

stock and mutual life insurance companies are very much different and call for a completely different approach to tax planning.

- In Exhibit VI Mr. Beckman has compared the results with differing rates of yield on tax-exempt income. However, as a practical matter investment yield on tax-exempts tends to fluctuate in approximately parallel fashion to the investment yield on taxable securities so that these very sharp variations do not have to be dealt with very often.
- In commenting on tax-exempt investments, Mr. Beckman has concentrated his discussion on municipal bonds which are completely tax free. However, not to be overlooked as tax-sheltered investments are:
 1. sound stocks which over a period of years (and assuming that they can be liquidated at the capital gains rate) should yield a net after tax return in the 6-7% range, and
 2. real estate investments which due to the depreciation allowance can yield a net after tax return in the 7-8% range (perhaps more in an inflationary economy.)

Mr. Beckman's paper tackles head-on some of the tax ramifications of investment income and suggests some of the possibilities for improving net after tax results. Investment income has not been given the full consideration it deserves by the actuarial profession and it is to be hoped that others will continue to explore the multiple relationships that make up a sound program of investment planning. This is an area which holds promise for a significant professional contribution and, just as importantly, for a significant contribution toward improved company and industry profitability.

DISCUSSION BY J. W. MACGINNITIE

Mr. Beckman has done an excellent job of summarizing the impact of Federal Income Taxes on property/casualty insurance companies and the various factors that influence the total tax liability.

The major variable to which the paper is addressed is the relative amounts of taxable and tax-exempt investment income. In many companies this is the variable over which management has the greatest control and widest latitude of choice. For companies who have both the need and the resources, a more sophisticated approach to tax planning is possible.

Rather than confining the analysis to one variable at a time, several variables can be dealt with simultaneously. These variables would include:

1. Volume and profitability (on a statutory basis) of insurance.
2. Distribution of assets by class, especially tax-exempt bonds, taxable bonds, preferred stocks, and common stocks.
3. Yields by asset class, specified separately for interest, dividends, and capital gains.

It should be noted that there is an often overlooked cost of switching assets between classes (principally commissions) and that capital gains or losses often result when such switches are made. Also, tax loss carry-forwards and carrybacks earn interest at a zero rate which is considerably less than the firm's marginal opportunity cost.

It is then possible to introduce frequency distributions for each of the variables listed above and to use a simulation technique to evaluate alternative investment strategies. Additional sophistications can be introduced relating to management of realized capital gains and to a more detailed classification of assets. Investment strategies must also consider the trade-offs between risk and return, but tax implications must be taken into account. The decision as to whether to buy common stocks with low dividends and high potential appreciation should be tempered by the 30% capital gains rate as compared to a 7.2% tax rate on dividends from a high dividend, low potential appreciation stock. Also, dividends are reportable as ordinary income while capital gains are generally shown separately and only when they are realized.

Insurance companies who file consolidated returns with other parts of a holding company will find their problem of prediction and optimization even more complex. The prediction of profits in some non-insurance businesses is no easier than in property/casualty insurance, and there are likely to be significant differences between reported earnings and taxable earnings for reasons peculiar to each business. In many cases, however, taxable income from non-insurance businesses has less chance with being negative, or at least of being unpredictably negative and this gives the insurance planner more of a cushion when deciding to invest in tax-exempt securities.

A final point which should be mentioned is that the Internal Revenue Service evaluates reserve redundancy by statutory line of business. Returns

have been challenged where reserves of an individual line of business have developed redundancies in excess of 15% and deficiencies assessed. Those responsible for establishing reserves by line of business would do well to keep them within this tolerance.

DISCUSSION BY J. A. SCHEIBL

Much has been written in recent years on scientific approaches to management decision-making. Primary factors that have contributed to this surge of literature have been the increasing complexity of the type of decisions necessary in today's increasingly complex world and the development of the electronic computer providing the wherewithal for operations research. A key technique in the new methodology has been the simulation of decision problems through mathematical models.

The ultimate in modeling is the simulation of all operations of a business enterprise and the external forces that affect that enterprise. Through the examination of all likely results from a range of all possible decisions, and, through the repetition of this process as these indicated results lead to more decisions, management teams have at their disposal the means to operate at a high level of efficiency.

Of course, the efficiency attainable by these means depends a great deal on the quality of the corporate model. The model must reflect the action, reaction and interaction of all pertinent factual and assumptive variables. This suggests that an early stage in the construction of a corporate model is to weed out relatively extraneous variables and to trace the actions of only those that are considered pertinent. Mr. Beckman has done a commendable job in demonstrating how this may be done preliminary to constructing the potentially complex income tax phase of a corporate model. He has conveniently and properly ignored many of the minute details of income tax calculations that would detract from his broad illustrations of the actions of the four variables he has chosen to examine. In so doing, he has undoubtedly perpetuated the usefulness of his paper. While, as the saying goes, "there is nothing as certain as death and taxes," we might add by the way of paraphrase, "there is nothing as uncertain as the manner of death or the manner of the tax structure."

The paper does not go into the reaction and interaction of dependent variables and, therefore, stops short of illustrating actual real-life applica-