been used in the industry. A true $100M AOI or TSI, may show up in a schedule as $25M or lower depending upon the definition used.

If the value supplied is not what you expect in your ground-up pricing or layering or in application of your first loss scale, then the formulation of your results via AxBxC *[AOI x Base loss costs x Curve]* may be significantly misstated. **This issue, which cuts across energy, aviation, ocean marine, etc. continues to be one of the largest areas of disconnect between data providers and users.**

6.1 What Is Meant by Amount of Insurance

The exposure value is meant to represent the upper bound of the risk transferred, or the largest payment that the insurer or reinsurer would be required to make in response to a covered loss. **However, the concept of AOI can represent many different amounts.** The manner in which the exposure value is represented also often depends on how it is being used and on what questions are being investigated.

Each of these terms can have different meanings in different contexts. In practice there are many different ways, and forms that are used, to measure any of the terms above. Since one term can have multiple meanings, **this reference list can be used by various parties to question or confirm they are speaking of the same concept**. This list will hopefully spur the asking of relevant valuation questions as well as provide some guidance as to term usage.

The order of the Figure 4 reference list, starting with AOI and TIV and ending with NLE is the rough reverse size order that may be encountered with these terms. For example, Figure 5 shows how illustrative PML and MFL values may be estimated from a building's overall value or limit. In this illustrative example, if a building's value is $100M, through various COPE estimates and loss mitigation factors, the estimated MFL is 25% of the building value, while the PML is 13%. In this example, the MFL also incorporates the potential failure of a key loss reduction system such as automatic fire sprinkler system.

6.2 Varying Terminology: AOI, TIV, MPL, MFL, PML, SOV

A short-hand summary of the various definitions used for AOIs is shown in Figure 4.

Figure 4 - Reference List for AOI Definitions

Acronym	Short For:	Meaning
AOI TSI	Amount of Insurance Total Sum Insured	The amount of insurance (AOI) purchased, the policy limit, the total sum insured (TSI), or total insured value (TIV) (but TIV could have two meanings as below). Includes **direct loss** such as buildings and business personal property (contents), as well as **indirect loss** such as business interruption (also called time element). Different policy limits are typically purchased for buildings, contents, and business interruption.
TIV	Total Insured Values Or Total Insurable Values	**Total Insured Values** can be defined as the total AOI or policy limit. Or **Total Insurable Values** can be a reduction to the full AOI values and relates to the MPL and other estimated values. Statistically, buildings and contents are unlikely to suffer a total loss. The MFL, PML, EML, and NLE are all percentages less than the MPL. Estimating these values will depend on many variables specific to the risk including combustibility of the building, various COPE attributes and may include complex engineering scenarios with extensive exposure and loss simulations.
MPL	Maximum Possible Loss	The **MPL** is the **maximum amount of loss possible**. From a **direct loss** perspective, the MPL of a building and the business personal property (contents) within the building is 100% of the total values at risk which are measurable. From an **indirect loss** perspective, the MPL of business income can only be estimated because there is no definitive measure of the period of restoration (POR) following a worst-case, business closing loss. The **MPL may be larger than the AOI** or policy limits issued.
MFL	Maximum Foreseeable Loss	The **MFL** is the worst loss that is likely to occur if **a key loss reduction system fails** such as automatic fire alarms and sprinklers, watchman services, public fire suppression, etc.
PML	Probable Maximum Loss	The **PML** is an estimate of the largest loss the risk is likely to suffer when **critical protection systems are functioning as expected** and takes into account any relevant COPE attributes.
EML	Estimated Maximum Loss	The **EML** can and usually will **ignore any particularly unlikely events** or "remote coincidences" even if they are possible.
NLE	Normal Loss Expectancy	The **NLE** may assume that all active and passive protection systems and features are **fully operating as expected** under normal conditions.
SOV	Statement of Values	A declaration of the value held at each location to be insured. **The SOV should state which of the above valuation measures are used to estimate the displayed AOIs.**

The main takeaway from this list is that whatever way the AOI/TSI or policy limit values are being presented in a Statement of Values or policy limits profile, the risk exposures should include a definition and description as to how the values are being produced and displayed.

