

For actual PPA cost savings, look to new lump-sum calculations



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The real economic cost savings that defined-benefit (DB) pension plans will see under the Pension Protection Act of 2006 (PPA) come from a change in how plans will now calculate lump-sum distributions. Under the new rules, lump sums will no longer be more valuable than the alternative, the DB plan's annuity. By making these two options actuarially equivalent, the PPA is succeeding in plugging what had been a major drain on DB plan assets.

Before PPA, lump-sum payments contributed to sizable DB plan losses because the prior law unintentionally added a huge subsidy to the lump sum. This hurt the plan, the sponsor, and, by making the option overly attractive, ultimately the retiree. It was unfair, because paying lump-sum distributions was not what sponsors intended when plans were established. These losses artificially drove up DB plan costs considerably.

Much concern about the financial soundness of pensions has been rightfully attributed to the lump-sum payout. The lump sum's tarnished reputation came largely from the fact that it "keeps draining trusts but cannot be funded." Pensions were caught in a regulatory double-bind. The IRS mandated a higher interest-rate standard for assessing the present value of the benefit for funding—one based on corporate bond rates—relative to the interest rate required for paying lump sums, which were based on the 30-year treasury rate. The lower the interest rate, the higher the lump sum or present value associated with the monthly benefit. This discrepancy in interest-rate standards could result in total plan liabilities for funding being understated by 10–30%, depending on the benefit-weighted age of the underlying census. The net effect was that plans were often forced to pay out substantially larger lump sums than the amount that could be prefunded over a reasonable time horizon.

The new PPA provisions make the benefit a cost-neutral proposition, as it was originally intended to be, by dovetailing the lump-sum interest rate gradually over the next four years to the interest rate used for plan funding. After the new lump-sum interest standard is fully phased in, plans will no longer experience significant losses when participants choose the lump-sum option. This will make all pension plans healthier going forward and return benefits to the level intended by plan sponsors in the first place. (See the analysis below.)

What made this change necessary was that the unintended subsidy amount was actually growing, leading many plan sponsors to discontinue their DB plans entirely. This often left employees fending

for themselves to meet their retirement needs, as the replacement plan was generally funded with a majority of their own money. Some studies found that two-thirds of new program costs were carried by the employees, in programs less adequate.

Developing a way to make the lump-sum decision cost-neutral to plan economics was the best way to preserve the lump-sum distribution option. As the PPA legislation was hashed out, the Senate Finance Committee, the White House, and the Pension Benefit Guaranty Corporation (PBGC) all leaned toward doing away with the lump sum completely. The cost-neutral solution carried the day, however, and smaller lump-sum distributions are a small price for participants to pay. They are only asked to give up the windfall they were not meant to have.

Lump-sum cost neutrality achieved by consistent application of the yield curve

As the following analysis shows, in determining both a plan's current (or target) liability interest rate and the lump-sum cash-out rate, proper use of the yield curve remedies all ills. This happens because the lump sum exactly equals the liability. Pension plans would surely have been better off if the onerously low PBGC interest rate had never been mandated, as it was in 1986. Even though the IRS increased the interest-rate standard for paying lump sums in 1994 with the Retirement Protection Act (RPA), some plans felt obligated to retain the lower 1986 interest-rate standard for paying lump sums.

When we use the yield curve to determine the liability of a plan, that means we project the annuity benefit payments that the plan expects to pay for a person until he or she dies. This gives us a stream of payments expected in each year, well into the future. We do this for each person. Some payments begin right away, while others do not start until later. Then we add them up. This gives us the stream of expected payments for the entire plan, for each year, for 85 years or so into the future.

Next, we find a spot-rate yield curve representing the high-quality corporate-bond market. This is a series of individual interest rates, one for each year into the future.

Then, to develop the liability of the plan, we discount each year's benefit payment by applying the corresponding year's rate. We add all of these discounted benefit payments together and arrive at the plan liability.

The case for allowing lump sums

Many retirees take lump-sum distributions, in most cases an unfortunate choice. Why unfortunate? Lump sums are simply wrong for most people. Individuals tend to be poor investors; not even professional financial planners manage the distribution side of their retirement nest egg well. Furthermore, if retirees swap their annuity benefit for a lump sum, they expose their retirement security to both investment risk and longevity risk. Should they subsequently, or even immediately, opt to re-annuitize they would find that, even though they shed their pension annuity at wholesale prices, when they are forced to buy retail, it results in a much smaller monthly benefit.

