

**TRANSACTIONS OF SOCIETY OF ACTUARIES
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**DIGEST OF DISCUSSION OF SUBJECTS OF SPECIAL
INTEREST—DALLAS REGIONAL MEETING**

ORDINARY INSURANCE PREMIUMS

Premiums

- A. To what extent are current reductions in whole life and term insurance nonparticipating premium rates attributable to the prospect of:
- (i) More favorable mortality,
 - (ii) Reduction of expenses,
 - (iii) Higher interest earnings,
 - (iv) Reduction of company's profit margin?
- What is the effect of the 1959 Federal Income Tax Act?
- B. Are graded premium scales proving satisfactory? In what ways may increases in expense rates be distributed among the various bands? Are the variations by size of policy proving satisfactory in practice? What minimum amounts of insurance are being established? Of what significance are recent extensions of nonmedical limits and underwriting practices?
- C. What assumptions need be made in asset share calculations with respect to the Federal Income Tax? What level and pattern of taxes will these assumptions produce?

MR. CHARLES H. CONNOLLY: In the fall of last year the Southwestern Life brought out a new ratebook which reflected a change in viewpoint toward several factors. I think a review of the assumptions used would be the best way of describing the effect of the various changes on the rates.

First of all, let me say that we had available for calculation purposes an IBM 650 which proved invaluable in making the studies preliminary to the preparation of a rate basis. With it we were able to obtain many figures we could only have hoped for in the past. It also made possible a variation in assumptions which we utilized rather fully.

For example, let us take mortality. We felt it proper to take a mortality level of the fairly recent past and project a conservative improvement in mortality into the future. Therefore, our mortality rates varied not only by age, but also by calendar year.

We did a similar thing in connection with expenses. Our own experience has been that expenses have been going up for a considerable number of years. Therefore, in our calculations we assumed a continuing increase of 1% a year in expenses.

Our assumed interest rate also varied by year. We used a relatively high rate for the current year, reducing rather rapidly and then smoothing to a slower rate of reduction in later years, reaching a level of around $2\frac{1}{2}\%$ after some 30 or 40 years.

The thing that took the whipping, after all of these other changes, seemed to be the company's profit margin. We ended up with the conclusion that we have to assume smaller profit margins than in the past.

With regard to the 1959 Federal Income Tax Act, we reflected the full effect of Phase 1 in our interest assumptions. We felt that we could control the inroads on profits pretty well in any Phase 2 area and therefore left the Phase 2 tax out of our considerations.

MR. ORLO L. KARSTEN, JR.: My company, the Great American Reserve Insurance Company, had the age-old complaint of noncompetitive large policies, and so we came out with a special policy. In calculating gross premiums, we used the approach described by Mr. Anderson in his recent paper published in the *Transactions*. This approach allows you to put in directly your profit requirements and your requirement for yield on risk capital.

We first used a set of standard assumptions and came up with one level of gross premiums. Then we altered the commission, mortality and withdrawal rates. However, it came down to the point that it was company profit margin and the yield on risk capital which were the final levers to give us competitive rates.

One interesting fact about Mr. Anderson's method is that by simply putting in per policy and per thousand expenses, the bands or policy fee emerge automatically in the final gross premiums. Under this approach you are not attempting to fit your own company's experience into the band or fee system of another company. Instead, your own results pretty much indicate whether your company should have a band or fee system.

MR. WALTER W. STEFFEN: The Lincoln National has recently announced reductions in premium rates for certain nonparticipating level-amount term policies and riders. This action was not dictated by more favorable mortality, inasmuch as we have experienced no substantial mortality improvement since the last revision of mortality assumptions in premium rates in 1957. Interest earnings have improved but are not an important factor in term rates, and the reductions were certainly not a result of any reduction in expenses.

We are contemplating a somewhat lower margin for surplus and contingencies at the younger ages on short term plans where the premium rate is small. However, the principal factors permitting the reduction were:

- (1) Withdrawal of the Five Year Convertible Term policy at ages under 55 where the heavy annual amount needed to amortize first year expenses had artificially kept our premium rates at a redundant level not only for this plan but, in order to keep the premium scales consistent, for some of the longer term coverages.
- (2) A management decision to establish the necessary deficiency reserves at the older ages where our calculations indicated that a gross premium less than the valuation net premium would be adequate.

