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Leveraging A.M. Best Data to Create Competitive Advantage

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Actuaries spend a good portion of their professional lives immersed in a world of data. Data can range in form from individual records with premium or claims information to industry-wide studies on a particular sector of industry, all the way to statistical econometrics by country. Publicly available data is an integral part of an actuary's toolkit for many reasons including:

- Most insurance companies and self-insurance programs will benefit from having more credible benchmark data available for specific industries.
- State specific insurance data may augment a company's data for lines of business subject to a state's unique influences such as private passenger auto, workers' compensation, homeowners, medical professional liability and contractors' liability.
- Proprietary data may not be shared or used for other customers without the owner's permission.

In addition to understanding the data, actuaries that can analyze and present publicly available data in a clear manner, contribute valuable input to help their companies and clients make better, more data driven business decisions.

Data Sources

The amount and variety of data available to insurance companies and related organizations are seemingly limitless. Pinnacle frequently uses external data available from sources such as:

- Government Agencies
  - Bureau of Labor Statistics (bls.gov)
  - U.S. Census Bureau (census.gov)
  - Federal Motor Carrier Safety Administration [e.g., Safety Measurement System (SMS): csa.fmcsa.dot.gov/about/basics.aspx]
  - Agency for Healthcare Research and Quality [e.g., Consumer Assessment of Healthcare Providers and Systems (CAHPS): cahps.ahrq.gov]
- Publicly Available Rate Filings
  - Insurance Company Rate Filings [e.g., System for Electronic Rate and Form Filing (SERFF): serff.gov]
  - Rating Bureau Filings [e.g., Workers' Compensation Insurance Rating Bureau of California (WCIRB)]

KEY POINT

Actuaries that can analyze publicly available data in a clear manner can help companies and clients make better business decisions.

ABOUT THE AUTHOR

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Erich Brandt is a Consulting Actuary with Pinnacle Actuarial Resources, Inc. in the Bloomington, Illinois office.

He is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. He currently serves as a member of the Casualty Actuarial Society Examination Committee and the Captive Insurance Company Association Program PlanningCommittee.

Mr. Brandt has over 17 years experience in assignments involving loss reserving, funding studies, cost allocation mechanisms, loss cost projections, competitive analysis, captive feasibility studies, personal lines ratemaking, and financial analysis of insurance companies.

Mr. Brandt has made numerous presentations to brokers, corporate risk managers, and CFO's regarding loss reserving, future loss projections and how their company's characteristics impact their actuarial calculations. He also works at length with the students and faculty at Illinois State University by teaching class sessions on insurance operations, assisting with the compilation of data for academic research, and discussing the actuarial profession with current and prospective actuarial science majors. Mr. Brandt is also a member of the advisory board for the actuarial science major at ISU.

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- External Data Vendors
  - Evogi (telematics)
  - Experian (credit)
  - Highway Loss Data Institute
  - Lexis Nexis (credit, motor vehicle records, claims)
  - Marshall & Swift/Boeckh (MSB)
  - R.L. Polk
  - Telogis

- Insurance Company Annual Statement Filings

One useful aspect of state regulation of insurance companies is that insurers are required to provide significantly more financial information annually than many industries. The National Association of Insurance Commissioners prescribes a standardized format for the Annual Statement required from all property and casualty insurance companies licensed in the United States to be used at each state's discretion. The Annual Statement is supported with detailed codification of the accounting rules that must be followed when producing the statement. The statement contains such information as balance sheets, income statements, cash flow details, premium breakdowns by line and state, reinsurance analyses, investment holdings (as well as sales and acquisitions), expense analyses, and a wide variety of interrogatories related to matters that require additional description and documentation (e.g., accounting rules, asbestos claims liabilities, ownership structures). Because of the extensive data requirements and the mandatory nature and structure of the Annual Statement, it serves as an important resource for analyzing insurance industry trends. One weakness of this data source is that detailed information by state is somewhat limited to premium and calendar year loss and loss adjustment expense data.

Commonly Used Sections of the Property / Casualty Annual Statement

- Balance Sheet (Assets; Liabilities, Surplus and Other Funds)
- Statement of Income
- Five-Year Historical Data
- Statutory Page 14 Data – Calendar Year Premium, Incurred and Paid Losses and Defense & Cost Containment Expenses (DCC) by Line by State
- Schedule D – Investments – Details on Bonds, Stocks and Other Investments
- Schedule F – Reinsurance Ceded, Assumed and Overdue Information
- Schedule P – Analysis of Losses and Loss Expenses by Line
- Insurance Expense Exhibit (IEE) – Detailed Calendar Year Underwriting Expenses by Line

The property/casualty Annual Statement serves as a starting point for many data driven analyses. The NAIC, A.M. Best Company, and other vendors have developed products that compile the Annual Statement data and make it easy to summarize and aggregate into both insurance groups (e.g., Liberty Regional Agency Markets) and industry composites.

The following four case studies present how the data from A.M. Best can be powerfully leveraged to solve problems insurance companies, captives, risk retention groups, regulators and other entities face.

