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Economic Survival in Retirement: Which Pension Is for You?

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Economic Survival in Retirement: Which Pension Is for You?

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Edited by
DALLAS L. SALISBURY

AN EBRI-ERF POLICY FORUM

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Foreword

EBRI's Education and Research Fund sponsored its seventh policy forum on May 20, 1982. The public policy topic selected for this forum's discussion was "Defined Benefit/Defined Contribution Plans: Understanding the Differences." Attention focused on each of these plan's ability to secure adequate retirement income for plan participants.

Recent Internal Revenue Service data indicate that a high proportion of new retirement income plans are the defined contribution type. This suggests that the relative attractiveness of defined contribution and defined benefit plans is changing. This trend results, in part, from federal government regulations that have encouraged defined contribution plan growth and inhibited defined benefit plan growth. For example: The 1974 Employee Retirement Income Security Act, 1975 Tax Reduction Act, 1978 Revenue Tax Act, 1980 Multiemployer Pension Plan Amendment Act, 1981 Economic Recovery Tax Act and 1982 Tax Equity Fiscal Responsibility Act have all contributed to increased interest in the defined contribution approach (i.e., money-purchase pension plans, profit sharing plans, thrift plans, employee stock ownership plans, individual retirement accounts, simplified employee pension plans).

Other forces have also enhanced the present attractiveness of defined contribution plans. These include: (1) the economic effects of inflation, recession and the need for capital; (2) the impact of recent major changes in family structure and employment patterns on workers and the resulting increased interest in flexible benefit program arrangements;* and (3) broad advertising efforts which encourage workers to contribute to individual retirement accounts (IRAs).

The recent emphasis on defined contribution plans, however, has developed without a thorough examination of the potential effects that such policy changes may have on future retirement benefit levels. In order to responsibly prepare for their own welfare and the welfare of all future retirees, policymakers, plan sponsors, employees and their families must examine carefully the strengths and weaknesses of each retirement plan alternative.

Since pensions are based on lifetime work experiences and income, the ultimate effects of current shifts in plan development may not

*Employee Benefit Research Institute, *America in Transition: Implications for Employee Benefits* (Washington, DC, 1982).

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Introduction

Robert D. Paul

The form our nation's retirement income programs should take is a topic that is exciting the interest of just about everybody in America. The articles in this volume discuss defined benefit and defined contribution plans under different guises. Three broad trends are contributing to a heightened interest in the structure of retirement programs.

The first trend involves legislative changes which have an impact on the economy. One of these is the individual retirement account (IRA) legislation, which is encouraging people to save for retirement through tax-deductible contributions to IRAs or through qualified voluntary contributions to employer-sponsored plans. A second legislative change is the 401(k) salary reduction program. This allows tax sheltering of up to 15 percent or more of income. A third change that has affected trends in defined contribution and defined benefit plans involves the Pension Benefit Guaranty Corporation (PBGC) and its insurance requirements for defined benefit plans.

A second trend involves Social Security. Discussions about Social Security's finances are creating greater interest in retirement programs which complement the Social Security system. The papers in this book assist in developing a better understanding of the alternative methods available to deal with this question.

The third trend reflects the demographic and social changes that are forcing people to reexamine the question of which pension serves their needs best—defined benefit or defined contribution plans. Those of us who were around in 1949–1950, when the private pension movement was reborn, know that most people who were in their forties and fifties at that time had lived through a depression and did not have private savings. They did not know about defined contribution plans. Defined benefit plans were negotiated because they allowed past service credit to be granted for years of work prior to plan creation. This permitted workers to obtain meaningful benefits after a short period of additional work.

Today, workers who are entering the labor force for the first time are exposed to a different type of environment. Private defined benefit plans and defined contribution plans are now taken for granted. Past service is not as important in the minds of today's young workers, because they have a full career in which to earn a retirement benefit. Thus, people are asking themselves: Which pension is the better alternative? Which retirement income components offer an effective blend? Do we need both defined benefit and defined contribution plans?

Moreover, there are more and more two-worker families. Both members of such families may consider individual savings opportunities as well as the questions surrounding the options of defined contribution and/or defined benefit plans.

Finally, there is the general question of whose responsibility it is to provide retirement income. Is it the government's responsibility? Is it the private employer's responsibility? Is it the individual's responsibility? Or is it the responsibility of all three parties?

There is increasing emphasis today on the notion that it is up to individuals to provide a greater portion of their own retirement income security. This is also contributing to our reexamination of the issues surrounding the question of *Economic Survival in Retirement: Which Pension Is for You?*

Defined Benefit and Defined Contribution Plans: An Overview

Charles Lambert Trowbridge

In terms of the number of American workers covered, the dominant form of retirement plan has long been the *defined benefit* pension plan. Almost as old is the *money-purchase* pension plan—another type with a different rationale. Since the early 1960s, money-purchase plans—together with profit sharing and thrift plans—have been called *defined contribution* plans. The defined benefit/defined contribution dichotomy emphasizes the primary distinction between the two types.

The first section of this paper is a discussion of the "Similarities and Differences" between defined benefit and defined contribution plans. To the differences commonly recognized, the paper adds the thought that the two plan types have adopted different definitions of individual equity.

The second section, "A Brief History of Defined Contribution Plans," discusses how these plans have fared in competition with the defined benefit arrangement.

In the third section, "The Impact of Inflation," a mathematical analysis is provided in which the pension benefit of a defined contribution plan is expressed in defined benefit form. This section illustrates the differences noted in the first section and examines the impact of inflation on the two plan types.

