

**TRANSACTIONS OF SOCIETY OF ACTUARIES  
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D82      DISCUSSION OF SUBJECTS OF SPECIAL INTEREST

*General*

- A. In recent years companies have adopted various methods for grading premiums by size. In some instances cash values have also been graded by size. Policies with high early cash values have also been adopted. Have these various methods or plans proved satisfactory? Are further developments along these lines likely?
- B. Under present conditions, what are reasonable interest and mortality assumptions for retirement income policy maturity values and optional settlement rates guaranteed in new policies?

MR. HARRY WALKER: Beginning in January 1959, the Equitable's graded premium system consists of two broad classes, each with different premiums, dividends and cash values. The dividing line is at \$10,000. The under \$10,000 group is further divided into three subgroups (dividing lines at \$2,000 and \$5,000) with differentiation in premiums only.

The above method reflects not only the difference in expenses by size at the time that the system is adopted, but also enables any changes in expense rates with the passage of time to be reflected more equitably. As a matter of fact, for our 1961 dividend scale we reflected the higher increase in expenses for small policies.

As for the differentiation in cash values, tests of the accumulation funds showed that it was equitable to grant higher cash values in the \$10,000 and over class. This distinction is even more valid today, because of the greater impact of continually increasing expense rates on small policies. While grading of cash values increases administrative and other expenses, it does enable the company to pay reasonably high cash values for the larger size policies without an undue subsidy to withdrawing policyholders in the smaller size class. If we had granted the same high cash values to the latter policyholders, the ultimate cost would have been about \$1½ million annually.

MR. VICTOR E. HENNINGSEN: It has been suggested that the recent mortality improvement in the age group 60 to 70 will not carry over to the older ages. We question that suggestion and hence would not consider any mortality rates higher than those of the 1955 American Annuity Table,<sup>1</sup> especially in view of the concentrated medical research on the problems of the aged. This is particularly true for optional settlement rates, because many policies issued in the 1960's will not be settled for from 20 to 30 years.

In 1959 we introduced graded life income options which guaranteed a higher payment rate to a beneficiary of a given attained age for proceeds settled in the near future as compared to later settlement dates. Inciden-

<sup>1</sup> TSA VIII, 144-145.

tally, we use a 5-year setback for females. While we agree that other factors such as payee and nonpayee election are also of importance, the most important fact is that of improving mortality, and we feel the above method results in better equity.

An anticipated problem which we have had is the relation with existing policies which do not vary by year of settlement, *i.e.*, which have flat rates. For these policies, guarantees are lower in the immediate future than for our new policies, but higher for later dates. It is not possible to introduce a grading feature into these existing policies, since the effect would be of playing both ends against the middle.

Another problem is that since we enter our graded option table with an adjusted age (which is a function of the time from policy date to settlement date), the result may be different age adjustments for a single insured in case of multiple policies.

Also, as the concept is used in our retirement income and retirement annuity policies as well, there are resulting varying maturity values for given maturity ages depending upon the age of issue.

Inherent in our definition is the assumption that the life income guarantees will be changed every few years to keep up with anticipated mortality improvement. This requires policy revisions.

Reception from the field has been most satisfactory. Programming sales are based on what proceeds would do in event of immediate settlement. Of course, any subsequent settlement will always be at higher rates because of the increase in age, but the increase in payments would be slower than under the flat system.

An alternative definition for the age adjustment is described in *TSA IX*, page 71, though this requires annual changes of maturity values of retirement policies.

**MR. WILLIAM J. TAYLOR:** In determining the interest guarantee on settlement options or maturity values for retirement income policies, it is most important to look at long-term trends of interest, since settlement usually won't take place for 20 to 30 years.

Historically, we find that interest rates usually follow a cycle of about 50 years, down for about 30 and up for about 20. This means that when we are optimistic at the top of the cycle, and set a liberal guarantee, the options will be entered upon during the trough of the cycle, and vice versa. A good example is in the late 40's when most companies guaranteed as low as 2% on new issues at a time when the real problem was the liberal 3% and higher guarantees of old issues; the 2% policies are likely to mature in the future during a period of very favorable rates.

As an example I used the one hundred year record of interest rates

published in *Reporting on Governments* on May 23, 1953, which indicated a high of 6.52% in 1869 down to a low of 3.13% in 1899, to a high of 5.17% in 1920, and a new low of 2.44% in 1946.

The main question is what will happen in the future, especially under a managed economy. As for deciding on interest guarantees in settlement options, we should ignore current conditions as much as possible. My own choice at this time would be a rate of  $2\frac{1}{2}\%$ .

MR. CHRISTOPHER H. WAIN: A reasonable interest basis for settlement options when money is disbursed steadily is  $2\frac{3}{4}\%$ , while  $2\frac{1}{2}\%$  may be used when money is being held on deposit, as this involves a longer time. For nonpayee elections, the Annuity Table for 1949 rated down 2 years seems reasonable; at least one additional year's rating for retirement annuities is advisable.

The 1959 Committee Reports show continuing improvement in female mortality and an increase in male mortality for immediate annuities, suggesting the advisability of varying the age ratings by sex. We have so far recognized this only in our single premium annuity business. Another trend shown in this report is the sharp difference in mortality by payee and nonpayee elections, indicating it may yet be necessary to differentiate on this basis as well.