

PRICING NEW LINES OF BUSINESS

March 26, 2019
Brian B. Johnson, ACAS, MAAA, ARM
President and Consulting Actuary


1

Antitrust Notice

The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.

Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.


It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.



2

How does an actuary price insurance for which there is little to no data?

- Review applicable ASOPs
- Understand coverage
- Understand the target market
- Develop a model of the risk
- Build a rate structure around the model



3

Review applicable ASOPs

- ASOP No. 46
 - Risk Evaluation in Enterprise Risk Management
 - Risk Evaluation
 - Financial strength, risk profile, and risk environment
 - Information about the risk management system
 - Risk Evaluation Models
 - Appropriate fit of models for purpose
 - Appropriate assumptions
 - Stress and Scenario Testing



4

Review applicable ASOPs (cont'd)

- ASOP No. 53
 - Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention
 - Exposure Base
 - A basic unit that is used to measure the future cost of risk transfer and risk retention. This unit can vary by element of cost.
 - If selecting a new exposure base, the actuary should select an exposure base that bears a strong relationship to the cost of risk transfer and is practical
 - Characteristics of a practical exposure base may include that the exposure base is objectively measurable and easily verifiable
 - Determine what data are available and appropriate
 - Select appropriate methods or models



5

Review applicable ASOPs (cont'd)

- ASOP No. 53 (cont'd)
 - Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention
 - New Coverages or Exposures
 - If the actuary is estimating the future cost for a new coverage or exposure and the historical loss and loss adjustment expenses are either unavailable, limited, or not fully representative of the new coverage or exposure, the actuary should consider the following in selecting data and developing methods, models, or assumptions for use in estimating the future costs:
 - Data from coverages or exposures that are similar to the new coverage or exposure
 - Data on the phenomenon or events that are contemplated by the new coverage or exposure
 - Differences between coverages or exposures with available relevant data and the new coverage or exposure, and
 - Appropriate adjustments to the available relevant data to reflect expected differences identified in last step



6

New (relatively) lines of business

- Cyber Liability and Privacy Protection
- Rideshare Services
- Workplace Violence
- Others?



7

Understanding the coverage

- Cyber Liability isn't the same across all companies
 - What type of loss is being covered?
 - First party vs. third party
 - What expenses are covered?
 - Notification costs
 - Credit monitoring
 - Costs to defend insured against claims by regulators and public for theft and/or misuse of PII
 - Fines and penalties
 - Data reconstruction
 - Cyber extortion
 - Fraud
 - Business Interruption
 - Contingent Business Interruption
 - Public relations



8

Understand the coverage (cont'd)

- Coverage triggers?
- If claims-made, retro dates?
- Blackout / waiting periods?
- Insured retentions?
- Limits of coverage



9

Understanding the target market

- Is there a particular industry to be targeted?
- Certain locations or countries?
- What are the applicable laws in the target market?
- What types of records are held?



10

Developing a model

- Develop a model to predict the loss
 - Considerations
 - What's the exposure?
 - Records
 - Revenue
 - Other
 - Resources
 - Statistics produced by non-insurance entities
 - Commercial rate filings



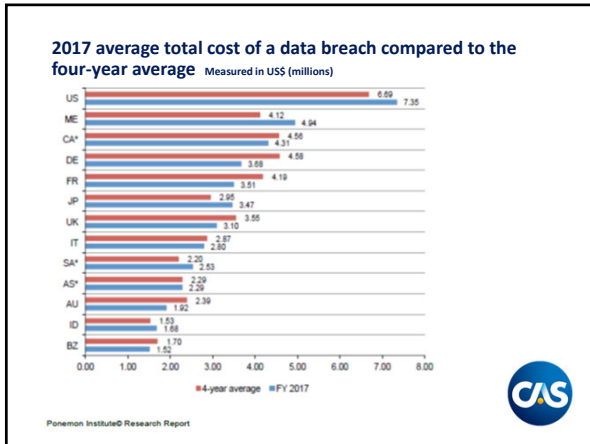
11

Developing a model (cont'd)

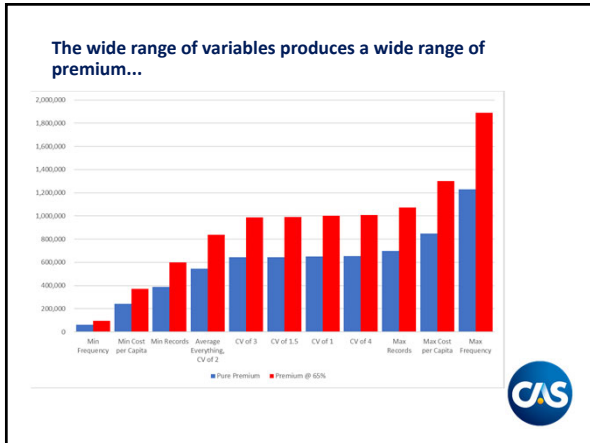
- Need to find some data!
 - Ponemon Institute
 - Commercial rate filings (can cost money)
 - statista.com (costs money)
 - data.gov



12



16



17

Cost relative to exposure

- Ponemon study doesn't have firm characteristics such as firm size, revenue, or industry
- Other sources of potentially relevant data?

18

Putting the skin on the bones

- Different limits?
 - Per occurrence
 - Aggregate
- Industry differences?
- Sub-coverages?



22

Different limits

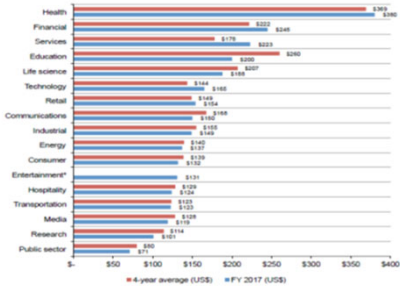
- Approaches
 - Theoretical
 - Computer simulation
- Theoretical
 - Assume a severity distribution
 - Limited expected values
- Computer simulation
 - Same answers if using the same assumed distribution(s)
- Note – this also works for deductibles / waiting period factors



23

Industry Differences

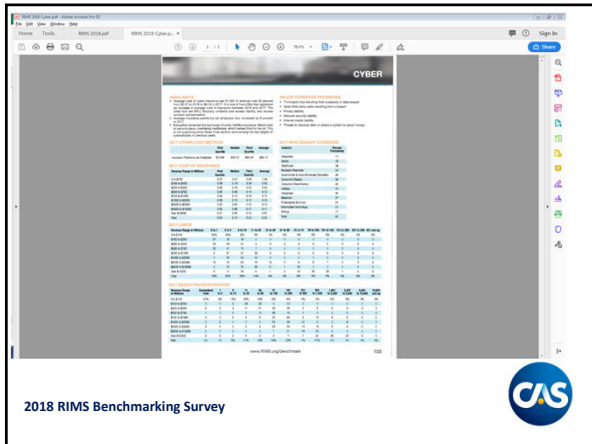
Figure 6. Per capita cost by industry classification
*Historical data are not available for all years
 Measured in US\$



Ponemon Institute® Research Report



24



28



29



30
