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# When Is a Pension Plan Adequately Funded?

***by William Sohn***

Our defined-benefit system is in decline. Old plans terminate, but no new plans are formed to take their places. Each year fewer employees participate in defined-benefit plans, and of those who do, most accrue smaller benefits than their predecessors of a few years ago. At the same time, the Pension Benefit Guaranty Corporation (PBGC) continues to grow in premium income, assets, and plans under its control, while the book of federal regulations grows ever more complex. Just as the bureaucracy of the British Empire reached its maximum size as Britain ceased to be an empire (or so Parkinson tells us), so the federal pension bureaucracy reaches its zenith as its subject matter disappears over the horizon.

The decline in our defined-benefit system is most inopportune. Social Security is under demographic pressure as benefits have already been reduced and are likely to be reduced again in the future. Personal savings rates are low compared to rates in other industrialized countries. The defined-contribution plans that are replacing defined-benefit plans appear to be less generous, in the aggregate, than their predecessors. The true size of the loss in benefits has been obscured by the increase in the number of two-worker families and the long bull market. The full impact of the loss in benefits will become clearer as the baby boom generation retires in the next century.

The causes of the decline are debatable. Some would argue that our current situation is largely the result of the obvious restructuring of the global economy. Others would point to demographic changes, changes in life styles, changes in the power of labor unions, and changes in the American public's attitude to paternalism by employers. But while such exogenous factors apply equally throughout the industrialized world, the U.S. appears to be leading in the race to dismantle its defined-benefit pension system.

What, then, makes the U.S. stand out from the rest of the industrialized world? Clearly, the primary blame must be placed on federal overregulation. Rather than attacking government as a whole, I want to concentrate on just one aspect of our system's misdirection: our regulators' frustration with the lack of a clearly articulated *actuarial* standard of adequacy in funding—that is, a standard that satisfies actuarial principles and can be understood by both plan participants and plan sponsors. Instead, we have the Internal Revenue Service, the Pension Benefit Guaranty Corporation, and the accounting profession variously regulating issues of adequacy without regard to actuaries' views of the issue.

Consequently, I think it worthwhile to address the matter of adequacy in funding from first principles, without regard to the layers of regulation now existing. I believe that we can reason our way through to a rational model of adequacy in funding and from that model deal in a systematic way with accounting, tax, and pension insurance matters. The alternative, that is, starting with the current system and seeking insight into adequacy matters, has turned out to be less than fruitful.

## WHY PUT ASSETS IN TRUST AT ALL?

The first question we must ask ourselves is why do we put assets in trust at all? The usual answers are that (1) the law requires it or (2) there is a benefit to the taxpayer in the tax deduction. Both answers, of course, beg the question. There must have been some purpose to government requiring funding, and similarly, a tax deduction must be justified on some social ground or it will not long remain a tax deduction.

The correct answer clearly involves security, by which we mean that by funding the plan, we expect to promise participants more security. But then the critical question for our inquiry arises, how much in the way of assets is necessary or desirable to hold in trust?

## WHAT AMOUNT OF ASSETS IS IT DESIRABLE TO HOLD?

Let's first examine the extremes, or at least the practical extremes, of funding policy.

For an extreme in well-funding, imagine an old-fashioned sort of plan that defines a benefit in terms of current pay and buys a deferred annuity from a highly rated insurance company each year to cover the increase in accrued benefit. Ancillary benefits, if any, are what can be provided according to the annuity contract on an actuarially equivalent basis. If the plan were to terminate at any point, its promised benefits would be fully secure. Such a plan, and its associated funding policy, provides as much security as can be expected in this changeable world. (Such plans were common 40 years ago. They scarcely exist today.)

At the other extreme, imagine an unfunded Supplemental Executive Retirement Plan (a SERP), in which the benefit to any participant is highly unpredictable—depending as it does on the participant's final pay, age at retirement, and reduction for benefits payable from other funded plans. To the uncertainties of benefit determination is added the lack of security to the participant because there are no invested assets behind the benefit. The participant is merely another unsecured creditor of his own employer.

Under the unfunded scheme, the participant has no security. Under the funded scheme, the participant knows that his accrued benefit is always fully funded although that accrued benefit may be limited. But this suggests an answer. Perhaps we need not set a funding level in the abstract for an ongoing plan, rather the plan itself should define the benefit that is to be secured through adequate assets. In the case of a complex defined-benefit plan in which multiple assumptions go to measure ongoing liability, the security desired by the individual participant must be based on a benefit independent of the funding assumptions. Or, put another way, the plan must tell us what benefit is to be secured by adequate assets and what benefit, if any, might be payable from the plan only conditionally.