In the section entitled "Recent Developments," the paper examines the environment in which retirement programs exist today and it discusses recent developments which seem to alter the relative attractiveness of the two plan types.

The final section expresses the writer's personal viewpoint and his conception of an appropriate public policy with respect to pensions in general, and with respect to defined contribution plans in particular.

Similarities and Differences

Almost from the beginning of public and private retirement programs in the United States, pension plans have developed along two relatively distinct lines.

The type that covers the larger number of workers defines the amount of retirement benefit through a formula recognizing salary, service or other variables.[1] This arrangement has come to be known as the defined benefit retirement plan.

The contrasting type calls for specific employer and employee contributions, accumulates these contributions in individual accounts and defines the retirement income for any retiring worker as the amount of pension his account will *purchase* at date of retirement. This arrangement was commonly termed the money-purchase form of pension plan up until the early 1960s, when the more descriptive defined contribution terminology was suggested.[2]

It should be recognized that defined contribution includes, in addition to the money-purchase pension plan, several other arrangements that have similar characteristics. Profit sharing and thrift plans define the contributions somewhat differently and have a somewhat different purpose, but they operate much like the money-purchase plan during the worker's active years. A savings fund, which an individual sets up for himself for retirement purposes, is yet another defined contribution form. In the remainder of this paper, defined contribution includes profit sharing and thrift plans, and occasionally it includes plans that are independent of an employer. When only the pension form is intended, the older money-purchase terminology will be used.

Similarities—Defined benefit and defined contribution plans have much in common. A list of the more important similarities includes the following:

(1) Both are employee benefit plans. Employees may or may not contribute, but there is a substantial contribution by the employer. Today, the employer contribution is viewed as a deferred part of the compensation package.[3]

(2) An important objective of both defined benefit and defined contribution plans is the orderly retirement of workers.[4]

(3) Both build up substantial pools of invested assets, the earnings on which serve to reduce the contributions or to increase the benefits. Private pension or profit sharing plans of either type are important sources of capital investment, and they are a constructive force toward a healthy economy.

Differences—The most striking differences are: (1) a distinction in underlying reasoning or rationale; and (2) several important but more technical differences that flow from (1).

(1) *Differences in Rationale*—Most authors have presented the basic distinction as one of contrasting employer commitment.[5] In the defined benefit arrangement, the employer undertakes to provide for any specified employee a clearly stated retirement income. In a defined contribution arrangement, the employer undertakes to make clearly specified contributions to an individually allocated investment account. These two kinds of employer commitments are in sharp contrast, and they are usually mutually exclusive. In defined benefit arrangements, the employer contribution in the aggregate is to be worked out over the future (and is often undeterminable as to any specific employee). In defined contribution arrangements, it is the amount of the individual pension benefit that is left to the future.

Another way of looking at the differences in underlying rationale is in terms of individual equity within the *employer transfer*.[6] In any employee benefit plan, the employer pays part of the payroll in other than immediate cash. This transfer from employer to employee within a pension plan is the basis for the concept that pensions are essentially a form of deferred compensation. Questions of equity between individual workers in an employee benefit plan, therefore, come down to a matter of individual equity within this portion of the compensation system.

Assuming that the cash or money wage structure fairly compensates each employee for his or her efforts, the employer contribution under a money-purchase pension plan (almost invariably a flat percentage of the cash salary or wage) must also be viewed as equitable. That the employer contributes the same percentage of pay for every covered employee is a philosophical strength of the defined contribution arrangement. The underlying principle of equity is that individual workers enjoy *benefits of equal value.*

There is, however, a competing view. In defined benefit pension plans, as in most group insurance arrangements, the principle is one of *equal benefits.* Equal benefits are rarely the same as benefits of equal value, because employees vary as to age, sex and other risk characteristics.

In summary, defined contribution plans define individual equity in terms of equal employer contributions and accept the necessarily unequal benefits that equal contributions provide. Defined benefit plans define equity in terms of equal benefits and accept the necessarily unequal employer contributions.

(2) *Other Differences*—The distinctions between the defined benefit and defined contribution forms are importantly those of contrasting rationales and different views as to individual equity. These, in turn, lead to some more technical differences:

(a) A defined contribution plan, in its pure form, is necessarily prospective only in nature. Benefits can arise only from employee and employer contributions, and there can be no contributions until the plan begins. Salary or service prior to a plan's beginning is ignored. In contrast, a defined benefit plan can—and usually does—recognize in its benefit formula, service with the employer before the plan's inception. It is, therefore, retrospective as well as prospective. An important part of the employer contribution in the early years of the plan goes toward the payment for pension benefits earned before the plan came into existence.

(b) Another difference lies in which of the two important parties, the employer or the employee, bears the uncertainties which surround any pension arrangement. To the employee, the most important matter is likely to be the level of benefits. The defined benefit arrangement speaks to this concern directly (although the response may well be in terms of parameters that cannot be immediately quantified, or assumptions that may not hold). The defined contribution arrangement is much less specific as to benefits, since benefits depend on the investment performance of the pension investments (and often on future profits as well).

To the employer, the overriding consideration may be the level of employer contributions. Here, it is the defined contribution arrangement that answers the concern directly. As a percent of payroll (or of profits), the answer is clear. The defined benefit arrangement throws an important degree of uncertainty into future employer contributions. These will depend upon several factors not within the control of the employer.

