Selection of the Optimum Asset Portfolio to Satisfy Cash Needs

Reviewed by Donald E. Trudeau

A major contribution to the success of an insurance company is the protection of its assets and hence net worth from the ravages of inflation. This protection is provided when there is good asset-liability management. There are many strategies which seek to optimize this protection. The author of this paper "Selection of the Optimum Asset Portfolio to Satisfy Cash Needs," has chosen to develop an approach to select efficient portfolios based upon a set of general criteria. The paper is very basic, but does aptly develop from the criteria a selection of net gains or relative protection of net worth indicies in Table 4. The author could have gone much further in the treatment of this subject. Since he did not choose to do so, this reviewer will offer a series of thoughts on the subject of inflation and how the actuary can assist in the asset-liability management function.

Any insurance company which has been in business for any length of time and which has a moderately balanced book of business between property and casualty has acquired an asset portfolio of sizable proportions. This portfolio should be efficiently structured in its maturity schedule, yield and types of securities to provide timely and sufficient cash to enable the company to meet its loss and expense demands. It is vitally important to know how efficient the asset portfolio actually is. The

asset portfolio is matched by a portfolio of loss and loss expense reserves and also a portfolio of unearned premium reserves. How will these reserves run-off, that is, what loss payment pattern (assuming the UPR is a surrogate for loss reserves) do the portfolios have and hence which efficient asset portfolio would we propose to meet the cash requirements of these loss payment patterns? The determination of this is relative to the criteria selected against which we can measure the level of protection afforded the assets of the company. However, in order to select which criteria are relevant, we must develop data which can aide in the evaluation process.

This data development phase is where the actuary can truly assist management. Incidental to the loss reserving process itself, the actuary has determined loss payment patterns. Let us at this time review some of the important elements which when brought together provide a scenario of alternative and/or complimentary sets of relevant criteria. The total loss reserve of the company can be arranged as a portfolio of discrete sets, for example:

Distribution first of the loss reserve by line of business between case and non-case

Within each set, a distribution by age and between first party claims and third party claims

Within each set, a distribution of claims between those which are for fixed or scheduled benefits and those where benefits are subjective or indeterminable

Within each set, a determination of claim settlement patterns, loss payment patterns and what, if any, reinsurance factors apply

Within each set, a determination if inflation is relevant and what inflation factor(s) apply

Within each set for loss reserves, what is the relative relationship of allocated loss expense reserves

From an arrangement of these sets and the distribution of data within them, we now develop short-term (12 calendar months or less) and long-term cash-flow models to represent expected loss payment patterns

Distribution of the unearned premium into earning periods. Determine which expected loss payment patterns developed above are appropriate

Relative to the unearned premium reserve, a determination if premium deficiency reserves are necessary and what current inflationary factors may be relevant

Now we can arrange the current loss, loss expense and unearned premium reserve portfolios in terms of a maturity schedule by calendar period going forward. We can also arrange the bond and stock asset portfolios in terms of their maturity schedule and match with the reserve portfolios. It is here where modern portfolio theories can come into play in the strategy of optimizing asset protection plans. These plans of course may or may not consider current income and loss, loss expense and unearned premium establishment depending upon whether or not the funding of current reserves will be kept separate from prior reserves.

The structure of the asset portfolios has a duality about it, it must provide for reserve run off and maximize rate or return with the protection of surplus being paramount in both instances.

There are other ancillary but important considerations in the development of total claim payments. For example, the sale and lease back of home office real estate to realize the enormous appreciation in value will create substantial cash for investment diversification; recognition of the potential for large claims payments for catastrophies and assumed reinsurance from pools of facilities.

This issue of inflation while important, is but one element to consider in the strategies of asset management. If the case strategy

to protect surplus is in place, this element, no matter how horrendous can be dealt with. I enjoyed the author's paper. While basic, it acted as a catalyst to my thinking and enabled me to comment as I have.