In general, the annuitized money is better off in an ERISA trust than in a personal account, because the latter is too accessible, whether on a prudent basis or otherwise. Nonetheless, a case can be made for taking a retirement benefit as a lump-sum distribution. Here are some of the potential benefits that lump sums can offer:

1. **Lump sums allow an unmarried retiring employee to collect his or her entire deferred compensation. In the case of premature death, even one day after retirement, the entire benefit is forfeited with an annuity.** Pension plans are considered a deferral of wages. The money is entirely earned in the year it is accrued. Requiring an annuity means unfairly subjecting previously earned wages to forfeiture.
2. **Lump sums allow retiring employees to sever economic ties to the company, plan, and industry, and reduce their exposure to risk by collecting and self-directing their lump sum in a manner they deem most appropriate.** An employee's lifetime earnings are subjected to market forces specific to the industry and company he or she works in. Often, this employment risk is converted into imprudent investment risk by a company's requiring undiversified ownership of company stock via its defined-contribution retirement plan. Laws that have historically allowed employees to diversify and protect themselves from this company risk are currently being strengthened. This same risk diversification ought to be allowed in a defined-benefit plan as well.
3. **Collecting a lump sum allows the retiring employee better management over his or her entire portfolio of assets.** Financial advisors promote the view of total wealth management to optimize investment choices. Each individual investor owns different assets in different proportions and has different needs and goals. These needs and goals often require an asset-allocation approach that assigns pension funds to something other than a level annual annuity. Unlike a portfolio of 401(k) fund investments, pension plan investments facilitate self-direction only when paid out in a lump sum.
4. **Collecting a lump sum allows retiring employees to choose the appropriate time and extent of annuitization that's right for them.** Academic studies (e.g., the Pension Research Council at the Wharton School of Business, University of Pennsylvania) have indicated that the optimal age for retirees to annuitize some part of their personal wealth is a significantly later age than the plan's early and normal retirement age, even later than the Social Security full retirement age.
5. **A lump-sum option facilitates estate planning for retiring employees.** Some retirees prefer their earned benefit to be available for use in bequests to heirs, providing liquid assets upon their death, or in other worthwhile uses chosen by the individual. Without a lump-sum option, the death of the retiree can lead to the partial or complete forfeiture of unpaid benefits, thus denying the retiree the choice in how to use compensation earned during employment.
6. **A lump sum allows retiring employees more varied use of portions of their total retirement nest egg and at their own discretion.** Anecdotally, we know many newly-retired individuals look forward to celebrating the end of their working lifetimes and their new retirement. Often, they want to pay off their mortgages, take a well-earned trip, or contribute to their grandchildren's college funds. Most individuals covered in pension plans without lump-sum access have the vast bulk of their retirement funds locked in annuities via their plan (and Social Security). At least part of this retirement wealth ought to be accessible to them via lump sums, if they are to celebrate their achievement in these or numerous other ways of their choosing.

The following is a simple (and simplified) example in which the relative dollar amounts and payout periods are irrelevant to the results. The yield curve used is an actual curve published by Citigroup and posted on the Society of Actuaries' (SOA) Web site.

Let's say we have a plan with two participants, Mary and Bob. Mary will retire today and receive \$100 annually for ten years. Bob will retire 10 years from now, and will receive the same \$100 a year for ten years. The plan benefits and current yield curve look like this:

TABLE 1

YEAR	RATE	MARY'S BENEFIT(\$)	BOB'S BENEFIT(\$)	TOTAL PLAN BENEFIT(\$)	DISCOUNTED BENEFIT(\$)
1	3.09	100		100	97
2	3.40	100		100	94
3	3.64	100		100	90
4	3.90	100		100	86
5	4.12	100		100	82
6	4.33	100		100	78
7	4.52	100		100	73
8	4.65	100		100	70
9	4.80	100		100	66
10	4.94	100		100	62
11	5.09		100	100	58
12	5.26		100	100	54
13	5.44		100	100	50
14	5.58		100	100	47
15	5.69		100	100	44
16	5.76		100	100	41
17	5.83		100	100	38
18	5.89		100	100	36
19	5.94		100	100	33
20	5.98		100	100	31
TOTAL		1,000	1,000	2,000	1,230

The plan expects to pay out \$2,000 over the next 20 years and today's plan liability is \$1,230. The plan is economically indifferent to paying out \$1,230 today or \$2,000 over 20 years. We can compute an *effective* rate, which is the single interest rate that is equivalent to the series of rates forming the yield curve. In our example, the effective discount rate for the plan is 5.15%. In other words, if you use 5.15% each year for the entire plan, the liability will be the same \$1,230 as above. Let's also say that the plan has assets of \$1,230.

What happens to the plan when a lump sum is paid out to Mary using an interest rate lower than the plan's 5.15% rate to calculate her lump sum? Will Bob, the remaining participants, or the PBGC find themselves less well off after Mary takes her lump sum? The answer is no.

