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IN DEFENSE OF ASSUMPTIONS AND METHODS

Lawrence Mitchell, FSA

In the U.S. in the late 1980's, the Internal Revenue Service (IRS) was taking steps to try to institute explicit boundaries for the actuarial assumptions being used in "funding" valuations to determine the appropriate contribution levels for small pension plans. Larry's article was written in the context of that environment, to defend – as the title suggests – the rights of actuaries to their professional judgement. The courts eventually supported this perspective.

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In a recent meeting, a number of attorneys were discussing the strategy they were going to use in defending their clients. At Issue was the deductibility of contributions to qualified defined benefit plans. During the discussion one of the lead attorneys made a comment which caused me to cringe, not just because he said it, but because others echoed it. His comment was "judges do not understand all this actuarial gobbledygook!"

These trials do not involve a narrow case of deductibility. Rather, you and I, as actuaries, are really the ones who are at risk. And we are being defended by people who do not understand what we do. That is scary.

His remark was made because. We have failed to properly explain what we do with all our complicated machinations. This paper provides another approach.

It will discuss:

- The need to distinguish between benefits and assumptions and between assumptions and funding methods;
- The difference between retirement from the labor force and retirement from the plan;
- The role of funding as it relates to the plan's ability to pay the benefits promised; and
- The fact there are ranges of assumptions which are reasonable, there is no single set of assumptions which is the only reasonable set, and to say "only one assumption is reasonable" is unreasonable.

Benefits, Assumptions and Methods

It is important to distinguish between the benefits a plan is going to provide to the employees and the estimates we (the actuaries) make in order to try to place a value upon these Items. Further, we should differentiate between

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the values of the benefits and the way the client contributes to the plan (the funding method).

An analogy could be made using a house as the benefit. Suppose the employer is going to give the employee a house: The appraiser determines the value of the house. The employer then has to determine how he will pay for it (funding method).

It can be in a variety of ways:

- Interest only, with a balloon payment at the end;
- immediate payment in full;
- a long term mortgage with payments based upon fixed interest and amortization of principal;
- a long term mortgage with a variable interest rate;
- a combination of mortgages; with or with out a down payment; etc.

To carry the analogy further, we return to the determination of the value of the house. The employer will fund for a house whose value will be determined by the fair market value on the date In the future when title will be given to the employee.

To get the analogy closer, the plan could provide the type of house will be determined by the reason the employee has left the plan, his service with the employer, his salary over the year, his marital status, the age at which he leaves, the age at which he wishes to receive the house and the length of time the employee can stay in the house.

Now the appraiser has to project factors which will determine the date the title will be given to the employee and the value of the house at that time. This estimate is made at the outset of the plan and annually thereafter until the last house has been given away. Each determination will take into account any new developments which the appraiser feels are relevant.

The result will be an annual appraisal of the value of the benefits which will be given In the future and an assessment of the difference between that amount and the value of any assets which have accumulated to provide that benefit.

There is an annual adjustment to or correcting of the estimates which had been made previously. The actual cost will not be known until all houses have been distributed and all other expenses related to the administration of the program have been paid.

By the way, a basic tenet of the actuarial profession is the knowledge that none of our assumptions will be met exactly. Rather, we expect our estimates to produce ultimate results which are approximate and which will be adjusted as we get closer and closer to the end result.

If, in the case of pension plan funding, our estimates develop contributions which are too low or too high during a period of time, the following calculations will adjust these .We are taught to "straddle" the target until we get closer and closer to the area of the “bull's-eye." If we hit the bull's-eye exactly, it is an unexpected coincidence.

Retirement Age

We must differentiate the way the term "retirement age" is used. In most labor statistics in the public domain, the term is used to designate a withdrawal from the labor force. In the context of a retirement plan, the term is used to describe the age at which an individual withdraws from the plan (as opposed to the labor force) in order to get his retirement benefit. For example most police retirement systems allow an individual to retire from the police department at a relatively young age. Usually, the individual who does retire goes to work elsewhere. He has retired from the plan (and the actuary has made assumptions which allowed the sponsor to fund for this), but he has not retired from the workforce.

The actuary looks at the plan and makes his best estimate of when each benefit is payable. In his summary of assumptions, he uses some shorthand notations which describe the process, and which is intended mainly to allow another actuary to develop values which approximate those of the original actuary.

When describing our assumptions, actuaries should have had the foresight to use a better term than the shorthand "retirement age." It is possible some confusion could have been avoided if we used "benefit expectation age for those benefits provided by the retirement benefit portion of the plan," or some such language.

Joseph and the Dreams

There is a story in the Bible about the dreams of a pharaoh and the interpretation of those dreams by Joseph. In effect, Joseph said the pharaoh should be concerned with putting away enough food in fat years so that the country can survive the lean years. So it is with the actuary. He has to protect the plan against the adversity of bad economic conditions and look well into the future (much more than the biblical fourteen). The actuary is aware there are cycles involving the economy and the ability of a plan to pay its promised benefits. If he were to use, for example, an investment yield which is based solely on the rates which were current at the date of valuation, he could lead the plan to ruin.

The reason for this is as follows:
When Interest rates are high, it usually means that the economy is doing well. This is a time when the plan sponsor normally can contribute money to the fund to provide for the future benefits. When Interest rates are low, it generally reflects a poor economy. At such a time, the plan sponsor usually can not contribute as much. However, using a high interest rate will produce a lower contribution, while a low Interest rate will produce a higher contribution. This is the exact opposite of sound funding for the protection of the participants and sponsor.

The actuary, however, is aware that investment yields fluctuate over a period of time. Further, the current investment yield does not reflect what it will be in the near or distant future, nor does it reflect what the reinvestment rates will be. Therefore, the actuary makes his best judgment as to the long range nature of investments in choosing the rate used for the determination of the plan's values.

Range of Assumptions

There is no single set of assumptions which can be called the only reasonable combination.
There is no single result of values of benefits which can be called the only reasonable value of benefits.

These two sentences are basic to the understanding of what is involved in determining a combination of assumptions which are reasonable in the aggregate. It means there are infinite variations of assumptions which in aggregate will produce a range of values which are reasonable, even though they are different. The law requires each actuary to use a combination which is that actuary's best estimate as to what is a reasonable combination. The law does not say the actuary must use a combination which anyone else says results in reasonable values. The law recognizes that the actuary is a professional and must use his best professional judgment in determining the values.

In today's world, there are respected economists who have widely diverging opinions as to the direction of the economy of this country. Decisions are made by others which depend upon the weight given to a particular economist's estimate of the future. Just because the results are different does not make the prediction an "unreasonable one."

So it is with the actuary. We have those who are extremely pessimistic concerning future economic events. Others are extremely optimistic about the same economic events. And, of course, there are many who tend to go between the two extremes. All such estimates fall within the range of "reasonable." Further, actuaries are taught to determine possible scenarios such that the actual events will have a high chance of occurring within the projections made by the actuary. Each of us then tends to add some conservatism within his estimates of reasonable values.

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