Source: CARe Bermuda, June 2019 – C-16 Property risk and cats playing together

Chapter 7: Types of risk profile submissions

- **Banded profile with TIV, Premium and number of risks per band**
  - normally received by 93%, ranked 1 in exposure rating importance

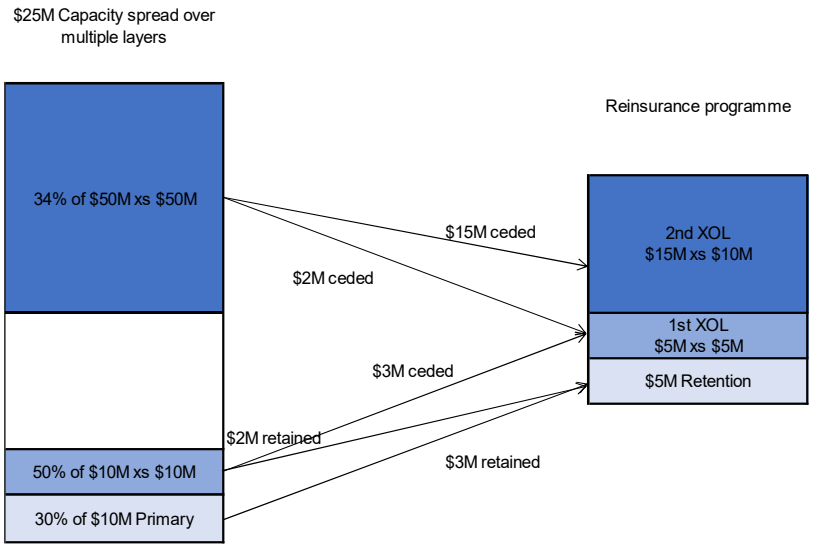
TIV Band		%TIV	TIV in band	Avg TIV	No Risks	% Prem	Premium
0	1,000,000	35%	437,500,000	759,549	576	44.12%	6,562,500
1,000,001	2,000,000	25%	312,500,000	1,554,726	201	24.16%	3,593,750
2,000,001	3,000,000	20%	250,000,000	2,688,172	93	16.47%	2,450,000
3,000,001	4,000,000	15%	187,500,000	3,232,759	58	11.60%	1,725,000
4,000,001	5,000,000	5%	62,500,000	4,166,667	15	3.66%	543,750
Total		100%	1,250,000,000		943	100.00%	14,875,000

Risks exposing a $4m xs $1m layer

- What is a risk? A policy or a single location?
  - Significant impact on exposure rating results

Chapter 7: Types of risk profile submissions

- **Shared and layered programmes with ventilation**
  - Standard practice: aggregate cedant's participation (limit) with lowest attachment for the cedant.



Stack code	Participation	Policy Limit		Attachment	Cedant's premium
A	30%	10,000,000	xs	0	145,000
A	50%	10,000,000	xs	10,000,000	72,000
A	34%	50,000,000	xs	50,000,000	32,500

In a banded profile the total premium of $249,500 for this risk will be counted in the band with 0 attachment and $25M limit

Chapter 12: Price monitoring (Rate changes)

- Property reinsurance submissions provide limited information about rate changes
- Cedants do not provide examples or explanations of how they calculate rate changes
- Rate changes may not be aligned with historical premium presented (written vs. earned)
- Paper presents detailed examples of how rate changes should be calculated according to Lloyd's Minimum Underwriting Standards

Chapter 12: Price monitoring (Rate changes)

- Premium rate change
  - Changes in premium rate
  - Changes in exposure (TIV), coverage and limit/attachment
- Risk Adjusted Rate Change
  - Also includes elements of experience
    - Changes in view of risk: better/worse than expected experience
    - Claims inflation
    - View as the change in expected loss ratio

