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Why Actuarial Pricing Discipline Matters in Captive Insurance — and How to Strengthen the Partnership

As the captive insurance industry continues to expand, and innovate with novel coverages, actuaries need to exercise disciplined pricing and clear communication for meaningful partnerships with captive owners.

By: Pinnacle Actuarial Resources, Inc. | September 2026

Captive insurance has long been a space for innovation, offering coverage solutions that the traditional commercial market cannot or will not provide. But with that innovation comes complexity, particularly for the actuaries tasked with pricing risks that may have no historical data, no benchmarks, and no established methodology to fall back on.

That complexity places a heavy burden on actuarial discipline. When pricing decisions are made without the proper foundation, the consequences can ripple across the captive, its owners, and the broader insurance profession.

“Actuarial pricing discipline means keeping your feet firmly grounded in Actuarial Standards of Practice,” said Aaron Hillebrandt, Principal and Consulting Actuary at Pinnacle Actuarial Resources.

“Some may not realize that the actuarial profession is self-regulating. We have bodies within the American Academy of Actuaries that promulgate standards of practice, and actuaries must follow those standards.”

The Stakes of Straying From Discipline

In traditional lines of business, like workers’ compensation, actuaries have decades of data and well-established benchmarks to guide their work. Captives, however, frequently venture into uncharted territory, depending on the risks they house.

Aaron Hillebrandt, Principal and Consulting Actuary, Pinnacle Actuarial Resources

“Captive insurance is typically one of the most innovative sectors of the insurance industry,” Hillebrandt said. “Actuaries working with captive insurance companies must judiciously manage that innovation.”

“For example, there may be a new captive insurance company insuring a risk the commercial market doesn’t insure, or a coverage that has not been written in the past. So, an actuary does not have the same benchmark data to fall back on as they would for a well-established risk like workers’ compensation.”

When historical exposure, loss, and premium data don’t exist, taking a shortcut might be tempting. Hillebrandt likened selecting the right actuary to finding the right medical specialist — a process that isn’t always straightforward.

“Many novel coverages require significant upfront research and investment to build an exposure rating model when you don’t have the data to experience rate,” he said.

“And pricing can go astray when the research hasn’t been done. A firm that doesn’t have the bandwidth to invest in time and research, for example, may go ahead with the project anyway because it doesn’t want to lose the opportunity.”

The results of undisciplined pricing can be severe. Hillebrandt recalled a fronted captive arrangement where the front set premiums using a generalized exposure rating plan while his team analyzed the underlying loss data. A deteriorating loss trend told a very different story.

“After evaluating the data, we determined that the front’s pricing assumed a 120% loss ratio,” he said. “We recommended that the premiums needed to be significantly higher, and the deteriorating loss ratio required attention. That was a difficult issue, but one they needed to address.”

Another common pitfall Hillebrandt sees in his regulatory review work is the overuse of simulation models for novel coverages.

“Simulation is a useful tool in some contexts, but if a coverage is novel and the loss history doesn’t exist, there’s nothing to parameterize the model. Yet, the parameters have to be set to something,” he said. “The output may look impressive because a simulation model gives you 10,000 or 100,000 simulated claims, but the foundation isn’t there and that outcome doesn’t have the needed support.”

When those shaky foundations give way, the fallout hurts more than just the individual client.

“It reflects really poorly on the industry when an undisciplined approach leads to a program failing,” Hillebrandt said.

“That’s a black mark on the actuarial profession, not just on the individual actuary, but on all of us.”

Building a True Partnership Between Actuary and Captive

For captive owners, managers, and carriers, the antidote to undisciplined pricing is active engagement. That starts with viewing the actuary as a strategic partner rather than a vendor delivering a report.

“I like to tell clients not to view us as simply a supplier of a product, but rather as a partner and a strategic advisor,” Hillebrandt said. “We want to be in the trenches with you, helping solve the issues you’re dealing with, not just calculating numbers.”

That partnership hinges on dialogue. Hillebrandt encourages clients to ask questions, and he points to a resource developed by a coworker entitled, “10 Questions to Ask Your Actuary” as a starting point. Among the questions worth asking your actuary:

- Is this a coverage you price all the time, or is this novel?
- What methodologies are being used, and are they standard?
- What are the most important assumptions in the analysis, and would a different selection produce a materially different result?

“You don’t have to be an expert on the analysis to ask those sorts of questions,” Hillebrandt said.

“But those questions can get the actuary to start talking, and depending on the quality of that communication channel, you can really learn a lot about what’s under the hood.”

That dialogue often runs both ways. Captive owners frequently possess qualitative context — operational changes, safety initiatives, market shifts — that never appears in a standard actuarial dataset but can meaningfully inform assumptions. “Anytime we can get that dialogue going, I think it just makes a more robust product and leads to better business decisions at the end of the day,” Hillebrandt said.

Diplomatic communication also matters when the actuary must deliver an unwelcome message, such as recommending a higher premium.

“It’s like many other disciplines that require practice and repetition,” he said. The goal is to equip clients with the tools and comfort level to challenge, question, and ultimately trust the work being done on their behalf.

Where Technology Fits and Where Humans Still Matter Most

Technology is beginning to reshape how actuaries approach their work, and captives stand to benefit substantially. Much of the friction in captive pricing today comes not from analysis, but from data wrangling.

"It's not unusual for captive insurance companies to just provide PDF loss runs; data from different years from different insurers or TPAs, all in different formats," Hillebrandt said. "Believe it or not, a significant part of the work we do as actuaries is data wrangling, as data quality is vital. There is even an Actuarial Standard of Practice (ASOP) dedicated to data quality."

Automated tools and AI models trained on loss runs can standardize data with the click of a button, flag inconsistencies, and provide a valuable double-check on manual work.

"This automated check ensures we didn't miss anything, and it doesn't add much to the timeline or process, but it can potentially save all stakeholders significant future headaches," Hillebrandt said.

Freeing actuaries from manual data preparation allows more time for the work that truly moves the needle: sensitivity testing, scenario analysis, and refining assumptions. Pinnacle is actively exploring these tools, though Hillebrandt cautioned that data security must remain paramount.

Still, no algorithm can replace the value of a candid conversation.

"There's a stubborn, and I believe unfair, characterization that actuaries are solely math whizzes with heads down deep in data. They are considered experts but to whom you shouldn't even bother asking questions, as the answers could be too technical to understand," he said.

"One of the missions I'm personally on is to move the world to understand that actuaries can be strategic advisers and not just number crunchers. We are human and can help our clients with their businesses, strategy and goals."

As captive insurance companies continue to innovate and technology continues to evolve, the foundation remains the same: disciplined pricing, transparent communication, and a genuine partnership between actuary and client.

"At a high level, actuarial pricing discipline is critically important," Hillebrandt said.

"We want clients to be able to verify that we've taken a disciplined approach to pricing. To achieve that end, we focus on building strong communication channels that allow clients to question our methodology and ultimately arrive at that mutual conclusion."

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