



SOCIETY OF ACTUARIES

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ACTUARIAL NOMADS

Among our 8,000 present members there are a few who, having struggled like the rest of us to Fellowship or Associateship, have wound up earning their livings in ways quite unlike yours and mine.

Our Career Encouragement Committee's Subcommittee on Actuarial Opportunities has looked around for members who hold jobs in non-traditional areas. Subcommittee Chairman Gilbert V. I. Fitzhugh reports having discovered 27 of these.

This hunt's purpose was to find out whether there might perhaps be more such opportunities for actuarially trained men and women, whether those who have left the beaten path have found our brand of training useful in what they are doing—and whether our educational system might be adapted so as to become a yet better stepping-stone into diverse fields.

The Subcommittee asked these members what value they now think the actuarial course has been to them, with these results:

Exams Regarded As:

Mostly A Waste of Time	11	responses
A Suitable Path, But Not Uniquely So	9	"
The Preferred Way To Prepare	5	"
Special Cases	2	"

Verdict: "Waste of Time"

Among the eleven who evidently regret having strayed into our examination centers were 5 Fellows. One is now building restaurants for a fast-food chain; the others are a family physician, a farmer, a health care delivery consultant, and a divinity student and part-time preacher. The Associates include a chartered accountant, a systems ana-

(Continued on page 2)

QUESTIONS FOR E & E ?

The Education and Examination Committee is introducing a periodic Question-and-Answer column. To get it started, we hereby solicit questions from readers.

Through this form of communication between the Committee and students, teachers and other interested members, we aim to remove mystique from the examination process.

Please send us questions that are of general interest to students writing any particular exam, to students in general, or to Society members.

We do not promise to answer every question, but we will respond in this column to questions of widespread interest, and we will reply personally to other enquiries. The first column is to appear in April.

Send your questions to: James J. Murphy, Director-Underwriting, Northwestern Mutual Life Insurance Company, Milwaukee WI 53202.

Peter Hepokski

FUNDING FLAT-BENEFIT PENSIONS IN AN INFLATIONARY ERA

by Lawrence N. Bader

The Problem

Consider a company that sponsors a final-pay plan for its salaried employees and a negotiated flat-benefit plan for its hourly-paid workers. Under the former, benefit increases due solely to salary increases are anticipated and pre-funded. But the corresponding increases under the latter take place only through plan amendments, are not anticipated in the funding, and create new unfunded liabilities. If both plans' benefits are held constant in relation to pay, the unfunded liability will gradually disappear under

(Continued on page 4)

1981: A VINTAGE YEAR FOR SOCIAL SECURITY LEGISLATION?

by Dwight K. Bartlett, III

There is reason to expect 1981 to be the biggest year for Social Security legislation since 1977, perhaps even since 1972. Between 1935 and the early 1970's Congress used to love Social Security legislation because of its opportunity to vote more benefits to more people. But Congress has come to loathe this task since it requires difficult choices—increasing revenues, reducing benefits—that inevitably anger a significant portion of the electorate. Witness the extreme difficulty in adopting last year's relatively minor disability insurance amendments.

Congress, in 1981, cannot avoid passing significant legislation to deal with financing. Present projections of the Office of the Actuary indicate that without legislative remedy the OASI Trust Fund will be unable to pay benefits, certainly in 1982 and maybe even in late 1981. Since Congress must do something it may be in a mood to try to do everything this year in the hope that thus it can avoid addressing Social Security financing problems for a while—certainly not in the election years 1982 and 1984.

Several questions are apt to receive serious consideration by Congress in 1981. These include:

(1) *Inter-Fund Borrowing.* This will permit the OASI Fund to borrow from the DI and HI Funds until the higher payroll tax rates scheduled for 1985 come on stream and permit the OASI Fund to recover and the loans to be paid back. This is the most likely of all provisions to be legislated since it requires no tax rate increases and no benefit reduction. Current projections, however, show that this by itself probably won't

(Continued on page 3)

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

(Continued from page 1)

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. □