The new tax formula produces an appreciable tax on term policies as compared with the negligible amount under the old formula. This is especially true if the rates contain provision for conversion costs, since no corresponding reserve can be taken into account in the tax computations. On this latter point, however, we will at least get tax credit later when the expected excess mortality provided for in the conversion costs finally does occur.*

MR. RICHARD M. FRIDLEY: One of the amazing things about actuaries is that they can rationalize any basis to fit the needs of their company. However, we look at the Federal Income Tax a little bit differently. For a mutual company the size of the Pan-American Life it appears that the optimum point to be for taxation is on the net investment income basis less \$250,000.

We look at it this way—that there is little we can do about our taxes from the investment standpoint, since we are going to earn as much money as we possibly can. If, for the moment, we throw out certain things such as small company deductions and reserve revaluations, we then get down to the point where Phase 1 is really a tax on investment earnings on surplus. This being the case, this tax should not be shifted over to the policyholder at all unless it is felt that this is truly his money. Therefore, it seems to me that premiums could be calculated without regard to the income tax on earnings on surplus. In such case it would be necessary that a little excess money be contributed to surplus so that the ratio of surplus to assets would stay in balance.

MR. JAMES R. GILLAN: It is my impression that graded premium scales have been satisfactory in practice and in their acceptance by the public, the industry and the authorities. The Pan-American Life has used the band system in the United States for more than three years, and a year and a half ago we introduced such a system in all of the Latin American countries in which we do business. We experienced, surprisingly and

* With regard to the effect of the 1959 Federal Income Tax Act, Mr. Steffen reviewed a discussion presented by Mr. Henry F. Rood at the New York regional meeting on section B of the *Interest* topic (see pp. D62-D64).

happily, little difficulty in obtaining approval of the new rates by the various Latin American Superintendencies. Quantity discounts also received enthusiastic acceptance by our field men.

I believe that part of the success of graded premium scales has been due to the responsible and equitable manner with which they have been handled, so that some possible difficulties were avoided. For example, those companies using a fee system have devised ways to quote a base rate times the amount of insurance and then subtract a discount for each unit above a minimum amount, rather than use a lower base rate and add the policy fee. Furthermore, the fees and discounts being used by the industry, although they naturally vary by company, appear to be based on reasonable allocations of per policy expense. It could have happened that biased allocations would be made in order to give excessive discounts so as to favor large policies unduly.

With respect to expenses, any increase will require an increase in base rates, a revision of discounts, or both. An increase in percentage expenses alone will require an increase in base rates and a level percentage increase in the band discounts. An increase in per policy expense, either acquisition or overhead, will require an increase in base rates and an increase in each discount equal to the increase in expense times the difference of the reciprocals of the assumed average size policy in successive bands. An increase in expenses by amount of insurance would not influence the discounts but would require revising the base rates.

If it is considered that individual bands have unique characteristics with respect to expense, then in theory expense allocations can be made by band, and appropriate discounts determined. A more practical way of accounting for special characteristics might be to assume artificially adjusted average sizes. For example, to account for the higher acquisition and underwriting costs of large policies the quantity discount for the last band might be based on an average size for this band which is lower than that which will actually be experienced. Satisfaction with the variations by size of policy is probably in direct proportion to the accuracy with which the average size policy being experienced was estimated at the time the rates and discounts were determined.

Companies using policy fees will have a natural rate change by size which should be satisfactory provided the fee is based on a reasonable and adequate allocation of per policy expense. These companies may be less concerned with average size policies. Where a band system is used, appropriate rate variations are a function of the average size policy in each band. Where the experience average falls below that anticipated in determining discounts, then the system may be considered to be un-

satisfactory to that extent. It has been my observation that the average size in the highest band is generally very good and therefore satisfactory, but that for other bands the average is uncomfortably near the minimum. Of course, skewed averages were anticipated but sometimes not to the degree being experienced. It is almost impossible to have an adequate but practical premium for the lowest band unless the band is unusually wide or a higher minimum than \$1,000 is established. Thus, it is not uncommon now to find a minimum of from \$2,000 to \$3,000 in the first band, with a limited special series of policies made available for amounts below that minimum. The grading by fee system may not begin until the amounts exceed \$5,000, with a special series of policies not subject to grading available for smaller amounts.