Here's why. First, let's use a lower interest rate, say 4.30%, to determine Mary's lump sum. We perform the same discounting process on her benefits as follows:

The reality behind overblown PPA headlines

At least two PPA-driven changes inspired oversized newspaper headlines about rising pension-plan costs. The response was unnecessarily inflammatory.

In the first case, drafters of the PPA acknowledged that some plan costs would increase immediately because the PPA changed the pension funding goal from 90% to 100%. The headline mill quickly responded. But the drafters also pointed out, astutely, that costs would immediately decrease for *most* plans. This did not receive as much attention.

The second case involved long-term cost increases. Basing annual contributions on a 6% liability rate does suggest that pensions will experience higher costs than with a 9% liability rate. Because a liability measured at a lower interest rate certainly amounts to a larger liability, it does indeed appear that costs will increase.

But, again, the wisdom of the drafters comes to the rescue. If a plan, for the purpose of this argument, is 100% funded, the lower interest rate increases the size of the required contribution, the normal cost. However, if the plan can earn what it said it could earn, i.e., 9%, then by year-end it will earn 3% more than the 6% mandated under the new law. Under the PPA, the break-even investment return—the expected return—is the same as the liability rate, which is 6%.

In the next year, under the PPA, the plan's contribution will equal the normal cost minus the prior exceptional return it earned above 6%.

Prior to the PPA, plans took credit in anticipation of their expected return on assets. Under the PPA, plans get credit for what their investments earn only after they earn it. Since the PPA doesn't change a plan's actual return on assets, any excess returns above 6% will lower the plan's costs, but delayed a year. That's not too shabby. In effect, the law is taking a Missourian point of view: "Show me."

Another overlooked facet of the PPA is that DB plans now have a larger tax-deductible contribution limit. Thus, in the years the company is performing well and may want to shelter some of its earnings, the plan may build up a funding cushion, allowing the company to better weather the storm of down years without adversely affecting participant benefits.

TABLE 2

YEAR	RATE (%)	ANNUITY BENEFIT (\$)	DISCOUNTED BENEFIT (\$)
1	4.3	100	96
2	4.3	100	92
3	4.3	100	88
4	4.3	100	84
5	4.3	100	81
6	4.3	100	78
7	4.3	100	74
8	4.3	100	71
9	4.3	100	68
10	4.3	100	66
TOTAL		1,000	798

According to these calculations, Mary gets paid a lump sum of \$798.

Now let's take another look at the plan's liabilities, person by person. To do this, we discount each participant's benefits separately using our yield curve.

TABLE 3

YEAR	MARY'S DISCOUNTED BENEFIT (\$)	BOB'S DISCOUNTED BENEFIT (\$)
1	97	0
2	94	0
3	90	0
4	86	0
5	82	0
6	78	0
7	73	0
8	70	0
9	66	0
10	62	0
11	0	58
12	0	54
13	0	50
14	0	47
15	0	44
16	0	41
17	0	38
18	0	36
19	0	33
20	0	31
TOTAL	\$798	\$432

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Notice that the sum of Mary's liability of \$798 and Bob's liability of \$432 equals the plan's liability of \$1,230. Also notice that the lump sum paid to Mary using a lower interest rate is exactly equal to the liability the plan expected to pay her using a yield curve. After Mary is paid, the plan still has the \$432 it holds for Bob.

What if Bob wants a lump sum, too, and he wants it now? We can pay Bob his lump sum the same way we did for Mary, and Bob would get exactly \$432. In the end, after everyone is paid his or her benefit, the plan equitably pays out exactly what it expected to pay, \$1,230.

The effective lump-sum interest rate used to determine Bob's lump-sum amount was 5.63%.

What's the trick? Where did the lump-sum interest rates come from? Is this result a coincidence or an actuarial anomaly?

There is no trick at all. The rate used to determine the lump sum for Mary was arrived at using the same yield curve for her benefits that was used for the plan as a whole. Because the spot rates corresponding to her benefit payouts are lower than the spot rates that occur in later years, Mary's lump-sum rate (i.e., her effective rate) is also lower than the plan's effective rate.

This is not a coincidence, but the logical result of using an internally consistent methodology, applying the same yield curve equally to both the plan and the individual.

Result: When done correctly, the effective lump-sum rate for a retiree is lower than the effective rate used for the entire plan. In this case, 85 basis points lower.

What would have happened if we had used the plan's rate of 5.15% to calculate Mary's lump sum? Mary would have been paid \$767—\$31 less, a windfall for the plan at Mary's expense.

Result: Using the same yield curve equally is correct, while using the same interest rate is not. When done correctly, the lump sum is equal to the liability.

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