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Pension and the Cost of Living

What developments have there been in pension plans where the pension is related to the cost of living? What actuarial problems have arisen? Are these problems in any way different if the plan is administered in outline form (*a*) by an insurance company; (*b*) by the employer or by trustee; (*c*) by a governmental body?

MR. KENNETH ALTMAN: The New York State Employees Retirement System, established in 1920, provides a comprehensive program of retirement and insurance benefits for its members. The service retirement benefit (the principal benefit) consists of two separate and distinct parts: a pension provided by the employer and an annuity provided by the employer.

The pension portion is related to the employees' final average salary—the most popular plan providing a pension of 1/120 times the final average salary for each year of service upon attainment of age 55 or later. Use of the final average salary automatically adjusts this portion of the benefit to the employee's then current living standard.

The annuity portion is purchased by the employee by means of contributions at a rate assigned the employee upon his entry into the system. The rate of contribution is applied against all earnings during his entire working lifetime, and the accumulation of these contributions is applied at retirement to purchase an annuity at purchase rates guaranteed on the date he enters the system. Use of an average-salary approach for this portion of the retirement benefit has produced inadequate benefits.

One of the original objectives of the system was to provide approximately equal pension and retirement allowances; thus the employee would share equally in the cost of his retirement with the employer. However, steadily improving mortality and lower interest rates have lead to several rate increases, and prolonged inflation has resulted in higher benefit requirements. The problem of inflation on the pension side, at least prior to retirement, has been handled by the final average salary, but the problem of an inadequate annuity portion still exists.

Since a fully noncontributory pension plan based on final average salary is one answer to this problem, many of the 1,900 employers in the system moved in this direction in 1960 by assuming a portion of the employee contribution. At present, the employer's normal cost is about 10 per cent of payroll, and the average of employee contributions is about $2\frac{1}{2}$ per cent. Once the remaining gap is closed, the entire retirement allowance will be related to final average salary of the employee—a plan advocated by the state comptroller as head of the system. From the employee's

standpoint, this will neutralize the effect of inflation during his working lifetime.

Having retired, an employee is confronted with the prospect of a fixed income in the face of rising prices. This problem was recognized in 1951, when the legislature provided a supplemental pension allowance—at first a means test was required, but later the test was discontinued and benefits were expanded. Currently, the additional retirement allowance is related to the B.L.S. Consumer Price Index. The supplemental pension is expressed as a percentage of the total retirement allowance, varying by year

TABLE 1

Year of Retirement	Per Cent
1957 or thereafter	None
1956	5
1955	7
1954	7
1953	7
1952	8
1951	10
1950	20
1949	20
1948	20
1947	30
1946	50
1945	60
1944	65
1943	70
1942	80
1941	100
1940 and earlier	110

of retirement and subject to review annually by the legislature. The scale of percentage increases in retirement allowances presently in effect is shown in Table 1.

The cost of the supplemental retirement allowance program is on a pay-as-you-go basis from revenue sources outside the pension system.

For the past several years we have been giving serious thought to the adoption of a variable annuity plan. While the subject is still under consideration, the only progress along these lines at the present is a diversification of the investment portfolio. Currently, about $28,000,000, or 1½ per cent, of our total assets are invested in common stocks.

MR. JOHN P. JONES: On October 11, 1962, the President signed an act which provides for automatic cost-of-living adjustment of annuities under

the Civil Service Retirement Act. This act applies to the 600,000 currently retired employees and survivors and all future retirees. The income under the act will be adjusted on April 1 of any year if the price index (B.L.S. Consumer Price Index) for the previous calendar year exceeds that for the year resulting in the last previous adjustment (or 1962 if no previous adjustment has been made). If this comparison shows a rise of 3 per cent or more, annuities will be increased by the index rise rounded to the nearest one-tenth of 1 per cent. Annuitants retiring later than January 1 of the calendar year before an adjustment is made will not be eligible for that increase. This limitation on recent retirees means that an annuitant must have been on the rolls for at least fifteen months before becoming eligible for an April 1 adjustment.

There are three ways in which the act provides for simplified administration and, as a result, creates certain anomalies. First of all, adjustments are made only when a cummulative rise in the index is at least 3 per cent, since the last adjustment. Second, the adjustment is to apply to all annuitants who were on the rolls at the beginning of the calendar year which produces the adjustment. Third, the price index comparisons are calendar-year comparisons rather than monthly comparisons. The anomaly presented by these simplifications is that an annuitant who retires January 1 of a year where the price index comparison for the previous year showed a cumulative rise of not quite 3 per cent will, in all likelihood, receive an increase in benefits of at least 3 per cent fifteen months later.

Members withdrawing with rights to deferred annuities (beginning at age 62) and survivors of active employee deaths will receive only increases occurring with respect to calendar years after annuity payments begin. However, for surviving widows of pensioners the annuity payments will be increased by all increases the primary annuitant received before his death plus those occurring afterward. Since children's annuities are normally a flat amount per child, and thus not responsive to salary increases, it was decided to increase the child's flat benefit amounts by all price index adjustments after 1962.

