

**TRANSACTIONS OF SOCIETY OF ACTUARIES
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REINSURANCE AND RETENTION

- A. What methods are used to determine limits of retention for Ordinary life insurance? Group insurance? Individual Sickness and Accident insurance? Other benefits? How is reinsurance of special features, such as the guaranteed purchase option and the one year term dividend option with accumulations handled?
- B. Have any new procedures or methods for reinsurance been evolved recently? How widespread is their use and what advantages or disadvantages do they have? What are the advantages and disadvantages of reinsuring on a participating or nonparticipating basis?

MR. FRED DEBARTOLO: In the American United Life we feel that in most instances the determination of retention for Ordinary life insurance becomes a matter of sound business judgment influenced by a variety of factors.

Recently our company studied the retention problem and used an approach as indicated below.

We first developed a model office, representative of our standard business in force, after analysis of the following:

- a) Standard issue, by age and policy size for each of the last three calendar years.
- b) Death claims on standard issues for each of the last three calendar years by policy duration at death, age, policy size and amounts per death as well as average policies per death.
- c) Standard in force by the various policy durations, 1st policy year, 2nd policy year, 3rd to 5th policy years, 6th to 15th policy years, and 16th and later policy years.
- d) Issues for large amounts (\$50,000 and over) of the last several years to determine if other policies were in force and also to find the total amount on each life.
- e) Standard issues for less than \$50,000 which required reinsurance because of the presence of other policies in force, in order to determine the amount of issue and policy duration of the previous issues.

Then using various experimental retention limits, the odds that the mortality after reinsurance would exceed amounts such as \$200,000, \$500,000, \$750,000, and \$1,000,000 were calculated. The method we used is the same as outlined by Rosenthal in *RAIA XXXVI*.

We then considered the surplus position of our company along with the strength of our regular reserve basis, the existence of special reserves, and also the probability of various losses in excess of the expected mortality.

The possible effects of other types of mortality variations such as secular, catastrophic and cyclical were studied for each of the various levels of limits chosen.

Further consideration was given to the reduction in the limits of retention at the very young and at the older ages. It was our feeling that some reduction in limits was in order because of:

- a) greater uncertainty of classification
- b) possibility of increased selection against the company
- c) less revealing medical examinations
- d) more impairments in older persons
- e) difficulty in appraising effects of minor impairments
- f) more borderline and doubtful cases
- g) less insurable interest and more speculative hazard with advancing age.

For substandard mortality classifications of over 50% extra mortality we made further reductions in the limits of retention because of the greater uncertainty of risk classification rather than any greater possibility of chance variation.

We examined the limits of retention of companies similar in size to ourselves.

After tentatively setting the limits of retention we made a further study as to the effect on the reinsurance we would cede. We wanted to be sure that the number and amount of reinsurance to be ceded would be an adequate volume, not excess, and that our reinsurers would continue to participate our account fully.

Some additional consideration was given to the experience of and competence in the field underwriters and secondly to the experience of and competence in the home office underwriters.

After having given adequate consideration to all of the foregoing points we adopted new limits of retention.

MR. JOHN C. WOODY: We at the North American Reassurance Company feel that in practice most companies have retention limits which are appreciably lower than the limits which would otherwise be set by theoretical consideration. One important reason for this is to take the pressure off of the underwriting department. If the underwriter must make a final decision on cases which he may feel will affect the company's solvency, he is likely to adopt an extremely conservative position and one which will cause agency friction. The point is that the retention should be set at an amount which not only enables the principal company underwriting department to feel comfortable, but also allows that company to make a profit out of the retained business.

It might be pointed out that the occasion for setting a retention

limit occurs only once in any company's history; thereafter the question is rather one of changing retention limits. Probably the first suggestion that retention limits should be re-examined comes from the observation that the reinsured portion of new business is becoming quite sizable. It is then necessary to investigate the balance between retained and reinsured business and determine how this balance would be affected by various changes in the retention limit. In some cases the problem can be solved by increasing the overretention, that is, the amount in addition to the published retention that the company retains in order to avoid reinsurance of small amounts.

There is a tendency to set a lower retention for Group life insurance than for Ordinary. This is probably due to a desire to move cautiously in a newer field. However, it could also be due to the nature of the risk, which in many cases is level on Group and decreasing on Ordinary. Further, in the case of contributory Group, there is a chance of greater anti-selection on renewals.

