

Legacy Liabilities and Modeling

Most insurance companies carry reserves for lines or coverages that have been inactive for many years. Sometimes these reserves relate to old assumed reinsurance treaties. Other times they're for coverages that were not excluded in policy language because no one imagined that such risks were insurable. Asbestos liabilities have gained new life in recent years and are one of the few dark clouds over a healthy insurance industry.

Legacy liabilities are notoriously difficult to quantify. They test the full range of an actuary's reserving skills. Schedule P offers little help, as the prior-year line consolidates the reserve and payment development for all years older than ten years. Record keeping on old claims can be dicey. A 1964 policy and subsequent claim written by a subsidiary company acquired three mergers ago probably got lost in the shuffle.



Although it may be difficult to evaluate old reserves, creative methods can help quantify and corral the most stubborn liabilities. Here are three tools for legacy liabilities arranged from least to most effective.

Survival Rate Method

Asbestos and environmental reserves are often evaluated with survival rates, which estimate the number of years until a company's carried reserves will be exhausted. If an insurer averages annual payments of \$2 million and is carrying reserves of \$30 million, then its survival rate is 15 years. That number by itself doesn't mean much, until you compare it to industry standards. A survival rate of five years would be considered weak and could raise a red flag. This method is oversimplistic.

(Continued on page 4)

Managing Workers' Compensation Claim Development

Workers Compensation is considered a "long-tailed" line of business because of the long period between the occurrence of a claim and its eventual settlement. Some of the characteristics of the WC development patterns are unique. It is helpful to distinguish these characteristics from other long-tailed lines such as medical malpractice and products liability in order to better understand the drivers of the development.

♦ WC claims are **reported fairly quickly** in most cases compared to med mal and products liability. There is little "true IBNR" after 36 months in WC. Med mal writers address the delays in reporting claims by using claims-made policies, but this is a real issue for products liability carriers.

♦ **Reopened** claims can play a significant role in WC development patterns. In most other lines, closed claims remain settled. This is not always true in the statutory line which can cover medical costs that arise years later from an old claim that was thought to be closed.

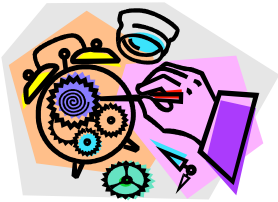
♦ **Indemnity compensation rates** are often determined by statute, meaning that the indemnity reserve is based on the length of time of the disability and the nature of the disability. Although this component is still much more uncertain than a property loss, it is not subject to quite the same uncertainty that exists in lines subject to tort and jury decisions.

(Continued on page 3)

Tweaking Schedule P

We've always been big fans of Schedule P. A single "P" contains all the data necessary for a basic reserve study. That's because it's a great schedule with a wealth of data. Every year we eagerly await the first P draft. Running the fresh data through our reserve model and peeking at the trends is probably the best part of a year-end project.

Our friend P hasn't had a makeover since 1989. It's starting to look like that in-law who still wears knits ties, or the newspaper that hasn't yet introduced color. Now is the time to improve P and here is how we would do it:



"Our friend P hasn't had a makeover since 1989...now is the time to improve P"

Expand to 15 years. Not for every line, just the long-tailed lines such as Workers' Compensation, Other Liability, Products Liability and Reinsurance Liability. On these four lines, about 30% of the carried reserves pertain to accident years before 1996. This compares to just 3% for the other lines combined. Actuaries struggle to pick tail factors when the development of these lines, especially the payments, can be going strong after ten years. Adding five extra years would double the predictive power of P.

Medical vs. Indemnity. Workers' Comp is P's biggest line, representing 20% of all reserves. We would like to see medical and indemnity go their separate ways. Combining them in P masks important trends related to health care (medical) and unemployment (indemnity). They have different loss patterns and most companies already analyze these pieces individually.

Treat AO expenses with respect. Adjusting and other expenses are excluded from Part 2 development and IRIS tests. The theory is that since AO expenses can't be traced to a single claim and are artificially spread across accident years, Part 2 would suffer from the resulting annual fluctuations. There is some truth to that. However, it's not like AO expenses are the only estimate in P. Case loss reserves are subject to greater variation. Let's stop treating AO like a misfit.

Dump the loser lines. Special Liability (1% of industry reserves) needs to find a new home. Put it with CMP. International (.2%) is a waste of ink. The premium for Products Liability has gotten small enough to justify a merger with Other Liability.

Standardize claim counts. Companies can express reported and open claims on either an occurrence or claimant basis. We prefer claimant because it is a more accurate reflection of the number of total files. An industry standard would help actuaries compare average case reserves and settlement rates to industry standards.



Perhaps you have Schedule P improvements you'd like to share with us. In our next newsletter we'll publish the best ideas. Email steve@streffinsurance.com with your comments.