Chapter 12: Price monitoring

Premium rate change

- 5% reduction in rate
- No changes in exposure, coverage of limits/attachment
- Rate change = -5%

Risk adjusted rate change

- Assume average claims inflation is 3% p.a.
- Apart from -5% rate reduction, expected loss cost is adjusted by 3% from previous year
- Renewal IELR = Expiring IELR*1.03/0.95 = 1.0842 x Exp. IELR
- RARC = -7.77%

Chapter 12: Price monitoring (Rate changes)

- Rate change is key assumption in experience rating
  - Gross loss ratio for exposure rating
  - Burning cost for excess of loss layers
- If RARC takes into account inflation could be double counting
  - Previous example RARC -7.77 including 3% claims inflation
  - For experience rating no need to further adjust claims for inflation
  - Explicit explanation to reinsurers is required

Chapter 11: Large claim information and link to AOI

- **Claims and exposures are notoriously difficult to link**
  - but are required for any kind of reliable size-of-loss analysis
- **Data collection**
  - Data sourcing is complicated by the fact that different departments within a company may store different information
- **Data quality and granularity**
  - An important proxy for the exposure would be the TIV at location, however, this is often not available
- **Small sample issues for data outside the US**
- **Integration of data sources**:
  - there is very limited availability of public data sources

Chapter 11: First Loss Scale Survey

A Survey of International Property Size of Loss Curves

- **The Issues:**
  - Plausible curves need to rely on link between losses and their exposed amounts of insurance
  - Curves vary substantially by Amount of Insurance, occupancy, peril, territory, etc.
  - Establishing connection between US & International experience – large loss occupancy test
- **Lloyd's Scales** *(World War II-unknown)*
- **Salzman Scales** *(1960 – personal property)*
- **Ludwig Tables** *(mid 1980s – one company HO and small CP)*
- **Various Reinsurer Based Scales**
  - Swiss Re, Munich Re, Skandia, Frankona, Cologne Re, Employers Re, brokers,…
- **MBBEFD Approximations** *(1990s - S. Bernegger)*
  - Modeling loss severity with distributions from Physics
- **Extreme Value Theory** *(1990s- G. Ramachandran)*
  - Factors affecting Fire Loss – Multiple regression models
- **ISO – PSOLD International**
  - Based on US Proxy Approach, COPE (ARM), with validation
  - Four countries released in 2013 (UK, Germany, France, Australia)
  - Others in process (Netherlands, Japan, Brazil)

Many different curves, with varying levels of credibility and transparency, have been used over the decades

Source: CS2 International Property – June 2013
Perspectives from America: The Missing link: Rating property exposure globally – May 2012 by John Buchanan

37

Source: CAS International P&C Webinar – February 27, 2014

Chapter 13: Winner's curse – Competitive bidding - 1 company

SCENARIO 1

	Pillow Manufacturer w/sprinkler	Pillow Manufacturer w/o sprinkler	Pillow & Dynamite Manufacturer	Dynamite Manufacturer w/sprinkler	Dynamite Manufacturer w/o sprinkler	Total
Company A	0.50	0.75	1.25	2.50	5.00	10.00
Actual Premium	1.00	1.50	2.50	5.00	10.00	20.00

	Company A	Industry
# of Winning Bids	5	5
Winning Bid - Actual Loss	10.00	10.00
Winning Bid - Actual Premium	20.00	20.00
Loss Ratio	**50%**	**50%**

Assumptions: Company A has superior pricing model with model results = actual losses
Winner takes all and a 50% illustrative loss ratio