However, since most Group reinsurance is on a quota share basis so that even small certificates are reinsured in part, there is a strong incentive to avoid very low retention limits which would have the effect of reinsuring the greater part of any group with a high maximum.

A lower retention is indicated for Accident and Health principal sum benefits than for regular life insurance, largely because of a low premium volume and a high probability of fluctuation. Considerations on this business are much the same as for life double indemnity.

For hospital and surgical benefits, because the claim amounts are small, reinsurance isn't usually needed. On major medical where the maximum is not higher than \$10,000 and there is a reasonable volume of business, the chances of a maximum claim are small enough so that again reinsurance is probably unnecessary.

In the area of loss of time benefits I would suggest much the same retention as for income disability, which might be made to correspond with the ordinary retention. On this business a claim may require setting up a substantial liability if there is a long maximum indemnity period and a high monthly amount.

On the guaranteed purchase option the single premium basis may be a bit expensive if a company finds itself reinsuring a large portion of that option. The coinsurance approach is, however, cumbersome and the administrative expense is quite high.

In connection with the fifth dividend option, if the one year term insurance is nonexistent in the early years because there are no dividends paid, or if the dividend is less than sufficient to purchase insurance for

the cash value, it is possible to modify the cession of reinsurance so as to have a smaller amount of reinsurance in the earlier years and later bring it up to a level amount for as long as the dividend is sufficient to purchase insurance for the cash value.

Where coinsurance is the normal method of reinsurance these riders may be coinsured on much the same terms as the basic policy and, if the volume is sufficient, it may be possible to schedule the reinsurance once a year by attained age and handle the premium payments and reserve valuations on a bulk basis.

I should like to mention some special considerations which would apply to a particular company's operations.

A company which reinsures on a coinsurance or modified coinsurance basis and which is mindful of the strain on surplus arising from writing new business may well elect a lower retention than it otherwise would, simply to protect surplus.

A company which wants to offer a new type of coverage which may be regarded as experimental may well be advised to set a lower retention limit until enough experience has been built up in that field to enable that company to take its usual retention.

MR. CHARLES D. SILLETTO: In regard to section B, we at the Lincoln National Life, by reason of newer electronic equipment, have seen a reversal in methods concerning the valuation procedure of reserves on Ordinary business from an attained age method to in many instances a seriatim method. The latter method actually holds advantages on some of the newer electronic equipment. In reinsurance, with the use of this equipment, we find it easier to do things exactly and completely rather than try to make approximations.

In respect to the advantages and disadvantages of reinsuring on a participating or nonparticipating basis, we feel that each company must consider its individual needs. It is the age-old story of a possible lower net cost on a nonguaranteed basis as opposed to a guaranteed net cost on a nonparticipating basis. Certainly surplus stabilization is one of the reasons for even considering reinsurance. A particular company must evaluate the relation between the cost differential and surplus stabilization and choose either one or the other or a mixture of both participating and nonparticipating.

MR. MELVIN L. GOLD: In my experience I sometimes find myself urging management to increase their retention faster than is their desire. I point out that reinsurance does cost money, but management, particularly of the small company, is sometimes burdened with the memory of a death claim which occurred just after a policy issue.

I might mention one situation where the company decreased its retention. They were reinsuring on the yearly renewable term basis and developed very high deficiency reserves. By shifting to coinsurance and halving retentions the deficiency reserves were to some extent passed on to the reinsurance company.

MR. GARNETT E. CANNON: In the Standard Insurance Company we feel that we are going through the motions of writing reinsurance on a multitude of cases and yet are really looking for a protection against the total loss experience.

I have been waiting for the reinsurance companies to develop a plan whereby we would pay a percentage of the exposure to risk. Then in the year that our total experience is above what we expect we would receive reinsurance; however, if it were below we would receive nothing. In other words we would need no recovery from a reinsurance company if we had a good claim experience, regardless of a heavy loss on one claim or another. Conversely, if we had a poor experience, even though it were made up of a large number of small claims, for the stability of the surplus we would need some recovery from a reinsurance company.

MR. GRAHAM C. THOMPSON: We have spoken of the fifth dividend option and I would like to point out that in the Security Mutual Life we have had this option for some 20 or 30 years and refer to it as the sixth dividend option.