



SOCIETY OF ACTUARIES

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List of Schools With Actuarial Programs

This year's List of Schools and Colleges That Provide Actuarial Science Programs is now to be had for the asking from the Chicago office. A copy has been sent to the chief actuary of each company in Canada and the United States that is on the Society's mailing list. Compilation was the last of many services rendered our profession by the late Robert N. Powell, chairman of the subcommittee that collects this information.

Funding Flat-Benefit Pensions

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the final-pay plan but will steadily increase under the flat-benefit plan.

Example

Assume a flat-benefit plan under which the liability for active employees remains constant except for annual amendments that increase these benefits by 6%. The plan is funded over 30 years on a 7% interest assumption, and there are no gains or losses.

The resulting active employees' funding ratio will stabilize after 30 years at 37%. That is, assets will cover the full retired life liability and 37% of the active life liability, under the plan's funding method.

Higher interest rates or benefit increases would worsen this funding ratio dramatically. An 8% interest rate would lower the ultimate funding level to 35%; a 7% benefit increase rate would lower it to 32%. If current rates—say, 12% interest and 10% benefit increases—became the norm, the funding ratio would stabilize at just 16%. On the other hand, funding over 10 years helps greatly; on the 7% interest and 6% benefit increase assumptions, the funding ratio would improve from 37% to 76%.

Comments

Assuming that serious inflation is here to stay, these results are disturbing for several reasons:

(1) Rational funding practices should not result in fully-funded pay-related plans and weakly-funded flat-benefit plans, when the two plans are just different ways of achieving the same bene-

BRIGHT LEXICON OF YOUTH

We have reports of a brace of early achievers.

David R. Godofsky passed all of the Associateship exams before age 21, putting Part 5 behind him in May 1979 at age 20.

Nooruddin S. Veerjee, born in Pakistan December 29, 1958, became a Fellow in May 1980, making him just under 21½ years old when he wrote his last exam. His achievements include completing the Institute of Actuaries Associateship in May 1977 at age 18½. He started actuarial work in a Karachi consulting firm in 1976, and came to the United States in 1978. □

fit objectives. As this difference in funding becomes more widely recognized, it may become a significant social issue for our critics.

(2) Despite its phase-in rules, the Pension Benefit Guaranty Corporation may be at greater risk in flat-benefit plan terminations. Participants clearly are.

(3) The sponsoring companies may not be getting sufficient negotiation credit for improvements in flat-benefit plans, since substantial unfunded liabilities will always exist and may have to be written off upon plant closing or sale, a cost not recognized when the plan improvements are negotiated.

(4) The size of the problem is not recognized by many clients, who believe that our funding schedules must lead to well funded plans. Those who notice that their salaried plans tend to be the better funded of the two types may think that this is a temporary aberration rather than the inevitable outcome of the funding practices. While they recognize that plan improvements continually create unfunded liabilities, they may not consider 30% or 40% a satisfactory ultimate funding level.

What Can Be Done?

First, shorten the funding period. Extended funding periods work satisfactorily for non-recurring changes, but changes that merely keep up with pay are more reasonably funded over the expected period to the next increase. Ten-year funding is of course the practical limit.

Social Security

John C. Wilkin, "United States Population Projection by Marital Status for OASDI Cost Estimate, 1980." Actuarial Study No. 84, Social Security Administration, Baltimore, Maryland, October 1980, pp. 40.

Presents the 75-year population projection by marital status used to analyze potential financial commitments of the OASDI Trust Funds appearing in the 1980 Trustees Report. Tables give estimated future marriages, divorces, and new widowhoods by year. The projection presented here is consistent with the Alternative II population projection in Actuarial Study No. 82.

Bruce D. Schobel, *Administrative Expenses Under OASDI*, Actuarial Note No. 101, Social Security Administration, Baltimore, Maryland, November 1980, pp. 20.

Presents a summary of OASDI administrative expenses, 1940-1979. Expenses are measured by several denominators: contribution income, benefit payments, taxable payroll. An administrative expense index is developed and used to analyze the changes in expense levels, 1960-1979. □

Second, adopt a strong funding method, e.g., the entry age normal method.

Third, choose assumptions carefully. The risks inherent in a final-pay plan are usually thought to require conservatism, but this need seems even greater in frequently renegotiated flat-benefit plans.

Fourth, even when anticipated increases are not pre-funded, tell the sponsor how much prefunding would cost, thus giving him a useful funding benchmark.

Formula For Funding Ratio

The funding ratio discussed in this article, which is independent of the cost method used, is of course the complement of the unfunded liability. The unfunded liability may be calculated by the formula

$$\frac{bu}{1-v^n} \left(\ddot{a}_{\overline{n}|} - v \cdot \frac{v^{n-1} - u^{n-1}}{v-u} \right)$$

where

b = the annual benefit increase percentage,

n = the period for funding plan change liabilities,

u = reciprocal of $(1+b)$

\ddot{a} is calculated at effective rate b .

v is calculated at the selected interest rate assumption. □