Case Study 1:Trucking Insurance Loss Development Benchmarks

A new long haul trucking RRG is developing a pricing model for large fleets (more than 100 units). Because these risks have credible amounts of historical losses, a pricing approach heavily relying on prior claims experience is desired; however, historical loss development patterns for these risks either are not available or not sufficiently credible on their own. As a result, benchmark loss development patterns are needed to adjust the historical losses to an ultimate settlement basis. Furthermore, the underwriters at the RRG recognize that different trucking insurers have very different approaches to establishing case reserves and claim settlement.

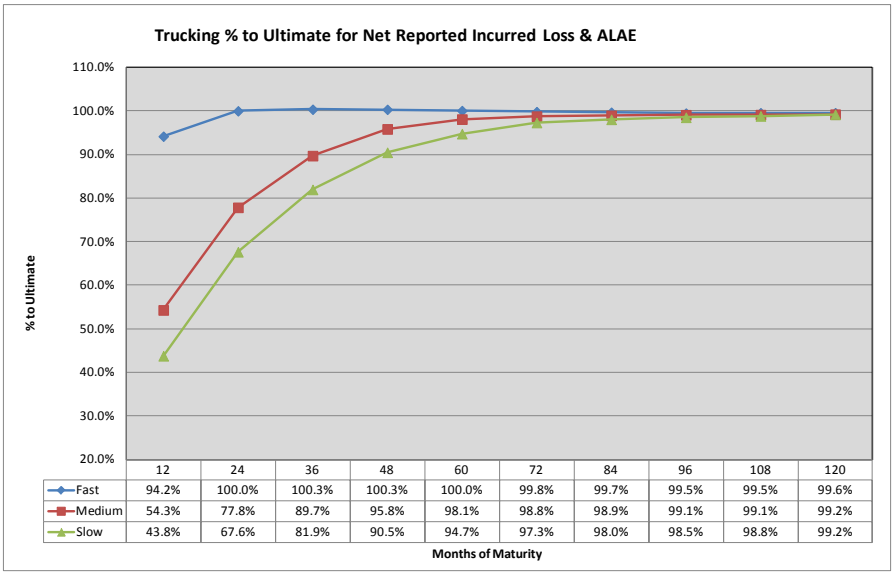
Loss development benchmarks for auto liability insurance for trucking risks present challenges. The experience for trucking risks is combined with all other commercial auto liability experience into the Commercial Auto Liability line of business along with taxicabs, ambulances, moving and storage companies, and delivery vehicles. It can be difficult to glean the separate results of trucking insurers and risks. This is the same problem faced in lawyers' professional liability and non-standard personal auto insurance lines of business, and countless other sublines that are aggregated into broader lines of business in the Annual Statement.

The key to developing a solution for this problem can be encapsulated in two steps: 1) identify insurers who specialize in insuring trucking risks and 2) develop loss development benchmarks based on their historical claims development data.

Fortunately, there are several insurers whose sole commercial auto liability writings are providing this coverage. Best's Insurance Reports can be used to identify these insurers. BIR allows a search of their business review narrative for key words. A search of BIR produces a list including not only companies specializing in trucking, but also insurers writing trucking among several other niches. Analysis of the list is required to develop the final list of benchmark companies.

To develop loss development benchmarks in this example, data from Schedule P should be compiled for each of the selected insurance companies. Schedule P, Part 1 contains a summary of accident year paid and reserved losses and ALAE valued as of the Annual Statement date. Schedule P, Parts 2 – 4 contain loss and ALAE data, by line, evaluated at annual intervals for the most recent ten years.

Benchmark loss development patterns can be created by comparing losses and ALAE reported as of various valuation dates for each company to subsequent loss and ALAE amounts. The benchmark reported and paid loss development patterns for these companies can be grouped into slow, medium and fast patterns as shown in the graph at right. Using benchmark patterns that reflect different loss reporting and claim settlement rates can help the underwriters reflect the different approaches to case reserving and claim settlement, respectively, among trucking insurers. These incurred and paid loss development patterns can then be used to adjust the historical losses received for a new business risk of the RRG.



	12	24	36	48	60	72	84	96	108	120
Fast	94.2%	100.0%	100.3%	100.3%	100.0%	99.8%	99.7%	99.5%	99.5%	99.6%
Medium	54.3%	77.8%	89.7%	95.8%	98.1%	98.8%	98.9%	99.1%	99.1%	99.2%
Slow	43.8%	67.6%	81.9%	90.5%	94.7%	97.3%	98.0%	98.5%	98.8%	99.2%

Case Study 2: State Underwriting Expense Benchmarking

A company wishes to start writing mobile homeowners insurance in the state of Florida. The developed rates will be subject to regulatory approval before coverage can be written. The company needs to estimate its expense provisions for the initial rate filing. Furthermore, the insurance department must deem the expense provisions to be not excessive, not inadequate and not unfairly discriminatory in order to approve the filing. This is where the by state and line of business Annual Statement data is valuable.

Mobile homeowners insurance data is contained under the Homeowners/Farmowners line of business in the Annual Statement. However, a search of the internet or BIR reveals several insurers who specialize in writing this coverage and have substantial business in Florida.