Chapter 13: Winner's curse – Competitive bidding - 4 companies

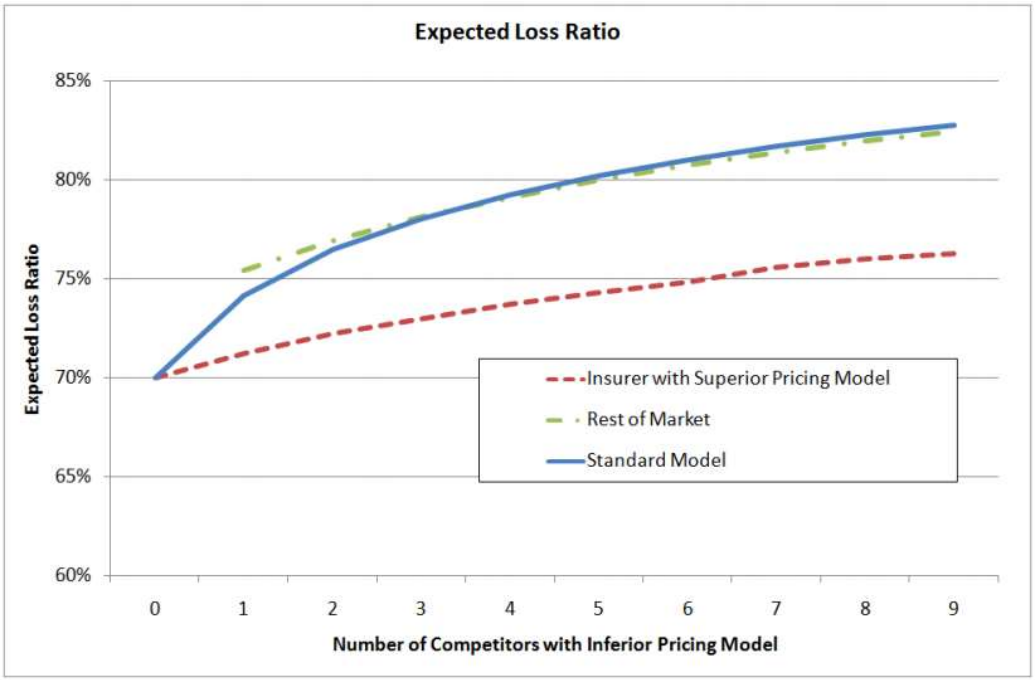
SCENARIO 2

	Pillow Manufacturer w/sprinkler	Pillow Manufacturer w/o sprinkler	Pillow & Dynamite Manufacturer	Dynamite Manufacturer w/sprinkler	Dynamite Manufacturer w/o sprinkler	Total
Company A	0.50	0.75	1.25	2.50	5.00	10.00
Company B	2.50	2.50	2.50	2.50	2.50	12.50
Company C	0.55	0.68	1.38	2.75	5.50	10.85
Company D	0.60	0.90	1.50	2.00	4.00	9.00
Actual Premium	1.00	1.35	2.50	4.00	5.00	13.85

	Company A	Company B	Company C	Company D	Industry	Rest of Market
# of Winning Bids	2	1	1	1	5	3
Winning Bid - Actual Loss	1.75	5.00	0.75	2.50	10.00	8.25
Winning Bid - Actual Premium	3.50	5.00	1.35	4.00	13.85	10.35
Loss Ratio	**50%**	**100%**	**56%**	**63%**	**72%**	**80%**

Assumptions: **Company B uses one rate for all Manufacturing, with no adjustments for COPE characteristics**
Companies C and D have somewhat inferior pricing models compared to Company A
Winner takes all and a 50% illustrative loss ratio

