

**TRANSACTIONS OF SOCIETY OF ACTUARIES  
1961 VOL. 13 PT 2**

**DIGEST OF DISCUSSION OF SUBJECTS OF SPECIAL  
INTEREST—NEW YORK REGIONAL MEETING**

**ORDINARY INSURANCE PREMIUMS**

*Interest*

- A. As regards policies to be issued on the basis of the 1958 CSO Table, what considerations are involved in determining interest rates for:
- (i) Premiums,
  - (ii) Reserves?
- When deciding upon a reserve interest rate, what factors warrant consideration in connection with:
- (i) Nonforfeiture values,
  - (ii) Federal income tax?
- B. With the federal income tax law previously in effect, it was customary to treat the amount of the tax as a deduction from interest. With the new law, what changes have been deemed appropriate? How do these changes affect the various plans of insurance?

**MR. GLADSTONE MARSHALL:** In these remarks I assume that the federal income tax is treated as an investment expense. Also, my remarks apply primarily to participating insurance.

In approaching the problem presented by section A, I like to consider it as consisting of two parts. One is the effect of the interest rate on the items posed in the question; this I shall leave for discussion by subsequent speakers. The other, to which I will confine my remarks, is what leeway we have in the choice of interest rates, what rates we can expect to earn on new money for the many years these contracts will be in force, and how much of it we can safely guarantee.<sup>1</sup>

One approach might be to take a range of interest rates to be considered for premium and reserve computations and apply an increment to provide for (1) investment expenses and taxes, (2) asset losses and additions to surplus, and (3) a satisfactory interest factor in the dividend. The amount to be added for all three factors will vary by company and by individual judgment, but 2% might be an average figure which might include 1% for investment expenses (including federal income tax),  $\frac{1}{4}\%$  for contingencies and surplus, and  $\frac{3}{4}\%$  for the dividend interest factor. On this

<sup>1</sup> MR. HARPER, in discussing this subject, also emphasized the safety factor. MR. ALLAN emphasized safety as a consideration in regard to the adoption of 2 $\frac{1}{4}\%$  by most participating companies in 1948.

basis, if the premium and reserve rate to be used is, for example, 2.0% then you would have to gross 4%.

From statistics gathered for a representative group of companies, the average rate at which new money was invested in bonds, stocks and mortgages during 1960 was approximately 5.50%. I understand that the corresponding rate on new commitments today is between  $\frac{1}{4}\%$  and  $\frac{1}{2}\%$  less than it was a year ago.

The main job of the actuary is not to speculate as to what the interest rates may do in the future, but to suggest a basis on which his company will be able to operate safely and satisfactorily.

A review of past interest rates may be of some value. At least it will remind us that conditions were not always as good as they now appear to be.

The gross rates earned on the Connecticut Mutual's assets (new money rates were not readily available) were as follows:<sup>2</sup>

Period	Average Gross Rate
1920-1929. ....	5.40%
1930-1939. ....	4.63
1940-1949. ....	3.98
1950-1959. ....	4.25

The high point in this cycle was in the decade of the 1920's and the low point was in the decade of the 1940's, the differential being 1.42%. The average for the period was 4.56%, which closely corresponds, under our assumptions, with a 4.50% gross rate necessary to support a reserve rate of 2.5%.

The period in question may be considered abnormal because of wars, a major depression, and a period during which it was the policy of the government to keep interest rates at a low level. But even if we take one half the differential of 1.42% we get  $\frac{3}{4}\%$ , or if we take one quarter of the differential we get .35%, as an indication of the variation which may occur.

Admittedly all of this is very rough, but I am forced to conclude that if we used a rate for reserves in excess of  $2\frac{3}{4}\%$ , our investment department would at least have its work cut out for it. Of course, we could still operate on such a basis if future interest rates averaged less than 2% above the guaranteed rate, but it would not be the basis on which we should like to operate.

<sup>2</sup> MR. ALLAN, in his discussion, pointed out that some companies slipped below 3% not too many years back. MR. NOBACK also cited low earnings in the late 1940's in support of current adoption of  $2\frac{1}{2}\%$  as a safe rate.

In regard to the choice between  $2\frac{3}{4}\%$  and  $2\frac{1}{2}\%$ , we have been on a  $2\frac{1}{2}\%$  basis for the last 14 years and it has worked very satisfactorily indeed and continues to do so. Also, the adoption of the new table will in itself tend to produce smaller cash values. At present I cannot see the advantage of further aggravating that situation.