Investment performance, good or bad, is borne by the employees in the defined contribution arrangement and by the employer in the defined benefit arrangement. In a sense, the employees *own* the assets in the first case, the employer owns the assets in the second case.[7]

In summary, a risk-averse employer may well prefer a defined contribution plan, while a risk-averse employee logically prefers the defined benefit plan. An employer or employee who is optimistic about future investment results and is not risk-averse may have opposite preferences.

(3) *Less Important Differences*—Compared to the primary difference in rationale and to the two immediate consequences first discussed, the other differences sometimes noted are more technical.

(a) The defined contribution arrangement is much simpler, involving little more than a simple allocated savings fund prior to retirement and individual life annuity principles thereafter. Adjustments for early or late retirement, for vested withdrawal prior to retirement, for optional forms of retirement income, are all straightforward. These can become confusing or complicated matters in the usual defined benefit plan. The simpler defined contribution plan may be better understood by all concerned.

(b) Because of the emphasis on the individual employee account, settlement in the form of cash at retirement is often permitted in the profit sharing and thrift forms of defined contribution plans. The tendency for retiring employees to take cash (in preference to a monthly life income) is so strong that many defined contribution plans have only minimal mechanics for life income settlements. Whatever pension possibilities these plans might have are not fully exploited, and they become simply tax sheltered savings vehicles.

(c) The defined contribution rationale leads to a different mix of ancillary benefits than are typically found in defined benefit plans.

- Many believe that it is important for the preretirement death or withdrawal benefit in both plan types to be no less than the accumulation of employee contributions with interest; but the same argument pertains to employer contributions only in the defined contribution plan type.
- Even if the time at which vesting occurs is similar, the vested benefit is likely to be different in the two plan types. The defined contribution vested withdrawal benefit, based as it is on employer contributions to date, will eventually be a higher percentage of the full career benefit than the defined benefit vested benefit, based on pension earned to date. The reverse will be true during the early years of a defined contribution plan, if there were employees with considerable past service when the plan started. There is also some tendency for defined contribution plans to become vested faster, and it is easier to combine vested benefits from two or more employers.[8]

(d) By its very nature the defined contribution plan is *fully funded*, therefore, concern as to the security of employee pension expectations is not the problem that it has proved to be in defined benefit plans. The fully funded nature of the defined contribution arrangement is, of course, the direct result of its nonrecognition of past service. A future-service-only plan of the defined benefit type may well be fully funded too.

(e) Inflation has a different impact on defined contribution and defined benefit plans. A fuller discussion of this matter will be left to a later section.

A Brief History of Defined Contribution Plans

To the author's knowledge, a thorough history of pension plan development has not been attempted. Especially the history before 1950 has not been fully researched. Nonetheless, it is reasonably clear that both defined benefit and defined contribution plans had their beginnings prior to 1900.

The earliest retirement programs were for those in military service, for policemen and firemen, for transportation and other industrial workers and for college and public school teachers. The defined benefit design was the more common, especially in those well established private industries with a substantial number of long-service workers. Whenever the problem was perceived as the orderly retirement of workers already old, the past service feature of the defined benefit plan made it the logical choice. Some employers, however, went the money-purchase route, especially state and local governments, educational, religious and charitable organizations. Whenever the employer was closely tied to a budget, the money-purchase idea was at least considered.

An important development, which in time influenced all pension plans for educators, was the formation of the Teachers Insurance and Annuity Association (TIAA) in 1918. The TIAA offered a fully vested money-purchase arrangement to institutions of higher education. Smaller colleges could join a large multiemployer plan and easily accommodate a teacher moving from one educational institution to another—this proved to be one of TIAA's most attractive features.

Public school teachers were not eligible for TIAA, but in many parts of the country they set up plans of the same general type. Plans for ministers and other churchmen, for employees of other 501(c)(3) organizations and for some classes of public employees tended to follow money-purchase principles. Other public employee plans, especially those covering firemen, policemen and federal employees, adopted the defined benefit approach.

Social Security, initially covering only employees of business and industry, came into being in the late 1930s. In itself a defined benefit plan, Social Security had the effect of encouraging the development of private sector defined benefit plans coordinated or *integrated* with Social Security.[9] Defined benefit plan development had another impetus after 1949 when it became clear that pensions were subject to labor negotiation.[10] Unions then, as now, clearly preferred noncontributory defined benefit plans.

Shortly after World War II, the deferred profit sharing plan made its appearance.[11] Profit sharing plans are necessarily defined contribution, though they have characteristics a little different than those of the older money-purchase arrangement. The concept that the owners might share with the employees the profits of the enterprise caught on, especially when it was realized that the profit sharing idea had pension potential. Plans of this type developed particularly where the enterprise was small, new and not too well established. There were also a few very large and very successful firms that chose the profit sharing route in preference to defined benefit.[12] Others supplemented their already established defined benefit plans with profit sharing.

Still others, especially within the oil industry, established thrift plan supplements to defined benefit pension plans.

It seems likely that the great majority of new defined contribution plans during the 1950s and 1960s were of the profit sharing type and that the average size was small.[13] Nonetheless the sheer number of such plans was very large, and the profit sharing type of defined contribution plan competed vigorously with the defined benefit idea through the period.