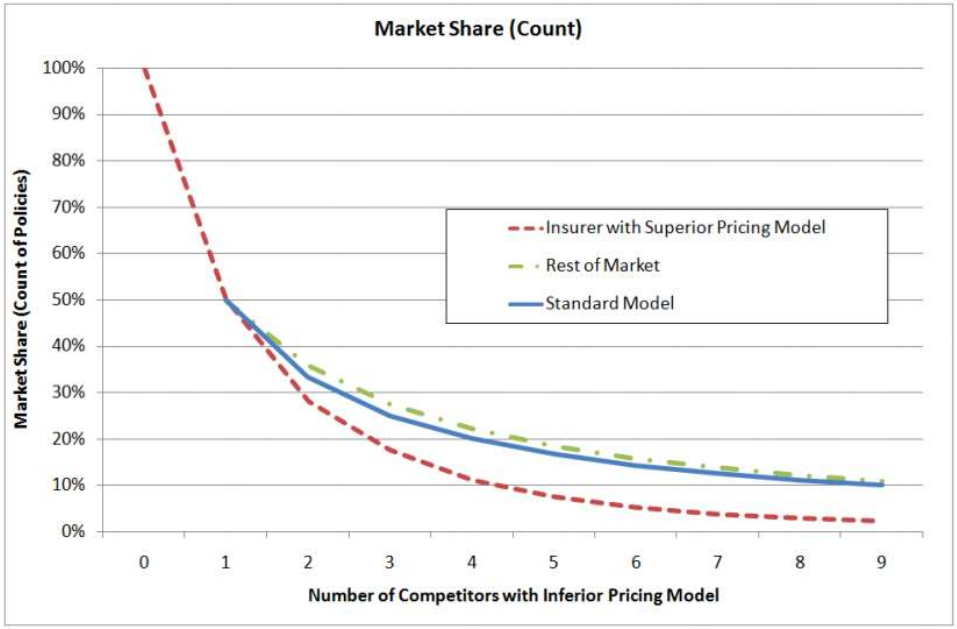
Chapter 13: Winner's curse illustration – Superior model, but…



- The insurer with the superior pricing model and benchmarking data has a significantly better loss ratio. However…

Source: GIRO (2010).Winner's Curse: The Unmodelled Impact of Competition, Report of the Winner's Curse GIRO Working Party, August 2009.

Chapter 13: Winner's curse illustration – Loss of market share



- By getting the price more accurate, the insurer with the superior model loses business to competitors with inferior models
- The insurers with inferior models will underprice sufficiently enough to win the business on a more frequent basis.

Source: GIRO (2010).Winner's Curse: The Unmodelled Impact of Competition, Report of the Winner's Curse GIRO Working Party, August 2009.

Additional sources: Collins, D. (2004). "Managing Overconfidence" Spring CAE Meeting. Zurich.
Conger, R. and Lowe, S. (2003). "Managing Overconfidence" Towers Watson Emphasis.

Chapter 13: Bias in data provision

- **Cedants incentives**
  - Better data may lead to more accurate risk assessment (expected loss cost)
  - Would only better risks provide such data?
  - Would risks with insufficient data be assumed to be worse risks?
  - Hard vs. soft market incentives
- **Reinsurers incentives**
  - Not all reinsurers request same information
  - Internal referral processes greatly drive request for information
  - Detailed modelling vs. timeliness – first one to quote

Chapter 13: Overconfidence in Models

Table 1 Overconfidence across Industries

Industry Tested	Kind of Questions Used in Test	Percentage of Misses		Size**
		Ideal*	Actual	
Advertising	Industry	10%	61%	750
	Industry	50	78	750
Computers	Industry	5	80	1290
	Firm	5	58	1290
Data processing	Industry	10	42	252
	General business	10	62	261
Money management	Industry	10	50	480
Petroleum	Industry & firm	10	50	850
	Industry & firm	50	79	850
Pharmaceutical	Firm	10	49	390
Security analysis	Industry	10	64	497

* The ideal percentage of misses is 100% minus the size of the confidence interval. Thus, a 10% ideal means that managers were asked for 90% confidence intervals.