Increased nonmedical limits and liberalized underwriting practices presumably make it easier to obtain new business at lower costs at the expense of increased mortality. It is doubtful that the savings and the extra mortality are offsetting, because of the high limits and the current competitive nature of underwriting practices. To the extent that these changes affect per policy expense they indicate a revision of discounts. To the extent that the savings and costs are not offsetting they indicate a revision of base rates. However, any theoretical revisions which are indicated may be small or they may be absorbed by optimism with respect to future mortality improvement and investment margins.

The actuaries and underwriters of some companies who increased their nonmedical limits may have experienced some interruption to their normal business tranquillity when they found that the minimum for their super-preferred risk plan now fell within the new limits and that the field men couldn't understand why they were not allowed to submit super-preferred nonmedical applications. The alternative solutions to this dilemma are not altogether easy. The plan can be continued on a strict medical basis, revised to a nonmedical basis, or withdrawn, all of which will interrupt the agents' normal business tranquillity.

MR. BERT A. WINTER: The 1959 Act's limitation on deductible dividends to policyholders has operated, for the Prudential, to produce a Phase 2 tax base \$250,000 less than the net investment income taxable under Phase 1 in each of the three years to which the 1959 Act has applied. This will probably continue to be the case in most future years. In these circumstances, the asset share method of treating Federal Income Tax as a reduction of net investment income continues to be appropriate for us. We have not had to consider what methods we would use if we normally had a positive taxable gain from operations.

MR. WILLIAM K. NICOL: Commonwealth Life, a nonparticipating company, introduced premiums graded by size for regular monthly and monthly debit Ordinary business January 1, 1959. At that time there was also a complete revision of our ratebook with respect to plans, premiums and values. The band method of grading premiums by size was used with four bands: \$1,000-\$4,999, \$5,000-\$9,999, \$10,000-\$24,999, and \$25,000 up.

Prior to the introduction of premiums graded by size, the company had used a number of plans with minimum amounts of \$5,000, \$10,000 and \$25,000, and these higher minimum amount plans had been quite successful. An analysis of the business written in 1959 and 1960 indicates that there has not been a significant change in the distribution of issues by policy size classification. There is some indication of a decrease in business in the band \$10,000-\$24,999 where we previously had four very popular plans with a \$10,000 minimum. There is also some indication of a slight increase in business in the band from \$25,000 up where we previously had only a whole life plan with a \$25,000 minimum. However, it is very difficult to isolate the effect of a substantial ratebook revision from the effect of the introduction of premiums graded by size. We have noticed a substantial increase in the use of decreasing term riders, but this again may be attributable to ratebook revision and over-all industry patterns rather than to the introduction of premiums graded by size.

It may be said that there has been an excellent reception by agents of premiums graded by size. There are definite indications of more sales on endowment forms where previously there had been no policy form with a minimum of more than \$1,000. There have been no practical difficulties in connection with premiums graded by size except in the case of deficiency reserves where each separate band has created a different valuation classification.

Annual expense studies are being made to determine acquisition and maintenance expenses on per policy, per thousand, and percentage of premium bases. To date, the level of expense rates and the distribution of business by policy size have not changed sufficiently to warrant any revision of band differentials. Any subsequent ratebook revision may, of course, call for changes in band differentials, but experience to date has indicated that these will be minor in nature. It is, however, much more necessary than was formerly the case to examine each year the expense rates and the distribution of business by policy size.

MR. RALPH H. GOEBEL: The Northwestern National Life uses the policy fee method. We have a \$9.00 fee which we adopted in connection

with our 1958 ratebook. We used this on policies over \$2,500, and then had the problem of what to do in connection with policies under \$2,500. We would naturally like to cut out these small policies, but in our particular market we cannot do this. We therefore decided to establish a special series of policies of simplified form. We took out the settlement options, paid-up dividend addition option, and reduced paid-up nonforfeiture option. We also sold these policies for \$.50 a thousand more than for policies at the \$2,500 level. In other words, the rate per thousand for \$2,500 policies was the base rate plus \$9.00 divided by 2.5, which would be \$3.60. For policies under \$2,500 the rate per thousand was the same base rate plus \$4.10.

