Divorce Pension Valuations

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2013

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Welcome to Zingle and Associates, Inc. Management Series, offering insights on a number of current topics. Additional information on our services and other subjects can be obtained through our web site. We would be pleased to received feedback from any of our readers. Feel free to contact us by mail, phone, or e-mail.

In big picture terms, defined benefit pensions can be valued for a number of purposes, including:

- For compliance with a variety of federal laws
- For compliance with PBGC premium submission
- For participant certificates
- For plan termination purposes
- For a projection, such as in anticipation of employer bankruptcy

Let me add another reason to value a benefit – the pending divorce of one of its participants. In this case, the individual's benefit is valued rather than the entire plan. What's more, the benefit is valued with an eye to factors outside of the plan rather than internal to the plan.

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1. CONVENTION

No two defined benefit pension plans are alike, but what they have in common is the stream of future payments promised to their participants. The ultimate use of the pension valuation will have a large influence on the method and assumptions used in determining its value..

Marital Property

That portion of a marriage earned during the marital years is considered a joint asset. Meaning marital property of both parties, to be divided during a divorce proceeding. Account value retirement plans like 401(k)s and IRAs have lump sum values readily available. For that reason they usually do not need an actuarial valuation. However, defined benefit plans are another story, and the subject of this paper.

Convention

The conventional actuarial approach is to determine the likely future payment stream, and then to discount each payment from its payment date to the valuation date. Determining a likely payment at some future date is not always straight forward. For example, it may be subject to adjustment based on the terms of the plan document, or subject to a cost of living adjustment based on the employer's historic pattern of increases. The discount process is a combination of interest rate and mortality table, both of which must be chosen from an array of possible choices.

2. POTENTIAL PROBLEMS

Life Expectancy

Some attorneys take a short cut by eliminating a true actuarial valuation. Instead, they use a quick approach based on life expectancy. A life expectancy is the statistical average age to which a person can be expected to live out of a large collection of people the same age. Half have died by that age, but this ignores the other half who die later. Fortunately, those are the farthest ones into the future, so the incremental value associated with them is relative low. But it is not zero. So a valuation based on life expectancy will be undervalued, everything else being equal.

On-Line Projection Systems

On-Line Projection Systems: Some larger employers make available an on-line calculator to plan participants. Unfortunately, they tend to be "use at your own risk". One common mistake is to assume pension service continues to retirement instead of being truncated at the point of divorce. Another common mistake is to take the value produced by the computer at face value, usually based on assumptions internal to the plan. Sometimes the computer even assumes pay increases will continue into the future. Valuations using total service rather than accrued service tend to overstate the value, and valuations using internal assumptions often turn out to be undervalued.

The more reliable systems contain the caveat that the values they show should not be used for determining marital assets.

3. STARTING POINT

To set up the valuation, we begin with items obtained from the parties, themselves, and from the plan administrator. Then we move on to selecting a method and assumptions reasonable for the facts and circumstances. Finally, we run the calculations and prepare the formal report.

Parties

Items identified by the parties

- Gender
- Date of birth
- Date of marriage
- Date of divorce
- Date of pension valuation.

Plan Administrator

Items supplied by the plan administrator

- Beginning date of participant benefit accrual under the plan
- Ending date of participant benefit accrual under the plan for divorce purposes
- Normal retirement date
- Early and late retirement optional dates (including benefit adjustments by the plan)
- Cost of living procedure
- Employee contribution history and balance (if applicable)

Actuary

Items determined by the actuary

- Methodology for pension valuation
- Discount rate(s) assumption
- Mortality rates assumption
- Other rates assumption (such as disability, if appropriate)
- Selection of retirement date
- Cost of living assumption
- Method for separating marital and non-marital portions, sometimes called the coverture fraction

4. CHOICE OF DISCOUNT RATE

Potential Problems

Perhaps the most important assumption is the discount assumption. Think of it as the reverse of an interest rate. A discount rate decreases the value of a payment from a future date to the valuation date. But at what rate? It is common for actuaries to select a single rate they consider reasonable. However, when pressed to describe how they arrived at it, they cannot offer a reasonable approach. How comfortable should you be with a result deemed reasonable when the method to derive it cannot be articulated in terms of reasonableness?