** The total number of judgments made across persons and questions.

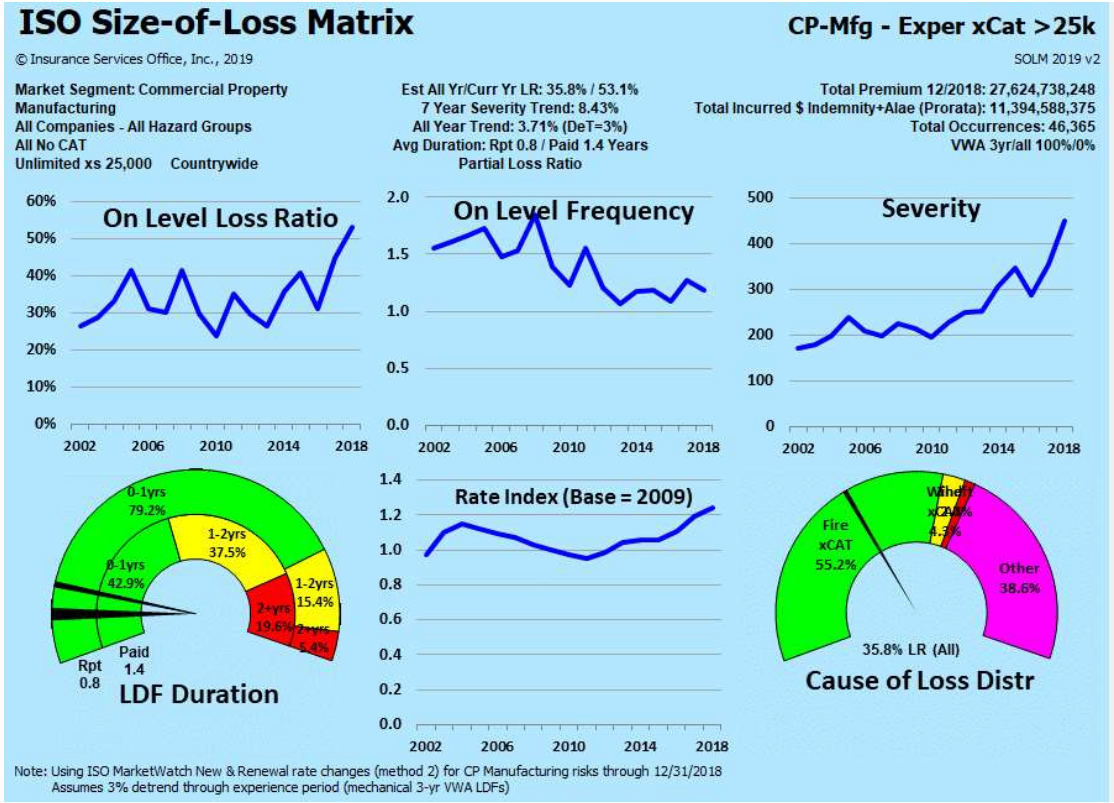
Source: Russo, E. and Shoemaker, P.J. (1992). Managing Overconfidence. Sloan Management Review, Winter.

Recent Market Observations / Feedback

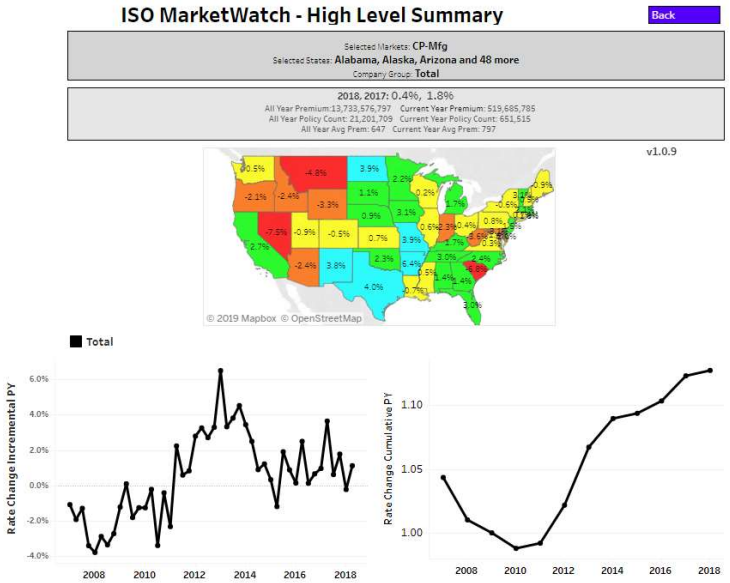
- US results through 12/2018
- Broker market realities

