

# Getting the most from your actuary

Here, Joseph Herbers of Pinnacle Actuarial Resources, illustrates what questions to ask to get the best out of your actuary

MOST CAPTIVE managers appreciate actuaries for estimating accruals for unpaid loss and loss adjustment expense reserves, and for determining future funding levels. But many managers are not benefiting as much as they can from their actuaries.

Dialogue between captive management and their actuary can be frustrating and difficult to understand. Part of this is due to the reality that actuaries tend to be more math-oriented and have difficulty communicating material in lay terms. The actuarial work product is filled with assumptions, complex models and caveats about uncertainty. The report narrative and/or oral presentation are often filled with jargon, awkward explanations and confusing logic. It's no wonder that captive managers can be uncomfortable about asking their actuaries tough questions.

## The actuary's real value

The real value of actuaries is their ability to synthesise information about each aspect of the captive's operations (marketing, underwriting, claims, legal, and systems, for example). They then can determine reasonable accruals for unpaid claims liabilities and/or reasonable funding estimates for next year's retained exposure.

Changes in claims handling, for example, can have a profound impact on unpaid claims accrual. If management's

desire to be 'tough' on claim settlements, presumably more time, effort and money is spent on investigating a claim's merits and possible strategies for disposing of the claim. Slowing down claim settlements may put upward pressure on claims adjustment costs, but could result in lower average settlements.

Understanding the dynamics and, more importantly, the timing of such changes is crucial for an actuary to understand. That way, an actuary can determine which actuarial methods best apply, and/or the adjustments needed to produce reliable estimates of loss and loss adjustment expense reserves. Otherwise, projections may be significantly biased.

The actuary will generally inquire about changes, but it is incumbent on all involved to make certain appropriate adjustments and/or judgments have been made to account for such changes. Underwriting criteria changes, for example, can alter overall profitability. Therefore, the actuary must know about changes to develop reliable premiums or funding amounts for the upcoming year.

## Questions you should ask

It is incumbent for captive managers and service providers to ask the actuary specific questions in the normal course of business. These questions should address the

fundamental concepts being addressed and how to better understand conclusions.

Questions to ask include:

1. What data did you rely upon? Do you have any concerns about reliability?
2. Did you use any information beyond our organisation's in your analysis?
3. What are the three most important assumptions in your analysis?
4. Do your conclusions differ from those of management?
5. Are your conclusions conservative, pessimistic or about in the middle of the range?
6. What has been the historical accuracy of your prior conclusions?
7. Does your range of results reflect all possible outcomes or is it a range of reasonable outcomes? What assumptions affect the endpoints of that range the most?



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8. What operational changes influenced your analysis? What adjustments have been made to reflect those changes?
9. How do your conclusions compare with last year?
10. What has changed since last year (data, methods, assumptions)?
11. How do our results compare with our competitors, peer companies or industry-wide averages?
12. Have you had difficulty dealing with auditors? How were problems resolved?
13. What are the key risk factors contributing to the uncertainty in our current (and future) financial condition?

**Uncertain future**

Actuaries predict the future, but we are not soothsayers. When projecting the accrual for unpaid claims liabilities at a given date, actuaries often determine a reasonable range of accrual based on past experience in order to deal with uncertain future claim outcomes. Quite simply, the odds are better when predicting values within a range than a specific point in that range.

Consider a geographic analogy of predicting where a meteor may fall vis-à-vis the actuary's prediction. If the actuary is only fair, the prediction may be in the right county. If the actuary is good, the prediction will be in the right postal code. If the actuary is very good, the prediction will be in the right city block.

Challenge your actuary on the historical accuracy of prior year predictions (see Question 6). At a very minimum, they should be able to reconcile actual changes with those in prior year predictions as it relates to assumptions that turned out to be too high or too low. Illustrations, such as graph 1, can be very useful in communicating.

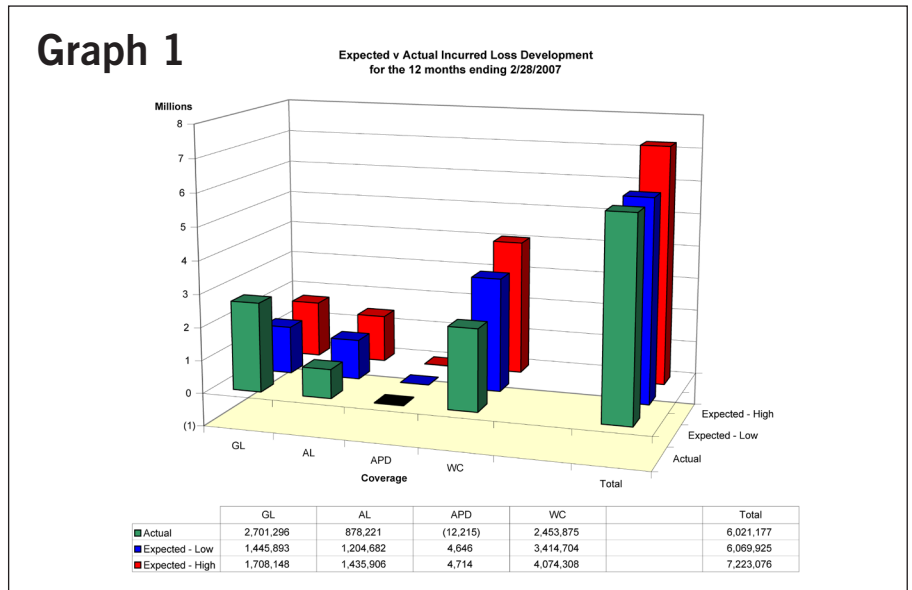
In this example, the actual loss development of US\$6.021m was just below the expected loss development of US\$6.066m.