The older money-purchase form of defined contribution plan did not grow nearly as fast, yet it held its own in those areas where it had earlier become established. The TIAA came to dominate pensions for college and university teachers, and in 1952 introduced the variable annuity through its companion, College Retirement Equities Fund (CREF). By then, it was recognized that a level pension might well be unsatisfactory in inflationary times. The variable annuity was based on the assumption that common stock performance is positively correlated with inflation, as seemed to be documented by a study of the pre-1950 period.[14]

Since its introduction, the variable annuity has achieved only partial success. A high percentage of TIAA-CREF participants have elected the equity or variable option. Outside of TIAA-CREF, there has been a lot of variable annuity interest, but disappointing growth. Variable annuities would have done better if the stock market had performed as hoped and if certain obstacles to variable annuity marketing had been avoided.[15]

More recent defined contribution history includes: (1) the coming of the so-called tax sheltered annuity; (2) the development of Keogh (H.R.10) plans for the self-employed; (3) the idea of a *target* plan, defined benefit in concept but defined contribution in actual operation; (4) individual retirement accounts (IRAs); and (5) salary reduction or 401(k) plans.

For the moment, we leave this sketch of the history of defined contribution plans in the middle seventies, just after the passage of the 1974 ERISA. In 1977, there were more defined contribution *plans* than defined benefit plans, but more defined benefit plan *participants* than defined contribution plan participants.[16] Statistics to be presented by a later speaker indicate that a majority of defined contribution plans are profit sharing, but that the number of money-purchase pension plans is nonetheless substantial. Keogh plans for the self-employed are likely to be money-purchase plans.

The Impact of Inflation

Both defined benefit and defined contribution forms of retirement programs have proven their worth under stable economic conditions. Since the mid-sixties, however, rates of price inflation, wage inflation and interest have been high and erratic. This section examines the impact of inflationary economic conditions on the two plan types, and analyzes the inflation-adjusting mechanisms built into each. The at-and-before-retirement phases will be studied first, followed by a look at both defined contribution and defined benefit programs after retirement.

Replacement Ratios at Retirement

(1) *Defined Benefit*—The benefit formula under a defined benefit plan typically recognizes both employee compensation and years of service. Though there is great variety in detail, a generalized and simplified formula representing the initial pension benefit at retirement age r under a typical defined benefit plan is:

$$B = K\,(r-e)\,AE$$

Where:

- B is the benefit at retirement.
- K is a constant, usually expressed as a percent, and often in the range from 1 percent to 2.5 percent.
- r is the retirement age.
- e is the age of plan eligibility, usually close to age of hire.
- $r-e$ is then the number of years of eligible (or credited) service at retirement.
- AE is average earnings, some function of the employee's pay history prior to retirement.

It is worth special mention that $r-e$ usually includes years of service prior to the establishment of the defined benefit plan, and AE is typically a simple nonweighted average of pay over the last (or highest) n years prior to age r. In many of the earlier defined benefit plans, n was defined as $r-e$, and AE became the average over the worker's entire career with that employer; but n tended to shorten as inflation became a problem.

The ratio that the benefit at retirement (B) bears to the employee's earnings at the time of retirement (E_r) has come to be known as the replacement ratio (R).

$$R = B/E_r = K\,(r-e)\,AE/E_r$$

It will be seen at once that for an employee with a level pay history $AE = E_r$, and R is proportional to years of eligible service.

Level pay histories are a rarity, however, most exhibit a sharply increasing trend. The earnings of an employee can be thought of as increasing at an annual rate γ, where γ has an individual component (γ_I) related to experience, training or promotion, a productivity component (γ_2) related to nationwide or industrywide gain in real earnings and an inflation component (γ_3).
Clearly, $AE/E_r < 1$ if annual earnings increase with age. The longer the averaging period (n), and the higher the salary increase rate (γ), the smaller the ratio AE/E_r, and the smaller the resulting replacement ratio.

In recent years, there has been a tendency to counteract the deterioration in replacement ratios caused by high values of γ_3 by shortening n. Today, n is seldom longer than five years, it is not uncommon for n to be as short as three years, and in a few cases it has dropped even lower.

Table 1 shows the ratio of average earnings to final earnings for various values of the averaging period n and for various values of the earnings increase rate γ.

Very recently another technique has developed, one that combats the low replacement ratio caused by high values of γ in another way. If earnings are *indexed* by rates of general salary increase before they are averaged, a long averaging period may prove satisfactory. This wage indexing technique has been a feature of the Social Security benefit formula since 1977, and has since spread to a small minority of private defined benefit plans.

(2) *Defined Contribution*—The defined contribution arrangement defines the initial pension benefit *(B)* in terms of: (1) the contributions made by or on behalf of the individual worker; (2) the actual experience as to investment performance; and (3) the assumed mortality table and interest rate employed for the conversion of the employee account into a pension at retirement.[17] It is possible, however, to express the initial pension benefit from a money-purchase arrangement in defined benefit form; in this way, the resulting replacement ratios can be compared. This rather untraditional way of looking at defined contribution mathematics clarifies the main differences between defined contribution and defined benefit arrangements, especially their differing mechanisms for adjusting benefits to inflation.

TABLE 1

Ratio of Average Earnings to Final Earnings in a Defined Benefit Plan *(AE/E_r)*

n	γ = 2%	γ = 4%	γ = 8%	γ = 12%
3	.980	.962	.938	.897
5	.962	.926	.862	.807
10	.916	.844	.725	.633
30	.761	.599	.405	.311

Appendix A demonstrates that the money purchase B can be expressed as:

$$(c/f)(r-a)\ AAE$$

where c/f is a constant, $r-a$ is the years of contributions (taking the place of $r-e$, years of eligible service), and AAE is *average accumulated earnings*.

The substitution of $r-a$ for $r-e$ is important in the early years of the defined contribution plan and reflects the prospective or future service only feature of all pure defined contribution plans. The distinction is meaningful, however, only if the number of eligible service years in defined benefit plans varies systematically from the number of contribution years in defined contribution plans.