The selected list of mobile home insurers can be queried against a database of Statutory Page 14 data. These exhibits in the Annual Statement show calendar year premiums, losses, and DCC by state by line. Statutory Page 14 data also includes commissions and brokerage expenses, and taxes, licenses and fees data by state and line of business. This is an efficient way to produce reasonable and verifiable benchmark underwriting expense ratios for an initial rate filing. The fact that Statutory Page 14 data is line and state specific makes it easy to justify its use. However, there are a few underwriting expense categories not included in Statutory Page 14 as referenced below.

The IEE is a supplement to the Annual Statement that provides premium, loss and underwriting expense data on both a direct and net of reinsurance basis. It should be noted that the line of business breakout is slightly different from both Statutory Page 14 and Schedule P. The IEE presents countrywide results on a calendar year basis.

The IEE separates LAE into DCC and adjusting & other expenses (A&O). More important to this new product development and filing situation, the IEE also provides by line data for two other underwriting expense categories: other acquisition expenses and general expenses; neither of which are included in Statutory Page 14. While not at the state level, these underwriting expense categories would not be expected to vary by state and the IEE may well be the best available and most easily verifiable source for these expense categories.

Case Study 3: Capital and Dividend Benchmarking

A medical professional liability captive has accumulated a significant amount of retained earnings and is interested in paying a dividend. Their regulator has requested justification for the level of surplus that would result from paying the dividend.

In similar studies, we have focused on regulatory guidance (e.g., NAIC), guidelines from rating agencies such as A.M. Best, and survey results on captive benchmarks for capitalization.

One possible criteria to evaluate the captive's required surplus is the NAIC's Insurance Regulatory Information System tests. The IRIS tests provide an early warning system to identify financial problems in insurance companies.

Two of these tests relate insurer written premiums to surplus. Gross written premium to surplus creates an exceptional value if it exceeds 900%. Similarly, written premiums net of reinsurance should not be more than three times surplus. This information is readily available in the Five-Year Historical Data exhibit of the Annual Statement. For the purposes of this situation, we also examined the actual premium to surplus ratios for insurers currently rated "A-" by A.M. Best that write casualty coverages and in size categories similar to the captive. This provided an appropriate "peer group" for the captive to present to the regulators.

Another benchmark that A.M. Best monitors is the ratio of the sum of loss and LAE reserves and premium to surplus. Again, we compare the captive to the peer group of "A-" rated traditional insurance companies writing similar coverages and of a similar size to the captive. This benchmarking analysis suggested that the ratio should be between 2.0 and 4.5. Even after the proposed dividend, the captive's ratio was approximately 2.44, well within the benchmark range toward the conservative end.

In total, these benchmarks suggested that an opportunity existed for the captive to undertake a significant dividend payout using only a portion of their capital beyond that needed to meet the requirements indicated by regulators and rating agencies, and without impacting their long term viability. In essence, this was a distribution of their "free surplus" that was not needed to support the current insurance operations of the captive.

Case Study 4: Asbestos and Environmental Liability Benchmarking

In this situation, a law firm is involved in asbestos litigation and is interested in evaluating insurance company behaviors in the last five years. Insurance companies are required to make several disclosures regarding their asbestos and environmental liability experience in the last five calendar years. These disclosures are found in Note 33 of the Annual Statement and include beginning reserves, incurred loss and LAE, calendar year payments and ending reserves on a direct, assumed and net of reinsurance basis. The bulk and IBNR portion of reserves as of the Annual Statement date is also included. Data was compiled for all companies which had dollar amounts in these fields.

The survival ratio is calculated as the ending reserve divided by the average of payments over the past three calendar years. This ratio measures how many additional years the current reserve level will support ongoing payments at historical levels. One way to measure a company's asbestos reserve adequacy is to compare their survival ratio to the survival ratio of its peer companies.

Three Year Average Survival Ratio for Asbestos

Company	Lag 2 Years	Lag 1 Year	Current
1	9.36	11.60	16.15
2	7.16	3.41	3.70
3	6.61	4.74	4.97
4	8.80	10.01	8.31
5	12.14	7.97	7.99
Composite	7.34	5.07	5.60
Client	7.98	7.44	8.28

In the chart to the right, one can conclude that the Client's three-year average survival ratios compare well with the survival ratios for five of its peer companies and the industry composite ratio. There are other considerations such as loss reserve development and ratios of IBNR to held case reserves that can also be analyzed using the Annual Statement's A&E data.

There are several important data items that are not disclosed in one of the larger Annual Statement schedules. Beyond A&E liability loss activity, other items include: unearned premium reserves for death, disability, and retirement associated with "free tail" coverage; premium deficiency reserves; unearned premium reserves for long duration contracts; retroactive reinsurance contracts; and, intercompany pooling details.

Conclusion

Expertise in manipulating and presenting data is as important as the availability of the data itself. Frequently, the most robust sets of data only reveal their secrets to those whose skills go beyond the numbers into the intricacies of data manipulation with a focus on solving real business problems. We have presented four case studies where publicly available data is utilized to create a solution to a unique problem in the property casualty insurance industry. Let Pinnacle show you how we can help you develop better business decisions by utilizing publicly available data.

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