Managing Workers' Compensation Claim Development (Continued)

(Continued from page 1)

♦ **WC payments can continue** for 20 to 30 years, long after the claim has been completely adjusted. This results in inflationary impact, depending on individual state law that will determine the ultimate claim costs. Usually, in the other lines mentioned, once the validity and amount of the claim has been determined, the payment is made immediately.

Because of the dependence on state statutes and benefit levels, the development patterns can vary significantly by state. In recent years, differences in the allowance of medical care management and attorney involvement in what was intended to be a “tort-free” line has had a huge impact and were key drivers in the states that show the longest development patterns.

The nearby table shows industry (NCCI Annual Statistical Bulletin for all but PA & WI, which came from bureau rate filings) tail factors for eight years to ultimate for selected states. A *paid* tail factor of 1.323 means that after eight years, we could expect accident year cumulative payments to grow an additional 32.3%. Similarly, an *incurred* tail factor of 1.166 means that paid plus case reserves reported as of eight years will increase an additional 16.6%.

Notice that some states like Minnesota have huge *paid* tail factors. This is understandable because of inflation adjustments built into the benefit structure. What is more alarming is that some of the states show large *incurred* tail factors, especially for medical coverage. Since there is no significant late reporting at this point, these high tail factors indicate considerable inadequacy of case reserves after eight years.

The Minnesota medical factors imply that case reserves should be about three times higher than they are, while the indemnity factors imply that they are only 50% inadequate. The industry seems to do a better job with case reserving on the indemnity

component for some of the reasons previously mentioned. The late medical development is caused by unexpected medical conditions whose origins can be traced back to the job-related injury. Each state's level of judicial “openness” to allow wider interpretation as to what constitutes a job-related injury has a significant impact on the unpredictability of such late development, especially on soft-tissue injuries that may have contributing factors other than a specific job injury.

This uncertainty can create fluctuations in reported income and surplus due to inaccurate estimates that were made in previous years. Perhaps even more damaging, is that poorly estimated ultimate losses can lead to inaccurate pricing, either causing unprofitable future loss ratios or opportunity costs due to

the inability to write profitable business because of pricing that is perceived to be too high.

Estimation of ultimate losses is made more accurate by properly managing the drivers within the claims process that cause uncertainty and fluctuation in the development patterns. WC development can be made more consistent and predictable when companies emphasize:

- Early claim reporting,
- Rapid medical intervention and managed care principles,
- Aggressive back-to-work policies,
- Sophisticated and enforced fraud detection,
- Objective, statistical-based case reserving that is consistently monitored, and
- Managing loss adjustment expenses to an optimal point.

	Industry WC Tail Factors: 8 years to Ultimate			
	Paid		Incurred	
	Indemnity	Medical	Indemnity	Medical
CA	1.120	1.287	1.042	1.298
CT	1.263	1.215	1.184	1.125
IN	1.033	1.052	0.995	1.052
IA	1.114	1.152	1.045	1.123
KS	1.031	1.159	0.997	1.149
MO	1.080	1.116	1.022	1.099
MN	1.323	1.448	1.166	1.306
PA	1.207	1.472	1.009	1.309
WI	1.109	1.178	1.043	1.141



Streff Insurance Services
406 West Third Street, Suite 450
Red Wing, MN 55066
www.streffinsurance.com
651-385-7500



Streff Insurance Services provides a wide range of actuarial consulting support to property and casualty insurance companies, self-insurance funds and state insurance departments. We trace our roots back to 1983 and have been located in picturesque Red Wing, MN since 1995. Since then our client base has steadily grown and our relationships with our other insurance vendors have strengthened.

We are known for our concise and informative reports, independent views and practical advice. Open communication and a sharp focus on the end product are the keys to meeting project deadlines and keeping clients satisfied. Our areas of specialty include loss reserves, pricing, reinsurance analysis, start-up feasibility studies, strategic management and industry research.

Legacy Liabilities and Modeling (Continued)

(Continued from page 1)

Standard Projection Methods

Legacy liabilities earned their reputation by defying traditional actuarial methods. The typical “data triangles” that work so well for property and medium-tail lines such as homeowners and auto liability, break down when one tries to quantify the impact of new coverage classes and the whims of the legal system. These reserves tend to ebb and flow with economic and tort cycles. Standard projection methods can’t handle that environment well.

Simulation Modeling

Recent years have seen advances in the use of modeling for sticky reserve situations. Modeling gives the analyst the flexibility to incorporate and adjust a wide variety of assumptions and inputs. Simulation software can compile virtually all possible outcomes

and create a range of possibilities around an expected value.

Last year we helped a client estimate its legacy liabilities. The company was beset by an initial wave of claims for a coverage that was later specifically excluded from such policies. These liabilities seemed to be headed for closure until a group of lawyers roused up a new batch of willing plaintiffs and a fresh wave of claims was upon the company.



Our model used simulation techniques built around frequency and severity curves. While the client booked reserves just slightly above our midpoint, the upper end of the range helped establish a “worst case scenario”. Going forward we can monitor the key assumptions and update the model as needed.