Two additional distinctions are found by contrasting AAE with the AE:

(a) The average earnings *(AE)* used by defined benefit plans depend on an averaging period which can be as short as one year or as long as the worker's full career. The average accumulated earnings *(AAE)* implicit in the way defined contribution plans calculate benefits at retirement is invariably based on average earnings over all years of contributions $(r-a)$; for those hired after the defined contribution plan starts, this is the average over a full career.

(b) In computing the AAE, the contribution amounts are accumulated with investment earnings to retirement before the average is calculated.[18] The value of AAE at retirement, therefore, depends on a stream of investment earnings that is uncertain at the time of contribution. The defined contribution replacement ratio derived in Appendix A is stated as: $R = B/E_r = (c/f)(r-a)\ AAE/E_r$. Just as in the defined benefit situation R varies with the ratio of *average* to final earnings. Unlike AE/E, which produces the value of the pension benefit at retirement in a defined benefit plan, AAE/E_r is often greater than 1. Furthermore, AAE/E_r will exceed unity if the rate of return on investment exceeds annual salary growth.

More often than not the defined contribution *average accumulated earnings* will exceed the defined benefit *average earnings*. It will invariably do so if the averaging periods are the same and the yield on investment is positive.[19]

Table 2 exhibits the ratio AAE to E_r, for the same values of γ as in Table 1, for $r-a = 30$, and for several values of the actual investment return δ.

Table A-1 in Appendix A illustrates the replacement ratios for a 10 percent-of-pay defined contribution plan. Note that the replacement ratio varies with the difference between the rate of return on investment and the rate of salary increase. Table A-2 extends Table A-1 by showing percents of final pay per year of contribution.

TABLE 2

Ratio of Average Accumulated Earnings to Final Earnings in a Defined Contribution Plan *(AAE/E_r)*

δ	$\gamma = 2\%$	$\gamma = 4\%$	$\gamma = 8\%$	$\gamma = 12\%$
4%	1.357	1.000	.599	
6	1.881	1.348	.766	.489
8	2.656	1.857	1.000	.609
10	3.811	2.603	1.333	.772
12		3.705	1.812	1.000

(3) *A Comparison*—We have noted that both defined benefit and defined contribution arrangements adjust the benefits at retirement for inflation prior to retirement. Both plans make this adjustment by taking wage inflation into account—this is done through an average of the employee's earnings.

The resulting replacement ratios can be summarized as follows:

	Defined Benefit	**Defined Contribution**
Replacement ratios are:		
Proportional to	K	c/f
Proportional to	$r\text{-}e$	$r\text{-}a$
Proportional to ratio of average to final	AE/E_r	AAE/E_r
Average based on final period	y	$r\text{-}a$
Indexing before averaging?	No	Yes, by investment return

Several other differences, however, have so far been obscured by treating c/f as a constant. The rate of contribution, c, will usually be a constant if the defined contribution plan is a money-purchase plan, but it may not be constant in a thrift plan and will nearly always vary in a profit sharing plan. Moreover, the denominator, f, is the adjustment factor that annuitizes the worker's accumulated pension asset. This factor is a function of: (1) the retirement age; (2) the form of life income chosen; and (3) the mortality table and interest rate assumed. As a result, f may also depend upon: (4) whether the retiree is male or female. Defined contribution retirement ratios are much more sensitive to these matters than are defined benefit ratios, which may reflect (1) and (2), but never (3) or (4). There will be more incentive for an employee to retire late or (more barriers to retiring early) in a defined contribution arrangement. Retirement ratios will be smaller for women than for men. Appendix Table A-3 illustrates the magnitude of the adjustments in defined contribution replacement ratios for these various factors.

Benefit Adjustment After Retirement—Until recently pensions were commonly thought of as level in amount. If prices remain stable, there is no real need for adjustment once the pension has started. Recent experience, however, has demonstrated that prices increase, sometimes at very high rates, and that a level pension rapidly loses its purchasing power under conditions of inflation.

A direct and automatic after-retirement inflation adjustment became a feature of Social Security in 1972; and this was a part of some federal government employee plans even earlier. Although some private plans have expended considerable effort on the inflation problem, they have found it difficult to match the federal government's inflation-adjustment efforts.

We have already noted the development of the variable annuity as early as 1952. Inflation was not much of a problem in the 1950s, and the real reason for introducing the variable annuity may have been the relative attractiveness of investment in common stocks. Still, the variable annuity concept was presented as a solution to after-retirement inflation—a problem that was destined to become much more pressing.

(1) *Defined Benefit*—Private sector defined benefit plans did relatively little about this matter until inflation heated up in the middle sixties. The possibility of automatic adjustment to the consumer price index (CPI) was certainly considered (particularly after the 1972 Social Security Act Amendments). Most plan sponsors considered such adjustment much too expensive, however, especially because employer contributions were already rising to reflect pay inflation prior to retirement.

Increases to pensions that were already in effect were not uncommon, but usually they were provided in some *ad hoc* or nonautomatic manner. Dollars-per-year-of-service plans, commonly negotiated by unions, often extended *improvement* won at the bargaining table to workers already retired. Other plans occasionally granted *catch-up* benefits to retirees. Relatively few defined benefit plans incorporated automatic cost-of-living increases, and there was nearly always a *cap* placed on the percent of increase. A few more adopted the variable annuity principle.