**MR. NORMAN HARPER:** The Fidelity Mutual is in the course of preparing a new policy series based on the 1958 CSO Table and has already arrived at answers to several basic questions. One consideration is the level of reserves produced. Since these are the bases for cash and other policy values and since the new table in many areas produces lower reserves on the same interest assumption, we do not want to consider a higher interest assumption than we are currently using and will, therefore, continue on a  $2\frac{1}{2}\%$  interest basis.<sup>3</sup> We will also be using continuous functions which will tend to increase the reserves on the new basis and thus reduce the differential. It is possible that the change in reserve level is of more importance to a company going on the new mortality table early than for a company going on the new mortality table later on, because of the importance of net cost illustrations in today's selling. It is our feeling that the impact of the federal income tax, while important, is a secondary consideration.

As respects the extended term insurance benefit, we made a test on a group of policies recently going into that classification and found that extended term insurance is not the important problem it used to be. Our own new issues almost always have an automatic premium loan request as part of the original policy application.

I might also mention that our Company will use age nearest birthday in the new policy series.

In regard to section B, since the mortality margin under the new table is reduced, we feel that a conservative position should be taken on expense assumptions. Certainly, the level of expenses and of taxes in the future can hardly be assumed less than the present level, and in fact, should probably be assumed to be greater.

It is our present belief that gross premiums should not be changed much from the present level. We do feel that some token reduction may be desirable, however, as a public reflection of the reduced mortality rates in recent years.

**MR. WILLIAM ALLAN:** The changing trends of mortality and interest are already reflected in today's participating insurance rates. Even though

\* MR. ALLAN also pointed out this consideration in regard to lower policy values and its effect on competition, outside investments and industry emphasis on sale of cash value life insurance.

an actuary's judgment may lean toward a higher future interest rate for net premiums, he will want to consider retaining the excess of the present over the new interest rate as a contingency margin in the gross premium scale.

The introduction of the 1958 CSO Table as a statutory standard is not in itself the reason for any across-the-board reduction in participating premium scales. The premium rate changes may be largely confined to adjustments for certain age groups and competitive realignment of rates within some plans of insurance.<sup>4</sup>

It is fairly clear that any increase in the policy value interest rate in association with the change over to the 1958 CSO Table would result in a flattening of the dividend scale. That would be an important management consideration.

Consideration may be given to a higher interest rate associated with a reduced or redistributed expense allowance provision or with related adjustments which are covered in the following comments on reserves. The selection of the reserve basis should not lose sight of the effects of the federal income tax law. For example, the advantages of a higher interest rate reserve computed on an immediate payment of claims or on a continuous basis should be weighed carefully against continuing, say, 2½% reserves on the "curtate" basis. In fact, in view of the generally lower level of policy values under the 1958 CSO Table, the introduction of the provision for immediate payment of claims may be considered irrespective of the interest rate finally decided upon for both reserves and policy values.

Similarly, companies not now providing for refund of premiums paid beyond the date of death may consider introduction of that feature in association with a step-up in the rate of interest. The introduction of that extra benefit must, of course, be compensated for by an increase in the net cost of insurance. Nevertheless, it would be logical to consider integrating that feature as a compensating factor for the otherwise lowering effect on net premiums and policy values.

MR. JOSEPH C. NOBACK: In my opinion, most companies will choose an interest rate in the range from 2½% to 3% for participating business; and I would expect that the 2½% rate will be the most popular. There are basically three reasons for using this lower rate, in addition to the safety factor based on history, maintenance of current cash value levels to the greatest extent possible, and a steeper dividend scale, all of which have already been discussed by previous speakers.

<sup>4</sup> MR. NOBACK concurred and added that improved earnings in the past decade have been reflected in dividend scales.

*1. Preserving the Status Quo on Gross Premiums*

In our Company the Insured Savings Plan proposal continues to be very popular with the policyholder electing to leave his dividends with the company. In other companies the fifth dividend option has become popular. Because of these sales techniques, I believe that management will be reluctant to make drastic changes in gross premium levels at this time. If the reserve interest rate were increased, it would be more difficult to maintain the current gross premium level.

I would expect some gross premiums to be modestly reduced, especially on limited payment life plans at the lower ages.

*2. Term Extension*

The periods of term extension under the 1958 CSO Table are rather long, and longer than many will want to grant. The higher cash values of a  $2\frac{1}{2}\%$  assumption will tend to aggravate the problem.

Of course, the solution to this problem is not in the reserve interest rate adopted. Rather, consideration should be given to using the 1958 CET Table.

*3. Federal Income Tax*

I believe that the Life Insurance Company Income Tax Act of 1959 will cause some companies to adopt a rate higher than  $2\frac{1}{2}\%$  for reserves.

If we assume that the current law will continue unchanged for several decades, and if we assume that mutual companies will be taxed under Phase 1, then a strong case can be made for the adoption of a high reserve interest rate, say, 3%.