No special provision was made in the act for raising contribution rates either for the employee or for the government. The present employee contribution rate is 6½ per cent of pay matched by 6½ per cent contribution by the employing agency. The law states that the Civil Service Commission shall submit estimates of the annual additional appropriation necessary to finance the fund by normal cost plus interest bases. More details of the results of this act will be found in a forthcoming article in the *Social Security Bulletin.*

MR. ALAN A. GROTH: About five years ago Arthur Stedry Hansen introduced to some of its clients what we call the equity pension option. This option is an outgrowth of the principle that a well-designed pension provides supposedly adequate benefits at the time of retirement. The basic principle was fine, and, if the pension plan is well designed, the only concern is inflation after retirement. This equity pension option, as the name implies, is nothing more than an option added to a conventional plan permitting the employee to convert his fixed pension at the time of retirement into an equity pension.

Of course, there are practical problems which must be resolved. For example, the pensioner who converted his fixed pension to an equity pension just before May 28, 1962, could receive a variable pension which for a long time, or possibly even for life, might be less than the fixed pension he converted. To minimize this hazard, we recommend that the conversion be made in installments during a period of time preceding or just following the time of retirement. By doing this, we believe that some dollar averaging will work to the employee's advantage.

It is important to note the distinction here between the plan where an employee elects an equity pension during his active working lifetime as opposed to the equity pension option where the election is made at or around the time of retirement. Where the election is made at the time of retirement, the employee is better aware of his circumstances after retirement and thus better able to make a sound election. Also, by using the option in this manner, we reduce the equity record-keeping to a minimum because, instead of dealing with a large number of active employees, we will be dealing with a relatively small number of retired employees.

If an equity pension option is added to a pension plan, two funds will be required: the separate equity fund covering the liabilities for equity pensions and the general pension fund for fixed pensions. The separate equity fund is set up at the time the first conversion is made. At that time, a part of the assets of the general fund, consisting primarily of equity investments, is transferred to the equity fund. The amount transferred is equal to the present value of the fixed pensions converted. The initial unit value will at that time be $1.00. Thereafter, the equity fund is credited with the assumed interest rate and is charged with the actual disbursements adjusted for interest at the assumed rate. At the end of the year the expected fund so derived is compared with the market value of assets in the equity fund to arrive at a new unit value. By determining the new unit value on the basis of investment yield alone, mortality gains and losses are not influencing unit values. We believe that this is the only proper procedure

because a pensioner's retirement benefit should not be affected by the mortality experience of his fellow pensioners. The end-of-the-year fund is then adjusted for mortality gains or losses by a suitable transfer to or from the general fund.

The option is very simple and can be added as a separate article or an appendix to any existing plan. The percentage of the variable pension is left to the option of the employee, and this, perhaps, is the only selection he makes. We believe that it is desirable to provide a floor of protection in the form of fixed annuities. We also believe that equity pensions are also desirable because they will provide an important hedge against inflation and will permit participation in the nation's growth. Some of our clients have selected a 50-50 per cent combination, and one of our clients permits a 75 per cent maximum equity pension election. The 75 per cent probably is sufficiently high to cover most situations.

There is some problem with integrated pension plans which, according to Mimeograph 5641, should be related to the final average compensation of the employee. On the basis of conversation with Treasury people, we believe that, if the equity pension operates only during the postretirement period, this limitation will not be enforced.

One of the interesting features of our option is the right to reconvert—that is, in most of these pension plans the employee may reconvert his equity pension into a fixed pension. Since this is simply a transfer on paper of securities from one fund into another, it does not present any particular problem as long as we have a free security market.

MR. ARTHUR PEDOE: I am disappointed at the tone of the discussions on inflation at this meeting. The speakers seem to infer that inflation can be countered by some actuarial device or dodge. All this "fooling with the fifth place of decimals" ignores the essential danger and damage to our social order by inflation. We actuaries have a responsibility here. In recent visits to England I was shocked at the degree of inflation over a three-year period, which has now been followed, of course, by the usual internal struggle of the adjustment of wages, etc., to prices. The weak are submerged.

I am of the opinion that there is no certain way of beating inflation—we deceive ourselves if we state otherwise. In early days when a ruler "shaved the currency"—a form of early inflation—his name became a byword of contempt among his subjects and contemporary rulers. It is a tragedy that these days a continuous state of inflation and, therefore, struggle and unrest seems to be favored by many.

MR. WILLIAM M. ANDERSON: Several of the speakers have referred to pension adjustments based on the Consumer Price Index published by the Bureau of Labor Statistics. This Consumer Price Index is a base-weighted index and suffers for this purpose from all the difficulties that arise from the choice of the base periods and the kinds of weights that are assigned to the three hundred goods and services which the index is composed of. It also suffers from the way in which these weights are brought together on the national level, since the index is constructed on a city-by-city basis.