It has been shown that employer contributions as a percent of payroll can be relatively independent of the inflation rate, even though inflation adjustment is carried into retirement years.[20] This occurs, however, *only if* interest rates fully reflect salary inflation and if salaries increase at least as fast as prices. In recent years, interest rates have been extremely high; and defined benefit plans may find it more feasible to adjust pension benefits after retirement than they once did. On the other hand, the same high interest rates have created an economic environment where employees in troubled industries must settle for less rather than more. One would question whether there is much likelihood of significant increases in retired life pensions in the near future.

(2) *Defined Contribution*—The issue of inflation adjustment after retirement is different when viewed from a defined contribution perspective. The possibilities are more limited in one sense, less so in another.

We have seen that the defined benefit plan's ability to handle the problem depends largely on employer willingness to contribute more. However likely this may be in the defined benefit case, this approach is simply inappropriate under the defined contribution rationale. All employer contributions for any given employee have already been made prior to retirement. Thus, in this sense, defined contribution plans are more limited in coping with the after-retirement inflation problem than defined benefit plans.

On the other hand, the well established defined contribution principle that investment earnings belong to the worker or retiree opens up a different possibility. To the extent that the actual rate of investment return (i_x) at any age (x) exceeds the rate of investment return (i) *assumed* in the conversion of the individual account at retirement to pension, the pension for the next period can be larger by the ratio $(1 + i_x)/(1 + i)$. This is simply a restatement of the variable annuity principle introduced by the TIAA-CREF back in 1952, but in today's climate it has a different flavor. Details of the mathematics can be found in Appendix B.

The TIAA has recently introduced a new option for participants reaching retirement age. It differs from the variable annuity still offered by CREF in only one important respect.[21] The underlying assets are fixed-income investment valued at book value rather than common stocks valued at market. The assumed interest rate, as in the CREF variable annuity, is 4 percent.

There is another way of viewing what the TIAA now calls the graded benefit annuity—one that may seem more familiar to those associated with mutual life companies. A *participating* single premium annuity, sold on a 4 percent basis when money can be invested at some higher rate (j), will earn each year an excess interest *dividend* that can be applied to multiply the pension by $(1 + j)/1.04$.

Considering that this is no different than the variable annuity, which has not been very successful and which has been with us for thirty years, the graded benefit annuity seems to have substantial advantages over its predecessor. First, it should produce smooth and rather predictable results, which increase each year at the excess of the yield on already invested longer term fixed-income assets over 4 percent. Second, the return on fixed income investments valued at book value appears to be better correlated with price inflation today than in previous years. The theory that interest rates carry an inflation component continues to gain ground, as the older theory that common stocks are an inflation hedge weakens.[22]

The advent of the graded benefit annuity poses some very interesting questions, because TIAA-CREF participants will find they have the following three-way choice at retirement:

(a) A level annuity calculated at some *participating* interest rate *(i)*. (Today *i* would be 14 percent for recently invested dollars, 12 percent for some older money and 9 percent for money that came to TIAA long ago.)

(b) A graded benefit annuity starting considerably lower but increasing at $(1 + i)/1.04$ per annum.

(c) A variable annuity backed by common stocks, starting at the same level as (b), but increasing (decreasing) as the total return on a portfolio of common stocks exceeds (is less than) 4 percent.

The options available can be illustrated based on assumptions as to future investment performance. Table B-1 in Appendix B illustrates this point.

The dollar amount of the level pension, choice (a), may come as a pleasant surprise. Pension illustrations that the participant has been shown prior to the calculation of the actual *B* may have been based on a considerably lower rate of interest while the actual *B* is based on *i*.

In comparison, the initial pension under choice (b) may be 40 percent to 50 percent lower than for choice (a), but this lower benefit may be expected to cross the level benefit in about seven years and exceed it in accumulated value in seventeen years. Future-oriented persons may like the increasing nature of the choice (b) pension, but those more present-oriented are likely to choose choice (a).

The variable annuity might be the choice of the future-oriented pensioner who believes that equity investment is likely to outperform bonds or mortgages, and who is not too uncomfortable with the rather wide variability in the benefit level.

Recent Developments

Statistics compiled by the Internal Revenue Service (IRS) have for some time indicated that a high proportion of new pension, profit sharing or thrift plans are of the defined contribution type. The pension professionals who have day-to-day contact with plan sponsors observe the same *tilt* toward defined contribution when new plans are being considered. The Pension Benefit Guaranty Corporation (PBGC) and IRS data show that terminating plans are more often defined benefit than defined contribution. It is natural to suppose that to some extent, terminating defined benefit plans are being replaced by defined contribution plans. The Great Atlantic and Pacific Tea Company has publicly announced its intention to discontinue its large defined benefit plan in favor of a new defined contribution plan.

While none of the above is conclusive, it seems quite possible that the tide has turned and that the defined contribution idea may be winning out. This section examines reasons for this apparent trend. Explanations may be found in: (1) the maturing of pension programs; (2) economic uncertainties; and (3) subtle public policy changes. These will be examined below.

The Maturing of Pension Programs—The defined contribution arrangement has suffered from its past inability to recognize employee service prior to plan inception. Many people do not realize that this problem has substantially diminished. Today, the majority of firms that are considering new pension arrangements are relatively new businesses, and their employees have little or no past service. For such firms, the prospective orientation of defined contribution arrangements probably offers more positive than negative potential. Defined contribution plans established years ago have outlived the past-service problem. One good illustration of this is TIAA-CREF. When a defined benefit plan terminates (with benefits for service to date already funded) and a defined contribution plan is substituted for future benefit accumulation, the old defined benefit plan takes care of what would otherwise be a past service problem. In short, the maturing pension movement may resolve the past service problem associated with defined contribution plans.

