EXPENSE ALLOCATION IN INSURANCE RATEMAKING

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REVIEWED BY DAVID KLEIN

The authors are to be commended for their willingness to address as controversial a subject as expense allocation. Their approach provides one with a basic introduction to the subject. This reviewer, with a limited experience with the subject, feels that a few general comments are in order.

For sometime actuaries have recognized the necessity and appropriateness of expense flattening. In Workers' Compensation, the practice of expense graduation has been in place for many years. In the larger commercial lines, the issue of expense requirement has been implicitly or explicitly dealt with through large account programs such as IRPM's and Commission Contribution. It has been the staggering increases in Personal Lines premiums over the past five years which has brought the issue to the fore in this arena.

One major issue suggested by the author in their general discussion is the accuracy of the expense data upon which our fixed and variable allocations will be made. Actuaries familiar with the vagueness of New York Regulation 30, which forms the basis for much of property and casualty insurance accounting, will shudder when they think of the potential uses being made of data collected under those guidelines. Put another way, how good is the base we are allocating? As we move into an era where more refined treatment of expense provisions is required, we should not only focus on the redistribution of expenses, but also whether we must consider the costs have been properly

assigned in the first place. Is Regulation 30 adequate in its definition? How good are company internal procedures? These issues must be resolved if expense allocation is to have any degree of credibility.

Another major issue surfaced by the authors is the role of critics of the insurance industrys expense allocation process. Industry critics tend to concentrate on the flattening of the higher premiums payers without proper recognition of the impact of this approach on those at the lower end of the spectrum. The authors appropriately reference to the "two edge sword" aspect of expense flattening, specifically when applied in Homeowners insurance and the adverse effect that it may have on the tenants forms, particularly, the lower valued forms. Unfortunately, the authors suggest an approach to deal with this "problem" which violates the basic principal of cost based pricing by artificially lowering the flat (affordable) expense charge for the tenants forms to make it socially acceptable. This is an apparent contradiction to an earlier section of the paper where they caution that "there is considerable danger in pricing an insurance product in response to social objectives."

The area of commission and taxes is one where this reviewer and the authors are in agreement. Together these two items represent an amount equal to, if not greater than, the expense dollars which would be flattened under the ISO approach described in the paper (page 52).

The points raised by the authors relative to the compensation of the producer force bear careful study by agents' associations if they are to avoid having the matter decided for them without their input. Regarding the flattening of premium taxes, the authors correctly point out that it is up to the states to take the lead in revising their procedures if anything is to be accomplished in these areas. Finally, this reviewer agrees with the authors that "the proper allocation of profit to an insured is a difficult and complicated issue" which "is wide enough in scope to be the sole topic of a paper" (page 46).

This reviewer was disappointed by the authors failure to discuss the impact of expense flattening on loss ratios. Non-actuaries rely on loss ratios to evaluate results and often actuaries have to use or explain loss ratio data. With the use of expense flattening, loss ratios will become less meaningful unless properly interpreted to reflect the impact of the revised expense allocation procedure. The authors failure to mention this point is hopefully a matter of oversight and not for lack of recognition of its importance.

The above comments are intended to be a general review of the major points of the paper. On a somewhat more technical basis, on page 47, formula (7) indicated a fixed expense portion which is loaded for variable expenses.

$$(7) \qquad h = \frac{e}{(1 - c')}$$

This implicitly increases the flattening and in the mind of this reviewer, is unnecessary. As a corollary, it makes the ratemaking process unnecessarily complicated.

An alternative procedure would be to make the denominator of equation (4), a function of only taxes, commission and profit, and to make variable expenses a function of pure loss. Under this suggested approach

$$R'_N = \frac{Rn \times (1 - C_2 - .25C_1)}{1 - C_2} + \frac{e}{1 - C_2}$$

This formula uses the factor $(1 - C_2 - .25\ C)$ to generate the loss, loss adjustment expense, and variable expense portion of the rate. The constant expense portion of the rate is shown separately, and both are loaded with those elements which are variable with premium. This makes the constant term independent of the variable portion of expenses.

Using the above suggested approach in the content of ratemaking simplifies the process. We may begin by expressing R'_N as follows:

$$R'_N = NR + KR$$

where

$$NR = \frac{R_N (1 - C_2 - .25C_1)}{(1 - C_2)}$$

$$KR = \frac{e}{1 - C_2}$$

NR can be thought of as the rate excluding the expense constant.

We may then proceed to redefine the expense elements in terms of NR and move along as in the past. When all revision calculations have been determined, the final rates are adjusted by the amount KR.

We define the PLR for NR as follows:

$$PLR' = \frac{R_N \times PLR}{NR}$$

$$= R_N \times \frac{(1 - C_2 - C_1)\ (1 - C_2)}{R_N \times (1 - C_2 - .25C_1)}$$

$$= \frac{(1 - C_2 - C_1)\ (1 - C_2)}{(1 - C_2 - .25C_1)}$$

The indicated change in NR can now be defined as follows:

$$I_{NR} = \frac{L'/P'}{PLR'}$$

where

L' = developed and trended loss and loss adjustment expense.

P' = total premium at current net ratio (NR).

Territory and/or class rates can then be developed as before and then adjusted for the revised expense constant:

$$KR' = \frac{e^1}{1 - C_2}$$

The method is conceptually sounder and procedurally easier to deal with than that suggested by the authors.

Other issues raised by the paper but not discussed, include items such as appropriate record keeping to reflect the collection, referral and cancellation of policy fees and allocation problems when the fee covers multiple lines of business on the same policy. This, along with the unlimited number of potential factors which could be considered for potential redistribution, strongly suggests that ratemaking and accounting concepts should be closely developed. This will permit responsiveness to the issues and ensure that the costs associated with improved equity objectives do not become overwhelming.

The authors point out that their paper tries to present "the basis concepts unlying the proper allocation of underwriting expenses." It presents the reader with a primer on some of the issues surrounding the subject and clearly demonstrates the potential for further work on the subject.