- Considerable gap between information provided in submission and requirements for thorough reinsurance pricing
- Problem builds up from insurance company's rating models
- Missing key data items with significant impact on pricing
- Commercial considerations
  - Incentives: hard vs. soft market
  - Winner's curse
  - Bias in data submission

Recent Loss Ratio and Rate Change Experience – US – CP Manufacturing Risks



Illustrative



Framework is Technical Analysis

Playing Nice/Negotiation Matters (Broker Perspective)

Covered so far: Preparation	Now what? Market Seems Messy	Broad Takeaways

• Theory
• Mechanics
• Actuarial Truth
	• **"Information means questions, more information means more questions. This is why I don't want to share information."**
	• "Our internal guidelines require . . ."
	  • "ECO/XPL margins" (on small line buffer layer S&L property)
	  • "Recognition of climate change"
	  • "Meteor strike loads"
		• Focus on bigger issues
		• Facts and values
		• Service and relationship matter
		  • II: Underwriters will have to deliver 'concierge service' – Reins buyer

Source: CARe Bermuda, June 2019 – C-16 Property risk and cats playing together (Jonathan Hayes – Guy Carpenter)

John W. Buchanan, FCAS, MAAA

Verisk / ISO

John.Buchanan@verisk.com

John Buchanan, FCAS, MAAA, is a principal in charge of ISO's Excess and Reinsurance Division. He has over 30 years of experience as a front-line pricing actuary and consultant in the US, London, and other international reinsurance marketplaces.

In John's career, he has conceptualized, developed and implemented extensive benchmarking and modeling services for various reinsurers, excess carriers, and industry groups. He has pioneered extensive work to extend information gathered in mature benchmarking markets, and applying the information to International markets making use of local and customized knowledge. He was a frontline sign-off actuary for many domestic and international lines of business. While a consultant, he was the main contact for the Reinsurance Association of America and the Reinsurance Research Council of Canada as well as working extensively with the London and European reinsurance market through the Casualty Actuaries in Reinsurance in London. He also formed and chaired the multi-discipline joint IFoA-CAS International Pricing Research Working Party. The resulting paper, *"Analyzing the Disconnect Between the Reinsurance Submission and Global Underwriter's Needs - Property Per Risk*", won the prestigious 2016 IFoA UK Brian Hey and the 2019 CAS US Hachemeister awards.

John's professional accomplishments also include being heavily involved with many international meteorological groups including NOAA, UK-Met, GLOBE, ACRE, and was chairperson of the CAS Climate Change Student Outreach subcommittee. He is on the CARe committee responsible for many of the annual CARe conference educational tracks, and previously at the CAS Ratemaking Seminar. He has been a moderator and panelist at dozens of industry seminars on the topic of domestic and international reinsurance pricing, the underwriting cycle, international benchmarking, etc.

Prior to joining Verisk, John was a Senior Vice President at Platinum Underwriters (previously St. Paul Reinsurance), a Principal at Tillinghast (now Towers Watson), and a Senior Consultant at KPMG, Peat Marwick. He has also competed and won many medals and trophies as an amateur in the Global Salsa Championships, and is determined to write the book "The Mathematician's Guide to Salsa Dancing". He has also written and directed a few sponsored films entitled "*Franklin Climate Change*" and "*Cuba People to People*" with the latter selected to run at various film festivals and described in September 2018 CAS actuarial review article.