Should the actuary's projections be systematically too high or too low by a considerable margin over a period of years, legitimate questions may arise concerning the efficacy of the process being used.

Consider the 'report card' in graph 2, which compares the projected ultimate losses by component (paid losses, case reserves and incurred but not reported [IBNR] reserves) over time for a captive's casualty exposure.

If the range for IBNR reserves (between US\$4.567 and US\$7.137m) were a good prediction at the 2/03 evaluation, the runoff of paid losses and case reserves in the next several years would be offset dollar for dollar when reducing IBNR reserves. In fact, the change in paid+case reserves between the 2/03 and 8/07 evaluations was approximately US\$4.047m. The reduction in IBNR reserves was US\$4.119m. The reduction of the IBNR reserves at the high

**Graph 1**



end of the range was US\$6.239m. The actual loss development (so far) is in line with the low end of the IBNR projected at the 2/03 evaluation. In this case, the actuary's prediction is quite impressive.

Future predictions are often better when the impact of real world operational changes is incorporated into the process because the impact of changes in the marketing, underwriting or claims administration can be significant.

For example, an important operational change occurs with a new third-party claims administrator (TPA). Every TPA has a different philosophy about reporting, reserving, settling and, ultimately, closing claims. If there are significant differences in how case reserves are set on individual claims between the current and prior TPA, projecting accruals for unpaid claims liabilities using historical data can be much more difficult.

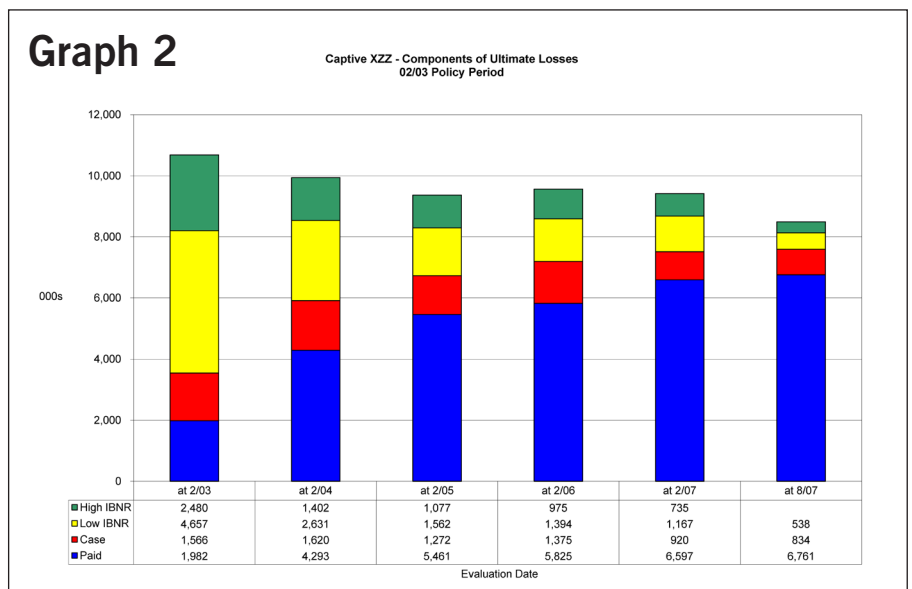
Consider the example illustrated in

**“Actuaries often determine a reasonable range of accrual based on past experience in order to deal with uncertain future claim outcomes”**

graph 3, where a new claims administrator was hired in the 2001 policy period (subsequently replaced in 2005), resulting in average reserves per open claim file significantly lower than that of its predecessor TPA.

The 12-month evaluation point represents the end of the policy period. As time progresses – 24, 36, or 48 months of development – the more claims are reported, settled and closed. Generally, the value of remaining outstanding claims increases

**Graph 2**



### Graph 3

Average Reserve per Open Claim

Policy Period	Evaluation Point - Measured in Months					
	12	24	36	48	60	72
1/96-1/97	5,254	13,613	20,054	10,227	9,820	12,252
1/97-1/98	4,195	15,298	22,953	25,085	26,738	23,572
1/98-1/99	4,891	16,444	14,697	16,094	14,204	27,880
1/99-1/00	4,713	18,953	39,179	48,331	100,661	48,631
1/00-1/01	6,885	21,372	21,266	24,351	28,991	28,589
1/01-1/02	5,003	11,864	21,712	48,237	66,071	83,406
1/02-1/03	4,700	10,859	17,880	19,967	24,617	
1/03-1/04	4,890	12,661	20,141	19,194		
1/04-1/05	5,451	16,275	19,592			
1/05-1/06	7,820	20,531				
1/06-1/07	8,491					

**“Actuaries are trained to ask questions about operational changes and to make appropriate adjustment to their analysis accordingly”**

about operational changes and to make appropriate adjustment to their analysis accordingly. However, the impact of such changes may not always be clear. Other operational changes may be happening in tandem with uncertain data impact. It is vital that captive managers are given all pertinent information about operational changes before conducting the analysis.

**Ask the key questions**

Actuaries can provide the holistic view of captives. They can view an insurance enterprise and assimilate information from various operational aspects to develop reasonable accruals for unpaid claims liabilities and future funding. Getting the most from your actuary’s value happens when captive management ask questions about the how, what and why about actuarial conclusions.

because the more severe claims take longer to settle.

If we look down the columns of figures, we can make inferences about the relative adequacy of case reserves between the TPAs. It appears the relative adequacy of reserves was diminished at the 24 and 36 month evaluation points in time. It

turns out the TPA hired in 2001 had a less conservative viewpoint concerning the probable ultimate claim settlement costs. In such situations where case reserves are lower than with the prior TPA, larger accrual for IBNR reserves, all else being equal, will need to increase.

Actuaries are trained to ask questions