### Standards of Adequacy in Pension Funding

Let us reverse our point of view again and ask what benefits might reasonably be secured. In an American plan, by custom and law, the accrued benefits available at termination of the plan are, more or less, ascertainable. On the other hand, the benefits available on an ongoing basis will depend on many factors of future experience. What if we demand that the termination benefits be funded?

As a general rule, assets are needed both to secure payment of benefits when a plan terminates and also to pay ongoing benefits in a plan that continues. An actuary needs to look at both cases to satisfy himself that funding is adequate, but, as a practical matter, a plan that has adequate assets to buy out its termination liability will usually be able to make ongoing pension payments when due. For the remainder of this argument, I am going to ignore the possibility that the ongoing benefits are *designed* to be unfunded. (See Dick Daskais' article on page 9 for an intriguing argument in favor of just such a plan design.)

Furthermore, securing the termination liability will involve us in fewer assumptions, and the resulting simplification will help enormously in communicating the plan to sponsor and participant. Apparently then, it makes sense for a plan to define a benefit payable on plan termination and then fund for that benefit. Benefits payable above the level of termination level benefits would be payable only conditionally on the plan having adequate assets at the time of payment.

In the typical case, it seems that an adequately funded plan is one in which assets exceed liabilities on a termination basis. It remains for us to consider how termination assets and liabilities are to be measured, whether the proposed standard is too strong or too weak, what consequences such a standard might have for funding and plan design, and how mismatched assets are to be dealt with.

### Is Funding to the Level of Termination Liabilities Too Strong a Standard?

What we are seeking to determine is whether a plan is adequately funded if it is funded to *less* than the level of termination liabilities. A pension plan constitutes a promise to pay a benefit if certain conditions are met. It might be possible (in the absence of law to the contrary) to define the promise so that it is conditional on assets having been accumulated. It might be possible for a collective bargaining unit and an employer to agree that certain benefits will have to be foregone if the plan ceases. But unless the individual employee is part of that decision process, it borders on the unethical to tell an employee that he will be entitled to certain benefits on his retirement and then to deny him those benefits through deliberate lack of funding. Put another way, I doubt that one employee in a thousand could be expected to understand that the promises of the summary plan description were never intended seriously.

In fact, the PBGC, at least for insured benefits, exists to save the plan sponsor from the consequences of making promises it didn't intend to keep. If the PBGC has its way and it ceases to insure benefits that were never funded, then plan sponsors will again have to deal with the consequences of their unfulfillable promises.

The watchword here was implicit in the decision of Judge Clapp in *Vinson & Elkins v. Commissioner (99 TC 9)*: The issue is not whether an employee retires at age 55 or at age 62, say, but whether adequate funds will be on hand if, in fact, the participant chooses to retire when he is eligible to do so. In *Vinson* the taxpayer was seeking to justify a large deduction. In a large plan with special plant shutdown benefits or heavily subsidized early retirement benefits, the plan sponsor is usually seeking to minimize its contribution. But the security issue is the same: Will there be sufficient assets on hand when they are needed? Even the strongest companies can cease to be, and promises made in the flush days can come due when conditions have soured. If there is any point in funding a plan at all, it is to provide the promised benefits.

Consequently, I believe it is essential to fund toward at least the level of termination benefits unless all the parties to the pension promise understand the limitations of the plan sponsor's commitment.

### SHOULD PLANS BE FUNDED TO A LEVEL HIGHER THAN THE LEVEL OF TERMINATION BENEFITS?

We are all familiar with entry-age normal, projected unit credit and related funding methods that deliberately aim towards the accumulation of assets in excess of termination liabilities. (In many cases entry-age normal funding with an optimistic retirement age assumption and weak economic assumptions will result in asset accumulations less than the level of termination liabilities on a market value basis. In general, however, common funding methods lead to the accumulation of assets in excess of termination liabilities.) Although none of these methods necessarily requires that contributions continue to be made after a certain level of assets have been accumulated, it is customary to think in terms of each method leading to accumulation of the funding method's past service liability.

Why would we want more assets than are needed at termination of the plan? A number of suggestions have been offered:

- *The IRS permits deductions up to a level higher than the termination liability and/or higher contributions match the incidence of cost demanded by the accountants under FAS 87.* We are attempting to provide a rational basis for tax policy and accounting treatment, rather than the other way around. Accordingly, this objection begs the question.

- *By prefunding we are able to level our contributions over the years.* Contribution volatility occurs when assets and liabilities are close in value. Unless suitable averaging techniques are used, small gains or losses in assets result in large swings in contributions. Since volatility depends on the funded ratio and not on the funding goal (unless the goal is itself inherently volatile), volatility is not a valid objection to termination funding in particular.