Economic Uncertainties—In times of economic stability, employers seemed to be more willing to undertake the defined benefit commitment than they are today. Inflation, financial troubles in major industries and disagreements about public economic policy have caused employers to become uneasy with defined benefit plans. Other deterrents include: (1) the growing realization that defined benefit plans do not offer easy solutions to after-retirement inflation problems; and (2) the concern with Social Security's long-range viability.

It is not surprising, therefore, that defined contribution plans have a new attractiveness, particularly from the employer's viewpoint. By limiting the commitment to a fixed percent of payroll or to a percent of profits, the risk-averse employer sleeps better at night and deals more easily with stockholders.

Among labor groups in troubled industries, a new tolerance is developing for profit sharing, which stems in part from the *we are all in this together* attitude. If employees must make wage concessions when profits disappear, they will expect a share of profits when things recover.

Employees also see the high yields available to lenders and recognize that the pension fund earnings must reflect today's high interest rates. The defined contribution plan has a good story to tell the participant, but the typical defined benefit plan does not.

Current economic conditions may be contributing to the apparent trend toward defined contribution arrangements. Perhaps nothing more is going on than the natural tendency to look for new solutions when the older ways are not working well.

Public Policy Changes—This author is not aware of any well formulated pension policy in this country. President Carter's Commission on Pension Policy released a report in 1981 and there are other pieces of what could be a start toward a national pension policy. In this section, we will examine these pieces.

(1) *Employee Retirement Income Security Act*—The comprehensive ERISA legislation of 1974 comes closest to defining present national private pension policy. In its current form, it does not affect public employee plans.

Regulations under the IRS Code prior to ERISA evenhandedly affected defined benefit and defined contribution plans. Differences in tax treatment were minimal and the differences that existed were for practical reasons only. The policy of treating defined benefit and defined contribution plans as evenhandedly as possible was carried forward in the eligibility, disclosure and fiduciary requirements of ERISA.

ERISA's main thrust, however, was focused on different issues. Major aspects of ERISA were intended to respond to public concern over the security of employer-sponsored pensions. Defined benefit plans were the center of this concern, since pension expectations of those participating in these plans arose from the benefits promised, but not necessarily funded. ERISA's final provisions regarding minimum funding, plan termination insurance and contingent employer liability had little or no impact upon defined contribution plans. Congress did not intentionally favor defined contribution plans. It simply realized that such provisions are not applicable to defined contribution plans because these plans are, by nature, fully funded.

Today it is evident that many plan sponsors have found ERISA more difficult to live with under defined benefit plans than under defined contribution plans. It is difficult to assess the magnitude of ERISA's discouraging effect on defined benefit plans, nonetheless the effect—largely unintended—is there.

(2) *The Taxability of Employee Contributions*—Since the first pension plans were developed, the Internal Revenue Code (IRC) has treated employee

contributions to qualified pension plans less favorably than employer contributions. This difference has been considered a deterrent to contributory pension plans and is one reason why most defined benefit plans are noncontributory.

Profit sharing plans are typically noncontributory, while money-purchase and thrift-savings defined contribution plans are typically contributory. It is reasonable to assume that the tax treatment of employee contributions hurts rather than helps defined contribution plans.

In recent years, however, various changes in the income tax law have had the effect of treating some kinds of what are essentially employee contributions as if they were made by the employer. This more favorable tax treatment is now possible subject to certain limitations, for voluntary contributions under any qualified pension plan, H.R. 10 plans, tax sheltered annuities, IRAs and salary reduction plans.

The erosion of the principle that employee contributions are not *tax effective* has had some bearing on the defined benefit and defined contribution issue. It has encouraged employee participation and it has had some impact on encouraging defined contribution plan growth. Employee contributions necessarily give rise to an individually allocated investment account and encourage the employee to think in investment terms.

Of particular concern to those who feel that small defined benefit plans may have suffered a mortal blow is the IRA, introduced initially as a part of ERISA, but widely extended in 1981. Imagine this scenario:

(a) A small employer who is considering establishment of a defined benefit plan is hesitant because of the red tape and other difficulties associated with qualification rules and ERISA.

(b) Most of the advantages of offering employees a pension program can be achieved, without suffering the disadvantages noted above, by the imaginative use of employer-encouraged IRAs.

(c) To those employees whose service is particularly valued (not necessarily all employees), the employer offers a raise in cash pay, commensurate with what might otherwise be contributed to a qualified pension plan.

(d) Employees are then encouraged to put the extra compensation into IRAs.

(e) The employer may receive credit for setting up a pension program, and employees may be happier with their increased control over their own pension plans. Yet the arrangement is the ultimate in simplicity and the administrative difficulties are nil.

This discussion is not meant to suggest that Congress intended IRAs to have any adverse effect on formal retirement plans in general or on defined benefit plans in particular. The original IRA provisions responded to complaints from those who were not eligible for the tax advantages of employer-sponsored pension plans. The 1981 Economic Recovery Tax Act extended IRA eligibility to all workers regardless of whether they were covered by an employer-sponsored retirement program. This was an attempt by the present Administration to get Americans to save more and spend less.

(3) *Sex Discrimination Issues*—An unresolved issue arises from a series of court cases charging unlawful sex discrimination in employee pension plans. The cases present: (1) minor problems for defined benefit pension plans; (2) essentially no problems for profit sharing and thrift plans; and (3) practical and philosophical problems for money-purchase pension plans .