We later found that we were still selling as many \$1,000 policies as ever. Since this still involved quite a bit of subsidy, we went to our agency people and asked them if we could do something about this. They told us we should tack something onto the rate but, by all means, to let them still have their \$1,000 policy. As a result we added \$1.50 onto the rate per thousand for \$1,000 policies and \$.50 onto the rate per thousand for \$1,500 policies.

MR. FRED G. LETWIN: The American United Life adopted graded premiums in September 1959, using the policy fee method. We use an \$8.00 fee. The minimum policy is \$2,000. However, since we did not want to leave out \$1,000 policies altogether, we have one policy available at the \$1,000 level. For this policy we do not use a policy fee but add \$6.00 to the rate per thousand.

We have found that our policy fee system presents competitive problems at the points where the band system drops the premium. This is most noticeable at the \$10,000 level. Where the competitive company has a band from \$10,000 to \$25,000, our fee system gives us the advantage for a \$20,000 policy. However, with a \$10,000 policy we lose the advantage. The only problem is that more sales are made at \$10,000 than at \$20,000.

Another problem we have is in the preparation of sales illustration material from the home office. This problem results from the fact that the premium varies with each thousand and, therefore, one presentation cannot be fractioned out for other amounts. We have tried to solve this by giving the agent three different presentations in a manual. However, before coming down here I spoke with one of our managers, and he said that this is still a problem even with the three samples we give them.

The other problem has to do with twisting. We find that the gradation of premiums has made this a bigger problem than it was before. When a

salesman calls on a young client and sells him a \$5,000 policy and then comes back two years later and sells him another \$5,000, the policyholder is wide open for somebody to come in two months later and show him the advantages of a \$10,000 policy.

Outside of these few areas, we find that gradation of premiums has worked out very well. We have no home office problems. We think graded premiums have been successful and, even though we do have our problems, we still feel that we made the right choice in using a fee system.

MR. WILLIAM O. BURNS: Instead of going to a fee or band system, the State Farm Life kept the gross premium the same but graded the dividends on all policies over \$5,000. This is actually a type of fee adjustment. I have a question as to what those companies which have a policy fee system will do if it is decided in the next ratebook that the amount of the fee should be changed. In such case, will an adjustment be made in the dividend scale? I would hate to see the day when we have both graded premiums and graded dividends. However, I have not heard anybody mention how else equity can be maintained under a fee system if a change is made in the amount of the policy fee.

MR. MENO T. LAKE: The Occidental uses a policy fee of \$10.00. This has had a very noticeable effect on our average-sized policy, which has gone up in the three years that we have had the fee from about \$11,000 to slightly over \$15,000. Undoubtedly this is largely due to the fee.

We were worried about the effect of the fee system on small policies. We felt that all policies had to stand on their own feet and so adopted a \$2,000 minimum which, of course, gives a \$5.00 per thousand fee. Surprisingly enough, the fee system has not resulted in any decrease in our sale of small policies on adults. It has, however, hurt us quite considerably on juvenile business. As a result, in our new ratebook we are giving serious thought to subsidizing juvenile business. We are considering doing this by adopting some graded fee such as possibly \$4.00 a thousand on the first \$2,500, for juvenile business only.

Being a stock company with reasonably competitive premiums, we have run into a real deficiency reserve problem on large policies. I think that this year it will cost us between \$5,000,000 and \$6,000,000 for deficiency reserves. The policy fee system has aggravated this problem very greatly because, when you get up to a \$100,000 policy, your premium is down pretty low.

As to what minimum amounts of insurance are being established, we have set a \$2,000 minimum on our nonparticipating permanent plans and a \$5,000 minimum on all term plans. This has been very satisfactory to our agents.

The only other problem we ran into was in allocating the expenses between plans of insurance where there is a substantial difference in average size. We decided, in advance, that the fee was going to be \$10.00 per policy, whether for a term policy with an average size of \$20,000 or for an endowment policy with an average size of \$2,500. We feel that it would probably have been easier to have a fee that varied by plan. However, this would be entirely impractical from the field standpoint.

