DISCUSSION BY W. JAMES MacGINNITIE

Mr. Bailey is to be congratulated for bringing this timely and important subject of underwriting profit from investments before the Society. He has succeeded in pointing out the many facets of this complex subject, and he has avoided many of the pitfalls that less sophisticated commentators have fallen into. He has, for example, distinguished between policyholder and stockholder funds, even in the case of mutuals. He has recognized the understatement of surplus, and also the fact that most cash needs are associated with policyholder funds.

There are, however, two problems that are associated with the author's method of analysis. The first is that allocation of the investment income of a given calendar year to the operations of that year fails to recognize that the underwriting decisions which gave rise to that investment income may have been made several years before. For some some purposes, the calendar year analysis may be acceptable, or even preferable. Furthermore, it is the way insurance companies keep their books and publish annual statements. But for evaluating the adequacy of rates, or the profitability of a book of business, it would seem more appropriate to use a discounted cash flow analysis.

Such an analysis would recognize the time value of money, and would be appropriate whether there had been a stable volume or not. This last problem was recognized by the author, when he stated that a rising volume may lead to an understatement of the underwriting profit from investments. Discounted cash flow also helps with the problem of how to treat capital gains, realized or unrealized. They are important only in determining the interest rate to be used, and a significant variation from one year to the next will not give widely differing results for the underwriting profit from investments.

The other problem associated with the author's analysis is his failure to distinguish between the kinds of investments made with policyholders' funds and those made with stockholders' funds. A quick perusal of several annual statements tends to substantiate the hypothesis that liabilities are kept in bonds, cash, and premium balances, while capital and surplus are kept in common stocks. There are individual company differences, to be sure, but they could well be based on varying interpretations of what constitutes true capital and surplus. The rates of return on these types of investments are significantly different, but the author allocated total investment income without regard for this distinction.

In a discounted cash flow analysis, the appropriate rate would be that obtained on reserves, with recognition of cash requirements and premium

balances. The question of appropriate rates of return is a difficult one, though, and it is complicated by tax considerations since many companies deliberately invest in tax-exempt securities. They thereby obtain a lower gross yield but a higher net than would be obtained from a taxable security.

The problems of determining underwriting profits from investments are complex and fascinating, and it will be some time before the methods of analysis appropriate to the various questions in this area have been fully worked out. Mr. Bailey, however, has made an excellent start.

DISCUSSION BY ALLAN L. MAYERSON

Bob Bailey's timely and thought-provoking paper is an important actuarial contribution to the perennial and occasionally emotional debate on whether, and to what extent, investment income should be included in ratemaking. Bob's paper is one of the few discussions of this topic to contribute more light than heat to the controversy.

It is obvious that insurers do earn investment income, not only from the funds contributed by their stockholders, but also from some part of the premiums paid by policyholders. If this were not so, many insurers would surely have withdrawn from certain lines of insurance which have caused persistent underwriting losses for more than a decade. A case can even be made that the solvency of some insurers has, in recent years, depended upon investment income and stock market capital gains.

It seems obvious that investment income is, as implied in Harold Curry's presidential address, taken into account in ratemaking. Whether it is explicitly or implicitly allowed for in the rating formula does not seem too important. The more important question, in my view, is whether the overall profit margin in the rates is adequate or excessive.

Most rating formulas contain an explicit loading for underwriting profit, often 5% or 6% of premiums. That these margins have seldom been realized is due to the actuaries' lack of success in predicting future losses accurately or, having predicted them, in convincing company management or state regulators to approve adequate rates. If actuaries ever become sufficiently expert in time-series analysis to predict loss trends correctly, or if our crystal balls begin to give us better answers, then the adequacy or inadequacy of the profit loading will become very important.

Many industries have a lower profit margin on sales than that built into