

DISCUSSIONS OF PAPERS PUBLISHED IN VOLUME LII

RESERVING FOR RETROSPECTIVE RETURNS

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DISCUSSION BY F. J. HOPE

The Casualty Actuarial Society is fortunate that Mr. Fitzgibbon has initiated a study into this important but long neglected area of reserving. Retrospective rating is the accepted way of life in many large insurance accounts, and the premium volume now written on this basis exceeds the volume in several of the annual statement lines of business in some companies.

Taking his points in order, I agree with his definition as to component parts which should make up the total amount of reserves for annual statement purposes.

As to "negative" reserves, i.e., the anticipation of additional premiums due the company, it does seem appropriate that such be included in the annual statement, provided that one is fully confident that the money is truly forthcoming. Of course, if the staff, time, and data are available for individual risk calculation, then a negative reserve indication can be treated with confidence. We have generally been skeptical of formula indications of such reserves, based on past data, except in periods of known rate inadequacy in a major line of business. There is also the practical difficulty of acceptance of such reserves by the regulatory authorities.

Turning to the characteristics of a good reserving method, Mr. Fitzgibbon has compiled a most acceptable list. I would only suggest that the element of relative stability be added. By its very nature, retrospectively rated business lends itself poorly to the accepted calendar year accounting methods of determining profit and loss, and wide fluctuation of reserves should not be allowed to compound the problems. With reference to this point, I will merely note here the opening sentence in paragraph 2 of the section on reserve method characteristics, which reads:

"The total reserve can be considered to be composed of the sum of a reserve for each line of insurance for each policy year."

There can be no quarrel with this consideration, since the annual statement pretty much requires that there be such component parts. At a later

point, I would like to question whether it necessarily follows that the components must first be developed individually without regard to the consequent total.

The formula for reserving starts on the logical premise that the reserve should vary inversely with the loss ratio. There will be many individual instances where the facts do not support the premise, but the logic is sound on a long term, aggregate basis.

A simple formula relating loss ratio and "deviation" ratio has been developed, in the form: $Y = .472 - .539 X$, with X representing the loss ratio and Y the deviation ratio, i.e., the ratio of net return and additional premium to standard earned premium. Given X , Y is determined and applied to a policy year standard premium to estimate the total deviation anticipated by that body of experience. Returns and additionals paid to date are then subtracted to determine a net reserve for that policy year.

The formula rests largely upon the consistency of past deviation ratios in relation to the present and future. But in the light of workmen's compensation ratemaking methods and the expense gradations common to most states, it can be expected that the deviation ratios will not change radically on a substantial volume of interstate compensation business. Probably the greater threat is the slow erosion in factors such as Table M. It might be noted, in fact, that when a loss ratio of 60 percent is assumed, the formula now produces a deviation ratio of about 15 percent. This must certainly be more than the average expense gradation in this body of experience, indicating the strong possibility that the two constants were based on data rated with an inadequate insurance charge, and must ultimately be adjusted to reflect the revision of Table M.

We noted with interest that the deviation ratio in our company for the same five policy years averaged within one-half of one point of those upon which the formula is based.

Exhibit I shows a complete application of the formula to one policy year through 54 months of development beyond expiration of the latest policy, pointing up some of the difficulties of evaluating immature data, as commented on in the section citing the difficulties of a runoff test.

There is an interesting observation that under the formula, excessive loss reserves are offset in part in their impact on underwriting results because they tend to reduce the reserve for retrospective returns, and, of course, this applies in reverse to less than adequate reserves. The underwriter must take some comfort in this self-correcting device, while the claims man and the actuary must search their respective souls for the truth.

The brief sections on other reserving formulas seem to require no comment.

With respect to methods for other lines of business, reservations had been expressed earlier as to the necessity of building the total reserve from the sum of the parts. Application of retrospective rating to other lines of business is generally a combination of several lines at a time, and entry into Table M is based upon total expected losses. It would seem appropriate to examine techniques which would produce the best reserve in the aggregate as a first step, with appropriate adjustments by line to recognize past experience and such other significant factors as might exist, but with a moderation that would avoid undue fluctuations and still balance to the total.

A separate formula has been developed to convert net reserves to a "returns only" basis, using essentially the same techniques as in the earlier formula. The data needed to develop the constants is of such detail as to be available probably to only a few carriers at the present time.

It is difficult to understand the rationale underlying the concept of reserves based on return only. It is the essence of retrospective rating that, risk by risk, loss ratios will vary around some expected loss ratio. On that basis, we balance charges against savings, and it is not clear why we should depart from that concept in reserving. Admittedly, we are balancing premiums not yet collected against estimated return premiums, but the practical effect is probably no worse than developing earned premium from premiums written, but not yet collected.

Finally, we agree with the concluding observations made by Mr. Fitzgibbon and extend our compliments to him for a job well done.

DISCUSSION BY D. R. UHTHOFF

I doubt if any of us are thoroughly satisfied with our own company methods for reserving against retrospective returns. Even though we may have taken pains with and given much thought to this problem, it's the kind of thing we can't be very sure of and it's likely to come up for intensive review at least once a year, certainly in preparation for annual statement time. It's good to be able to compare notes with Mr. Fitzgibbon as he describes and discusses an attractive-looking method used by his company, and also as he points briefly to other reserving methods, perhaps simply to demonstrate his open-mindedness to these other methods, even