- *By aiming towards a higher level of funding, we are able to compensate for the volatility inherent in mismatched assets.* It is asserted that, to insure assets stay above the level of termination liabilities on a market value basis, we should deliberately fund towards some level above termination liabilities. Although a margin is needed, it is not at all obvious, and probably false, that the appropriate margin can be obtained by funding towards a target unrelated to the desired level of liabilities. The problem of volatility of assets must be dealt with, but through the assumption setting process rather than through the selection of an inappropriate funding goal.

- *By overfunding at first we are able to contribute when cash flow is available and avoid contributions when cash is scarce.* This argument is not an objection to termination funding but to any funding regime that limits the amount of money that can be put in trust. Furthermore, contributing funds in excess of liabilities is not adjusting cash flow; it is the deliberate setting aside of money in trust that will never again be available to the plan sponsor (nor to the sponsor's creditors). Accordingly, this argument, like some others, begs the question.

- *The termination liability is an unstable funding goal that accentuates contribution volatility and can even lead to a contribution spiral in a declining company.* Of all the objections to termination funding, this is by far the most serious. However, the objection is, in fact, false for most well-designed plans as can be ascertained by a dynamic projection of the typical employee work group, assets, and liabilities.

Changing our point of view again, if we agree that termination funding is otherwise desirable, then the plan designer and actuary will seek to create plans in which the termination liability can, in fact, be funded because it is not particularly volatile. For example, a very rich plant shutdown benefit that is also payable on plan termination would be rejected, because it would require a very high level of funding against contingencies unlikely to occur in normal operation. If not funded, there might be insufficient assets at plan termination to pay the promised benefits. On the other hand, if the full value of the plant termination benefit is funded, the size of the fund could grow to be excessive relative to ongoing benefits (possibly to the point at which earnings on the fund are greater than ongoing benefits and the fund grows indefinitely). The lack of a funding solution is an indication that the benefit should not exist as a benefit available on plan termination. (The American solution is to not fund for "unpredictable contingent events" but for other sponsors of defined-benefit plans to pay for them on the bankruptcy of the employer through the PBGC. This is a political solution, not a funding solution, and one that has alienated many prospective plan sponsors.)

In summary, there appears to be no good argument, at least in theory, to fund to a target in excess of the level of the termination liability.

### How Are Termination Assets and Liabilities To Be Measured?

Clearly, to be adequate at termination, assets at market value must be sufficient to purchase annuities from an insurance company. The problem is not how to measure assets and liabilities when a plan termination actually occurs, but how to measure assets and liabilities for the determination of ongoing contributions.

### Implications for Funding

Let us consider an extreme example. Assets equal liabilities, both measured at market, and assets and liabilities are perfectly matched. Clearly no contribution should be made except with regard to future service.

Let us instead suppose that assets do not match liabilities, for example, assets are entirely in equities. Both assets and liabilities are subject to volatility and their price performances are not highly correlated. Annual "marking to market" could result in unacceptably volatile contributions (aside from the fact that it is not legal to remove assets from the pension trust merely because the plan is overfunded).

If we accept, as we must, the legitimacy of investing in unmatched securities we must also accept a risk of insolvency on a termination basis. What is needed is a contribution policy that keeps the risk of insolvency within acceptable limits.

(Methods are in use in the U.K., as well as in other countries, and the *Journal of the Institute of Actuaries* has published many articles over the last 15 years addressing just such funding issues. It would more than double the length of this article to develop here what can be found there.)

In any event, it must be recognized that mismatched assets create a possibility of insolvency on termination. The goal of actuaries is to measure and limit the risk to acceptable levels and the purpose of the PBGC is, at least in part, to cover the extraordinary circumstances in which an adequately funded plan terminates after a temporary market value fluctuation.

### Implications for Funding Methods

The common funding methods—projected unit credit, entry age normal and its variants—are arbitrary methods of allocating cost. Since 1987, the regulatory stress has been on the current liability, which resembles the termination liability. What appears to be needed is a permissible method that specifically funds for the termination liability.

## CONCLUSIONS

- Assets are put in trust to secure the benefit promise both if the plan continues and if the plan is terminated. Having assets sufficient to fund the termination liability will, as a practical matter, usually be sufficient to pay ongoing benefits as well. Accordingly, assets should be accumulated to the level of termination liabilities.

- If assets and liabilities are mismatched, the funding method and the actuarial assumptions need to be set so as to avoid unacceptable fluctuations in annual funding levels.

- A consequence of mismatched assets and liabilities is that a plan can never be assured to be solvent. What is desired is a funding policy that will generate solvency for an acceptable percentage of the time.

- None of the commonly used funding methods makes direct provision for the accumulation of assets to termination liability levels. Techniques for doing so have been described in the literature.

- Actuarial students need to understand the basic issue of funding adequacy before they concern themselves with the details of the common actuarial funding methods.

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