Consider two companies each writing the same distribution of Ordinary insurance with each maintaining an 8% surplus ratio. One company has  $2\frac{1}{2}\%$  reserves and the other has 3% reserves; the  $2\frac{1}{2}\%$  company will hold larger assets than the 3% company. Under the 10 for 1 rule of Phase 1, I believe it can be shown that under these assumptions the  $2\frac{1}{2}\%$  company would tend to pay a higher tax. The additional tax would represent  $\frac{1}{10}$  of 1% of its assets. Of course, in terms of 20 year net payment and net cost illustrations, the tax differential is only 17¢ per \$1,000 for ordinary life issued at age 35. However, sometimes competitive cases are settled on smaller margins than that. Therefore before finally adopting a reserve interest rate, adequate consideration should be given to the impact of the federal income tax.<sup>5</sup>

\* MR. BLAIR agreed with this statement except that he expressed 20 year net cost savings as  $\frac{1}{2}\%$  of the 20 year average net cost on the ordinary life plan at most issue ages.

In conclusion, the basic elements of our business have become quite standardized, with the choice available to us quite limited. Today our mortality table is being fixed for us and our choice as to a rate of interest is rather limited. If companies do adopt more or less the same pattern, then, in the future, competition may not be determined by gross premiums or cash values. It will be measured more and more by the true earning power of the company. In short, each company's competitive position will be determined largely by its care in underwriting new risks, its efficiency of operation, and its own investment yields. This kind of competition is, of course, in the public's interest.

MR. B. FRANKLIN BLAIR: The facts as we at the Provident Mutual look at them are about the same as the facts that Mr. Harper and Mr. Noback mentioned, but the conclusions that I draw from those facts are slightly different.

I would like to comment briefly on the bearing which federal income tax might have on the decision as to the reserve interest rate for policies to be issued on the 1958 CSO Table.

In deciding whether to choose a comparatively high reserve interest rate in order to obtain the slight advantage arising from a higher earned rate *after* tax, it is advisable to give some thought to how long one expects the basic structure of the present tax law to last and also to give thought to what type of change seems most likely if and when the basic structure is changed.

Except in the newer companies, it will be many years before the reserves on the 1958 CSO policies represent a significant proportion of the total. The tax law in effect in the 1970's and the 1980's will be more important on this block of business than the tax law in effect in the 1960's.

It is conceivable that the law might be changed so as to eliminate the present differential in favor of high reserve interest rates, but it would seem more likely that any change would be in the direction of the bill passed by the House of Representatives. In that version, the advantage of using a high reserve interest rate was even greater than in the final form of the tax law, since the House bill provided that the interest deduction rate would be the mean of the current earnings rate and the company's own assumed rate.

It is very difficult to try to guess what the future holds in store, particularly in regard to taxes. However, in my personal opinion there are more likely to be tax advantages in a high reserve interest rate than in a low one. Moreover, the leverage in the tax law provides some protection against a fall in the interest rate.

MR. HENRY F. ROOD: In regard to section A, I think many of the nonparticipating companies will be using 3% interest for cash values. For premium rates, of course, they will be using a somewhat higher rate, although I don't think any of them would dare to go to the current earned rate for premiums. I would guess they might use an area somewhere around 4% before tax in the calculation of premium rates.

In regard to section B, prior to the Life Insurance Company Income Tax Act of 1959 the tax was based solely on investment income. Although many companies recognized that this was a tax for doing business and treated it as an insurance expense, nevertheless it was convenient to reduce the investment income by the amount of the tax and to use the resulting net earned rate of interest after tax for premium and dividend calculations. This had the effect of allocating the tax to each policy pretty much on the basis on which the policy contributed the taxable investment income.

The new law provides for a tax on underwriting operations, as well as on net investment income. It is necessary, therefore, to think through the basis of the new tax. There seem to be three different possible approaches:

1. It is a tax on net investment income. For many years it has been stated that the only true income of a mutual company is investment income and this should be the only basis for taxation. Mutual companies that pay only a Phase 1 tax could seem to make a good case for this concept.

I think most of the mutual companies that I have heard today—although they did not all say so—seem to indicate that they are talking about an interest rate after taxes. In other words, they are assuming that the tax is primarily on Phase 1 for them and that they can most conveniently use an after-tax rate.

2. It is a tax on net operating gains with a floor computed on the basis of net investment income. The purpose of the federal income tax is to tax all the net income of a person or corporation. Phase 1 may be said to be only a device to solve the perplexing problem of what sort of a limitation should be placed on policyholder dividends in order to levy an equitable tax on companies that issue participating business. For a stock company this seems to be a more reasonable approach than the first concept.
3. It is a tax of 26% on net investment income and 26% on net gain from operations, with the first item adjusted if the net gain from operations is less than net investment income. This is a compromise solution but it seems to be a reasonable one.

