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method continues to have a smaller standard error at all lengths of claims run-out.

This result is slightly misleading in that there is actually no correlation between the two estimators. The Completion Factor method tends to exaggerate IBNR in high claims incurral months, while the Paid PMPM method yields IBNR estimators that are independent of actual incurred claims amounts in the months estimated.

I summarize the characteristics of each of these three methods in Table 4.

Hybrids, Not Cookbooks

A logical next step might be to ask if a hybrid of these three methods might yield better results by moderating the inaccuracies of the assumptions implicit to each. I applied such mixed methods to the sample data, using the Paid PMPM and Incurred PMPM methods, respectively, for the final three months of claims incurral leading up to the valuation date. I used the Completion Factor method for periods more than three months before the

valuation date. The results are summarized in Tables 1, 2, and 3, and are listed immediately below the results for the "pure" Paid PMPM and Incurred PMPM methods, respectively.

In this example, the hybrid methods appear to generally give improved results over any of the three pure method estimators. In particular, the hybrid three-month Paid Claims PMPM method appears to consistently yield better results than any other estimation method. This is somewhat surprising in light of the fact that, even with three months of claims run-out, the pure Paid Claims PMPM method appears to outperform the Completion Factor method.

Rather than speculate here on the reasons for this apparent paradox (see my earlier disclaimer on covariance), I invite anyone who cares to repeat this analysis on separate data to check for the reproducibility of this result.

In conclusion, it's clearly time to discard the Completion Factor method for estimating IBNR reserves as the mathematical atrocity it is. While an approach such as the Completion Factor method may have been a practical necessity in the age of slide rules and adding machines, its lack of mathematical soundness condemns it in the age of computers.

It's not sufficient to resolutely memorize cookbook methods in much the same manner as 16th-century scholars clung to Aristotle and Galen as Holy Writ. We must critically revisit and reexamine our basic methods for sound thought and reasoning, discarding outdated and unsound methods when necessary, and replacing them with newer, well-founded analyses. There's always a better way; it's up to us to find it.

Note: No gerbils were actually harmed in the preparation of this paper. ●

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