MR. ROBERT P. BRADY: In 1953 my company, the Republic National Life, came out with a \$25,000 nonmedical limit which was offered only to selected agents. We later offered it to all of our agents and even to brokers. Recently we increased this limit to \$30,000 up to age 35. One of the aims of our company in increasing the nonmedical limit was to increase the average sized policy. We think we have been successful to some extent in this field, especially since we have had so few claims on our nonmedical business at the higher amounts. However, we cannot at this point give any statistical significance to a comparison of our medical and nonmedical mortality.

MR. CHARLES H. BARNABY: I am going to discuss the Federal Income Tax from the point of view of a nonparticipating stock company. One assumption I am going to make is that the company is paying a Phase 2 tax. I feel that a stock company, even if it is currently in a Phase 1 only tax condition, must eventually pay a Phase 2 tax if it is making a profit.

Now, suppose the company is going to come out with a brand new line of policies and thus plans to take a new look at the Federal Income Tax. One method which could be used in assessing the tax would be to take the taxes paid recently and then express them as a percentage of premium or percentage of net investment income. However, I do not think this method is any good. Under this approach, the taxes assessed in current premiums might not reflect the taxes which would be charged in the future, certainly not the incidence of the taxes. For instance, if there is a block of older, more profitable, business on the books and the company is coming out with a new, more competitive, line, then the taxes being paid now are probably at a higher level than the taxes which will be paid in the future.

Another objection to this method is that a lot of companies right now are in a time of special taxation. For instance, a lot of companies have done some reserve revaluation to get Federal Income Tax advantages, and this has resulted in a ten year period of special deductions.

The final reason I do not favor this approach is that it does not take into account Phase 3. Inherent in the Phase 1 formula is a split of assets

into two parts—surplus and policyholders' funds. The Phase 1 tax is a full 52% of the interest on surplus and nothing on the rest of the interest earnings. This means any tax savings that can be made now will go into surplus and will earn interest which will be taxed at the 52% rate.

The effect of the tax law, taking into account Phases 1, 2 and 3 together, is a 52% tax on net gain from operations. All of the complications in the tax law amount only to a deferral of tax. It can be said, for instance, that Phase 2 is a 26% tax on net gain from operations, excluding gain from interest. Then there is another 26% deferred for Phase 3. Now then, suppose it is assumed the company will continue to grow in such a way that in 35 years it will come into a Phase 3 tax situation. This means that an extra 26% tax is being deferred in Phase 3 for 35 years.

Suppose this savings is placed in surplus and earns interest at a gross rate of 4%. Since the interest on surplus is going to be taxed at a 52% rate, this works out to a net interest rate of about 2%. As you know, it takes approximately 35 years for money to double at 2%. Therefore, the extra 26% which is going to be paid in 35 years is worth, right now, about 13%. This makes a total tax rate now, not of 26%, but of 39%. I think this is a significant difference which cannot be ignored.

An entirely different approach which could be used in assessing the tax is one that might be called the model company approach. Mr. Steffen referred to this type of approach in his discussion. Suppose, for example, we are considering what premium to charge for an ordinary life policy at age 35. Under this approach we would assume a large company in which this is the only type of policy issued. This is a safe approach because with it the tax can be assessed exactly as it is assessed in the tax law.

In the model company approach there are many ways in which Phase 3 can be taken into account. However, the most conservative way, the one which produces the highest premium for a given plan, is to assume that the tax is to be paid out of the policyholders' surplus account emerging for that *particular plan* starting at the time it first becomes positive. No other assumption will produce a higher gross premium.

I would suggest a possible third approach to assessing the Federal Income Tax. This approach is based on the following line of reasoning. Suppose, for purposes of simplicity, that you have in the past provided for a profit in your policies of \$1.00 a thousand per year. Now then, you know that in the future you are going to have to provide for more profit before tax to get the same profit after tax. However, you do not know how much more. You know it isn't going to be \$2.00, which it would be if you had to pay Phases 1, 2 and 3 right now. However, it

will be somewhere between \$1.00 and \$2.00. I suggest that for the average company it is somewhere between \$1.50 and \$1.75. Of course, the actual amount would vary between companies depending on how long taxes are deferred. In other words, to keep the same profit after tax as in the past it is necessary that profit margins before tax be increased by from 50% to 75%. Unfortunately, I believe you will find that if you try to get the same profit margins after tax as you have been getting in the past, you will not sell much business.