There is another form of index called the "Implicit Consumer Price Index," which is used internationally in the development of the national accounts. This index is available indirectly from page 29 of *Indicators*[1] and from that source is easily compared with the B.L.S. Consumer Price Index, which is on page 28. The Implicit Consumer Price Index, although it is not given explicitly, can be derived by a series of divisions. (Note that this index is updated every year so that the last full year is 100.)

The point I wish to make is that the currently weighted Implicit Price Index as developed in the national accounts in Canada, the United States, and Great Britain is to my mind a considerably more accurate indicator of consumer price movement and can be used with a great deal more confidence than the B.L.S. Consumer Price Index. Of course, once you start to use the implicit price index, you have right at hand its sister, the series of constant dollar spending per person. This is the series that represents the standard of living in a relative sense as it moves from year to year. Of course, the combination of these two is the index of current consumer spending per capita.

The interesting facet that has impressed me so much is that in both Canada and the United States, if one goes back over time and compares these two indexes—the index of the standard of living and the index of implicit prices—as constructed through the national accounts, the movements are quite parallel. In other words, prices go up as the standard of living goes up, and vice versa. In fact, our economies are of such a character that the two movements have had about the same amplitude of fluctuation and long-term trend.

Now it becomes apparent that the combination of the two indexes produces a considerably smoother series than either of the two components alone. This suggests the square root of the combined series is a very appropriate type of index to use for pension adjustments that are designed to

[1] Published monthly by the United States Department of Health, Education, and Welfare.

reflect changes in either cost of living or standards of living. It has occurred to me from my studies that the geometric mean of the two indexes is a better guide for pension adjustments than anything else.

I think I ought also to add that the problems of adjustment in pensions in relation to changes of price in my opinion are of such a character that they should not be dealt with by automatic escalators. In the case of public systems, I suggest that the changes should be dealt with in the same manner as changes in taxes are dealt with. In general, one does not build automatic escalators into a tax law except to the extent that progressive taxes have automatic escalators in them anyway.

Comparably, in the case of private systems, my opinion is that adjustments in pension schemes related to changing prices ought to be dealt with in exactly the same manner that an employer deals with his wage problems. Unless he accepts through bargaining or otherwise automatic escalators on wages, he should not use a pension system either before or after retirement with automatic escalators of pensions.

MR. M. DAVID R. BROWN: Of some interest to you might be the experience that Eckler and Company had with a public plan for which we are the actuaries. The employer in this case was considering undertaking an automatic escalator and asked us to express the cost considerations.

We had to face the fact right at the beginning that they did not plan to fund their benefits in full, and thus the cost implications of an automatic escalator were really significant. For this reason, rather than using the normal funding methods, we simply measured the cost by making projections on various assumptions as to what the outlay of the fund would be, with particular emphasis on rates of growth in the number of employees and rates of escalation in benefits, both of which far outweigh mortality or interest assumptions for this kind of investigation.

After taking one look at the results, the employer, with an eye on the cost commitment that he was exposing himself to, discarded the idea of a commitment to an escalator and followed Mr. Anderson's philosophy that this sort of thing should be dealt with in the same way that you deal with wages.

MR. DONALD S. GRUBBS, JR.: At John B. St. John's office we have been faced with the question of insurance company versus trust company administration of plans geared to inflation for some time, and the answer is relatively simple. While in Canada, Canadian insurers are able to compete with trusteed plans directly in the field of variable or equity annuities, in the United States the major insurance carriers dealing in corporate pension plans do not issue a variable or equity annuity policy at the present.

Our major problem concerns not the large employer who may be able to self-insure but the small employer whose group is too small to insure his mortality. We are faced, then, with the problem of either telling the small employers that they must wait until and if the insurance companies begin selling variable annuities, or we must find some other way. Our suggestion is that we can establish an equity plan providing a ten-year certain and continuous benefit with variable benefits being paid out of the trust during the ten-year period, and funds accumulated in this trust fund sufficient to purchase a variable annuity ten years from now on the assumption that at that time the insurance companies will be able to issue variable annuity policies.

MR. RAYMOND L. CRAPO: For the record, the Variable Annuity Life Insurance Company, while not a "major" company at present, has had the variable annuity available for group pensions since 1956.

The most significant aspect of today's discussion is the complete absence of comment by representatives of United States companies. These companies have taken three steps to solve the easier of the two problems which inflation has presented to those who design pension plans.

United States insurance companies have made giant strides toward providing adequate pensions at retirement date at reasonable costs by: (*a*) basing pensions on final average salary; (*b*) investment method of crediting interest; and (*c*) equity funding through separate accounts.

Absent from these efforts, though, is any serious attempt to provide, on an insured basis, pensions which are adequate after retirement. It must be remembered that about 4 out of every 100 male employees who retire at age 65 will live to age 95. How many of those retired employees will still have an income sufficient to provide a "dignified" standard of living? It appears to me that legislation obtained to date by the group annuity writing companies has in fact prohibited any attempt to solve this problem and as a result will force employers to still turn to the self-administered trust.