For example, consider a simple 4%, 5%, or 6% assumption for a single $1,000 payment discounted over 20, 30, or 40 years. The results are shown in the chart,

below. Over 20 years, a 1% difference in discount assumption makes a 17% difference in the result. Over 30 years, the difference in the result is 25%, and over 40 years it is 32%.

	20 yr	30 yr	40 yr
4%	$456	$308	$208
5%	$377	$231	$142
6%	$312	$174	$97

Our Approach

Our approach is to measure the historic risk-free yields on US treasury bonds, and then to assume that in the future such rates will move from the present rate to the average of the historic rates. In this way, we assume the general shape of yields will be influenced by long economic cycles. This approach assumes a likely upward movement when current rates are low, and the opposite when current rates are high. This tends to eliminate the bias that future rates are likely to remain near the current level. It also is grounded in our starting point being the actual current rate as declared by the Federal Reserve Board of Governors.

5. CHOICE OF MORTALITY TABLE

Possible Problems

The choice of mortality table is more difficult than it may appear. Some tables have been built from underlying insured lives, some from annuitant lives, some from population numbers, and some from Social Security recipients. Some are sex-distinct while others are unisex. Some tables grade from one source to another at some "bend point" age. Some tables include the choice of future projection scales, while others do not. Some are based on group programs while others are based on individuals. So when a report indicates that "normal mortality" is assumed, just what does that mean? For a glimpse at a variety of published mortality tables, consult the web site of the Society of Actuaries, where nearly 200 historic tables are documented. With so many to choose from, it is important for the actuary to articulate why the assumed table is relevant for the valuation at hand.

Our Approach

Our approach is to use the Annuity 2000 Table for either males or females, as appropriate. Eventually we will migrate to a more current one as new tables are produced and come into common usage. We use this table because it is modern and is based on individual annuitant data. Furthermore, it is the table required by the state insurance departments for valuing current sales of retail annuities in payment status.

6. MARITAL VS. NON-MARITAL PORTIONS

Once you have a lump sum pension value, how do you determine the equitable portion attributable to the marriage? The conventional approach where we are located is proportionate, based on the percentage of time elapsed. This is calculated as (a) divided by (b), where (a) is the time elapsed between the dates

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of marriage and valuation, and (b) is the time elapsed between the dates of plan participation and valuation. The basis for this is the 1983 Minnesota Supreme Court case of Janssen v. Janssen, the same source for including both vested and nonvested portions in the calculation. Nevertheless, there might be room for an alternative where the pension's accrual formula is not proportionate.

7. CERTIFICATIONS

I once had a well-intentioned person ask why he couldn't simply determine a present value, himself, using his Texas Instrument calculator and a life expectancy. Actuarial valuations are a combination of method, assumptions, and professional discernment. In some cases they can be extraordinarily complex. For example, consider the following formula for a variety of deferred lifetime payout

$$\ddot{a}^{(12)}_{[x+\frac{1}{2}]+m/12:x+n-x-\frac{6+m}{12}\rceil} = \ddot{a}^{i}_{[x+\frac{1}{2}]+m/12:x+n-x-\frac{6+m}{12}\rceil} + k, \text{ where } k = \frac{1}{24}$$

It's just not something you can accomplish on a calculator!

Our opinions are prepared in compliance with Actuarial Standard of Practice No. 34 of the Actuarial Standards Board. Furthermore, they are certified by a member of the American Academy of Actuaries (as well as a Fellow of the Society of Actuaries and an Enrolled Actuary).

8. FOR FURTHER READING

To learn more about our divorce valuations, refer to our Practice Areas concerning Reports and QDROs.

We would be pleased to hear from you by contacting us as shown below.