Matβlas

The pricing and underwriting management specialist

Ana J. Mata, PhD, ACAS

MatBlas

ana.mata@matblas.com

Ana Mata is the Managing Director and founder of MatBlas. a consultancy specialising in pricing, underwriting management, technical training and software development for insurance and reinsurance companies. Ana is based in London, but her worldwide experience, combined with her candid approach to business, have made her respected and trusted among clients worldwide.

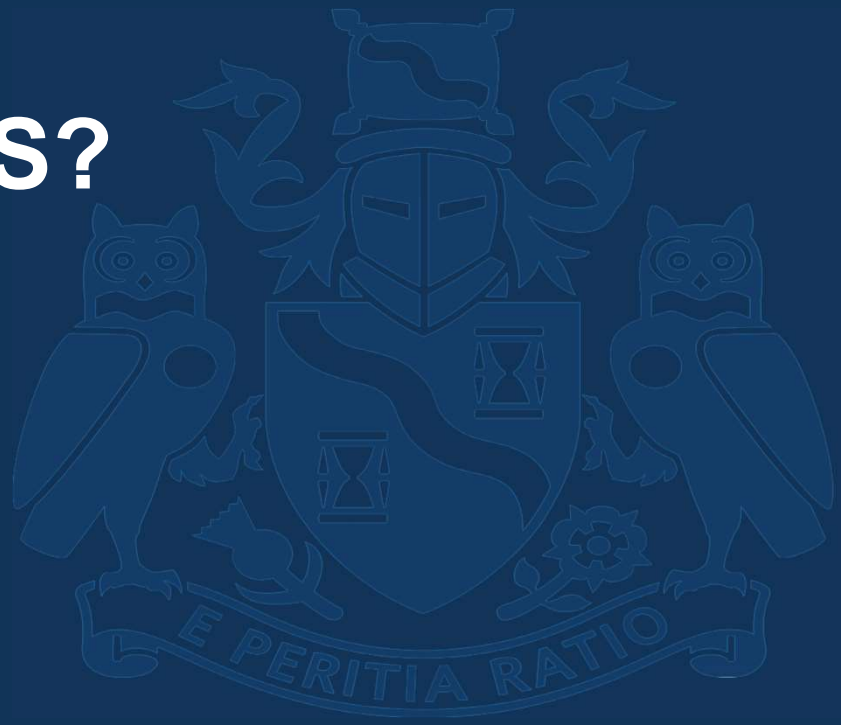
Ana has held senior pricing roles both in insurance and reinsurance companies in the US and in London, working with a broad range of classes of business (Financial Lines, Casualty, Property, Energy, Marine, Engineering & Construction, Nuclear Liability and Title Insurance).

In her last corporate appointment Ana was the Financial Lines and Casualty Pricing Actuary for ACE Overseas General (currently known as Chubb Overseas General) where she was responsible for supporting underwriters in the development and implementation of pricing frameworks and models for portfolios totalling $1bn across The UK, The USA, Europe, Asia and Latin America. She also worked as the Financial Lines pricing actuary at CNA Re, Chicago and as a Consultant at KPMG, London.

Ana holds a Bachelor's degree in Pure Mathematics from Universidad Simon Bolivar, Caracas, Venezuela, a PhD in Actuarial Mathematics from Heriot-Watt University, Edinburgh and she is an Associate of the Casualty Actuarial Society. Ana is a frequent speaker in actuarial conferences and has authored a number of practical papers. She has been awarded the IFoA's Brian Hey prize twice as co-author of the papers ***Pricing Excess of Loss Treaties with Loss Sensitive Features: An Exposure Rating Approach*** in 2002 and ***Analyzing the Disconnect Between the Reinsurance Submission and Global Underwriter's Needs - Property Per Risk*** in 2017 and the 2019 CAS US Hachemeister for the latter paper.

Institute
and Faculty
of Actuaries

QUESTIONS?



11 November 2019