

**TRANSACTIONS OF SOCIETY OF ACTUARIES  
1960 VOL. 12 NO. 32**

**INTEREST CREDIT TO POLICYHOLDERS**

To what extent are companies reflecting investment timing in the crediting of interest to participating policyholders? What are the advantages and disadvantages of reflecting the present higher rate of interest at which new money can be invested?

MR. KENNETH K. KEENE explained that in late 1957 the Aetna shifted from the so-called "average" method of crediting interest for experience rating and dividend purposes under group annuity contracts to what might be termed the "new money" method. The principal effect of the method is to reflect investment timing to a great extent, with certain practical adjustments being made to facilitate its application. In the application of the new money method, the fund maintained under each group annuity contract representing the cumulative result of premiums plus interest minus benefit payments and expense charges is divided into separate parts. If the contract is eight or more years old, separate new money rates are applied to the respective increases in the fund for each of the past seven years. The new money rates are derived from the results on new investments during the respective calendar years and adjusted for investment expenses. The over-all rate on the older assets roughly represents the net yield on investments still outstanding which were made prior to the years for which the new money rates are applicable. For investments of a particular year, the new money rates are revised slightly from one year to the next to take account of changes due to re-investment of funds and to cover different investment expenses.

Under the Aetna system, interest rates applicable to ordinary contracts and to other group contracts are not affected by the new money method, *i.e.*, the average rate has been retained. For the group annuity operation alone, the total amount of interest which would have been allocated to that operation by the average method is redistributed to the group annuity contracts. Thus, there is no segregation of assets between lines and there is no discrimination. There is no loss of diversification under the method, nor is there any impairment in the safety of the invested assets since the full assets of the company back each and all of its contracts. The only departure from standard practice is to provide in effect that each group contract acquires its own interest history. Of course, as the contract becomes older the crediting rate tends to converge into an average rate.

Mr. Keene concluded that the new money method, coupled with a reduction in the tax discrimination against insured plans, has currently

improved the Aetna's competitive position against trustee funding and against those companies using the average method. Employers generally seem to view the method with enthusiasm and are now better able to evaluate the different funding approaches.

MR. WILLIAM M. RAE of the Bankers Life of Des Moines said that they had adopted what they call the "investment year interest" method for allocating interest among lines of business and within the group pension line to a group pension policyholder in the calculation of his dividend. This method takes into account the time when money is received from a class of policyholders and the actual earnings on that money and reflects such earnings to that class of policyholder. The method does not involve any segregation of assets and is clearly within the contribution theory of determining dividends. Mr. Rae felt that this method is more realistic and more equitable than the average rate method.

MR. EDWARD A. GREEN described the investment-generation method of the John Hancock in allocating the investment income of the group annuity line to the experience accounts of contracts within the line. These accounts are the basis for distribution of divisible surplus rather than a contractual arrangement under which investment income is credited directly to the contract holder. Since they are not using an investment-generation method of allocating total company investment income by major line at the present time, it is necessary to introduce an adjustment so that the total allocation *within* the line shall equal the total allocation *to* the line. The method used in allocating investment income within the group annuity line involves the following steps:

- (1) The gross rate on new long-term investments year by year is established and reduced to a net basis by deducting the investment expense rate.
- (2) Each year's original net new investment rate is then adjusted to reflect the reinvestment of such funds in each succeeding year at that year's new investment rate.
- (3) The initial year-by-year rates as adjusted are then applied to the current assets of the group annuity line, using the adjusted new investment rate for each year for the increase in assets for that year.
- (4) A ratio, determined by dividing the amount of investment income allocated to the group annuity line by the total amount produced by step (3), is applied to each of the rates determined in step (2). This makes allowance for short-term investments, variations in portfolio yields occurring after investment, and any scaling up or down to reproduce in aggregate the amount allocated to the line.
- (5) The rates of step (4) are applied to the current assets allocated to each contract, using the adjusted new investment rate for each year for the increase in assets for that year.

The advantages of the use of the investment-generation method fall into three major categories: maintaining greater equity between contract holders, meeting the competition of other investment media and improving over-all investment results. An analysis of the results of the use of the method indicates that substantially greater equity is being obtained through its use.

Mr. Green pointed out that although at present the John Hancock is not using the method in allocating investment income to lines of business, there is a great deal of merit from the standpoint of maintaining equity among policyholders in a method of allocating investment income which recognizes the yields available at the time the line's funds are invested and reinvested. If the method were used for all lines of business it might readily meet many of the arguments of the proponents of the "buy term insurance and invest the difference" concept.

The formulas in general use for allocating claim costs and expenses to the various lines and to classes of contracts within lines and by duration are more refined than is the Company average rate method of allocation of investment income. The dollar averaging principle inherent in the Company average method produces substantial equity for level premium, long term contracts which stay in force over a period of years. An adequately refined investment-generation method can produce the same degree of equity for this type of contract and at the same time protect the long-term policyholder from the investment antiselection which can be exercised under policies where the purchaser controls the incidence of premium payments.

MR. ROBERT F. LINK of the Equitable of New York stated that their practice in crediting interest for dividend purposes is to use a single rate derived from the results of the whole portfolio (*i.e.*, an aggregate approach), but that for some time consideration has been given to a system involving several different rates of interest for a given year of experience applied in accordance with when the funds involved were invested (*i.e.*, a select approach).

Some advantages of the select approach are:

- (1) It may favor the growth of the pension business.
- (2) The select approach protects other policyholders from the investment antiselection which can result from the aggregate system.
- (3) If payments into and out of a group annuity contract involve some of the investment and disinvestment hazards which are common to other investment media, cash withdrawal privileges might perhaps be offered with somewhat greater freedom but would be less attractive.
- (4) Its advocates will argue that it is more equitable than the aggregate approach.

The following are disadvantages of the select approach:

- (1) The internal record keeping will be somewhat more complex under the select approach than under the aggregate approach.
- (2) All methods so far suggested for determining rates under the select approach involve approximations which tend to be somewhat arbitrary, which opens the door to discussion of the merits of the method chosen.
- (3) The select approach may have repercussions on rates and reserves. There may be extreme cases where the select method will create or increase losses on certain policyholders.
- (4) Probably the greatest problem of all is how to apply the select system for the future and not disappoint some existing customers. A partial solution is to lump existing funds at the date of change into a single class for this purpose, thus avoiding a sudden drop in the rate of investment income credited. Also, if the penalty of failing to adopt the select approach is a drastic decline in group annuity business, it may be argued that existing groups have little to lose by the change to the select approach.