For a company paying a Phase 1 tax only there is considerable merit in following past procedures. This keeps net costs under old policies and new policies consistent and provides a relatively easy means of providing

for the tax. There is one difficulty, of course, in that high premium policies, such as short term endowments, will be taxed rather heavily, while term policies and riders with small reserves will provide little or no margin for taxes. This may have the effect of placing the company in a poor competitive position for the higher premium plans, while it should give such a company a distinct edge on term and other low cost policies. If this proves to be the case, the actuary may wish to select a different approach.

It must be remembered that the tax on investment income is no longer a uniform percentage (*i.e.*, 7.8%) of net investment income, as it was under the Mills law. The policy reserve requirements now depend on the valuation basis and the relative proportion of surplus to reserves. Theoretically, these factors may differ by plan of insurance, but it is doubtful that anyone will want to adjust interest rates this precisely. However, companies using the generation money theory and those with large pension plan reserves may feel it desirable to make appropriate allowances.

The company paying a Phase 2 tax, in addition to a Phase 1 tax, may well take a position that the entire tax is levied on the net gain from operations and that it should be assessed against each policy on the same basis. This is the general concept which we have adopted and it is a significant departure from our practice under the old law.

Carrying our thinking further, we have assumed that each group of policies issued on the same plan and in the same year should be assumed to bear the tax load which would be charged if that block of business constituted a separate company. We would, of course, make proper allowance for such items as the small company deduction, which would be important to a separate company with only that amount of business but which could be ignored in this situation.

We would assume that the incidence of tax against this block of business would be identical to that charged the company which issued such policies for one year and then ceased business but which had an unlimited loss carry-over. In other words, the net operating losses of the first year which produced a tax credit for the entire company would be carried forward until exhausted by future earnings. After that time, we would charge the appropriate taxes and record the amounts charged to the shareholders' surplus account and the policyholders' surplus account. In due time the policyholders' surplus account would reach the maximum amount permitted under Section 815(d) and would then be reduced as the reserves declined until ultimately the last policy terminated.

We have found this concept quite useful in computing asset shares, although it is necessary to carry some policies for long periods of time before a block is liquidated.

In practice, we are now computing premiums on the assumption that we desire a certain margin or risk charge each renewal year before taxes. This is consistent with the method which we have traditionally used, except that we now recognize that this margin must be larger if it is to approximate the amount previously obtained after taxes.

In making these assumptions we naturally assume that each block of business will be issued on a profitable basis so there will be net gains from operations, rather than net losses, except in the first policy year. Normally we provide for the amortization of the first year loss over the next 19 years of the policy's life and expect to produce a reasonable margin before taxes each year. Depending upon the incidence of a Phase 3 tax, we recognize that the margin after taxes will be not less than 48% nor more than 74% of the margin before taxes. This practical method of computing premiums is easy to handle and recognizes the fact that Phase 3 taxes may be long deferred because of the growth of the company. In other words, it recognizes that our theoretical concept is probably overly conservative but, at the same time, does not mislead us into thinking we have larger margins than may ultimately exist. It also recognizes that the deferment of taxes enables us to earn interest on the funds we are holding in the policyholders' surplus account.

MR. MELVIN L. GOLD: We have been advocating that the small stock company switching over to the new table base cash values on 3% or  $3\frac{1}{2}\%$ . The change to the new table, coupled with 3% or  $3\frac{1}{2}\%$  cash values and the elimination of deficiency reserves, produces a rather sharp decrease in gross premiums, which permits a favorable competitive position in regard to participating companies.

MR. GARNETT E. CANNON: At the Standard Insurance Company we did some experimenting with the interest rate with the idea of trying to recognize the comparative position of certain items such as pension trusts and interest paid on supplementary contracts and funds of that nature. If we are going to be competitive on pensions we have to provide purchasers of pensions the full advantage that is granted to them under the federal income tax law.

As we worked through these interest rates, we divided the various interest funds into four groups, namely, pension business, ordinary reserves, items subject to interest where interest was payable, and surplus. We found that for our company the interest rate was about  $4\frac{1}{2}\%$  on pension plan reserves, but was only 2.36% on the surplus. Accordingly,

if interest is to be allocated to the various funds, then to increase the surplus to an adequate level we must look to other sources, such as mortality, which under the 1958 CSO would be somewhat decreased, or possibly the expense rate.

For a company of our size, some \$300 million or more of Ordinary, we are inclined to favor a preliminary term type of valuation, but in order to provide competitively higher cash values we tend to favor a reserve basis such as the New Jersey standard, or possibly one that might well be devised in the future with full reserves at the end of ten years so as to provide even more federal income tax advantage than the New Jersey standard.