Since the primary pension benefit is the same for males and females, sex discrimination is not likely to become a vital matter in defined benefit plans. Sex discrimination could become an issue in defined benefit plans if: (1) they provide earlier *normal retirement ages* for women;[23] (2) they require higher employee contributions from women;[24] or (3) if the optional forms of retirement income, especially those of the joint and survivor type, are based on sex-distinct mortality tables. It can also be argued that defined benefit plans discriminate against men, since a larger proportion of the employer contribution goes to females who, on average, live longer. However, this position has not yet been—and may never be—advanced seriously. The equal benefit criteria within defined benefit plans seems to be well accepted; at most, the sex discrimination issue is a troublesome detail in a defined benefit context.

The sex discrimination issue is even less significant in profit sharing or thrift-savings defined contribution plans. The rationale behind all defined contribution plans insures that both employer and employee contributions will be independent of gender. The typical form of profit sharing or thrift plan settlement at death, withdrawal or retirement takes the form of cash or an annuity that does not involve life contingencies and that offers gender independent benefits. It seems likely that the plan could offer as an *option* a sex-differentiated life income settlement in lieu of cash. In this case, however, it might be safer from a legal viewpoint if the life income annuity were purchased outside.

The real impact of the sex discrimination matter falls upon the money-purchase defined contribution pension plan. Because defined contribution plans define equity according to the principle of benefits which have *equal value*, and because women have longer life expectancies than men, a money-purchase plan generally employs sex-distinct mortality tables for converting cash at retirement to lifelong income. Depending somewhat on retirement age, the interest rate and the form of annuity, pensions for female retirees are likely to be 85 to 90 percent of those for men.

The essence of the unresolved controversy is whether the defined contribution *benefits of equal value* concept can survive in the context of an employee benefit program. One point of view is that unequal benefits for males and females in defined contribution plans is no more discriminatory than unequal employer contributions in defined benefit plans. This viewpoint has been urged by the insurance industry and accepted by some portions of the United States Government Executive Branch.

The alternative viewpoint is that sex-differentiated pension benefits are contrary to federal legislation. This appears to be the position of the Equal Employment Opportunity Commission (EEOC), and this viewpoint has so far prevailed in several cases which are still in the lower courts. No defined contribution case has been decided at the Supreme Court level.[25] If unequal pension benefits under defined contribution plans are eventually determined to be unlawful, money-purchase plans will have two apparent options:

(a) They could adopt unisex tables, and thereby undercut the defined contribution principles on which these plans have operated successfully for so long.

(b) They could adopt cash as the primary form of settlement at retirement—leaving an outside agency with the job of selling life annuities to retirees who prefer this pension agreement.

Since neither of these alternatives is particularly attractive, the sex discrimination issue is troublesome, but only for the money-purchase form of defined contribution plan.

(4) *Lump-Sum Versus Life Income Distributions*—As noted earlier, defined benefit plans ordinarily provide life income or pension benefits, whereas many kinds of defined contribution plans provide lump-sum or annuity-certain benefits. If public policy favors life income distributions over lump-sum distributions or vice versa, it will impact on the defined benefit versus defined contribution issue.

At one time, lump-sum distributions from qualified plans were taxed as capital gains, while life-income distributions have always been taxed as ordinary income. This treatment led some high-income retirees to take lump sums if the plan permitted. It also led some plans, which otherwise may have refused cash options, to grant such options.

Taxing lump-sum distributions at normal income tax rates would encourage the opposite effect, since concentrating the distribution into one or more years would push the taxpayer into a higher tax bracket. Public policy could encourage life income settlements by letting normal tax rates prevail.

This has not, however, been the situation. Although the law was changed in 1974 to phase out capital gains treatment of lump-sum distributions, an income-averaging approach was substituted. This effectively eliminated any lump-sum distribution tax disadvantages. In short, public policy encouraging lifetime distributions over lump sums does not seem to currently exist.

(5) *Defined Benefit and Defined Contribution Combinations*—Defined benefit and defined contribution plans have never been entirely independent of each other. Thrift plans are sometimes installed where defined benefit plans already exist, and profit sharing plans sometimes supplement defined benefit plans. In earlier times, a money-purchase pension plan was occasionally supplemented by a defined benefit plan which covered only past service.

Aside from these older combinations, there are at least two other combination arrangements with some following today. The first of these is predominantly a defined contribution plan, but with a defined benefit floor. For most workers, the defined contribution plan is expected to provide adequate benefits; but in this case, the worker is assured that the pension benefit will not fall below a predetermined level. Jeffrey Furnish has suggested that the employer may get some relief from ERISA's minimum defined benefit plan funding requirements, if the potential defined contribution benefit can be offset.[26]

The second is a straightforward defined benefit plan that has after-retirement participation characteristics which are similar to defined contribution arrangements. If the employer chooses to pass after-retirement gains from higher-than-assumed investment performance on to retirees, a pension similar to the TIAA graded benefit annuity can be provided.[27]

(6) *A New Emphasis on Investment Performance*—The investment aspect of retirement planning has always been important, and the competition among funding media based on investment performance has always been intense. In the past, however, pension consultants, insurance companies and others serving the pension market devoted much of their effort toward plan design, plan administration and defined benefit plan cost estimation. In recent years, these matters have lost importance.

Competition based on investment performance is rampant in all segments of the pension marketplace, but it takes on a special flavor in defined contribution arrangements. Unallocated defined benefit pension funds are successfully served by either separate or pooled accounts in banks or insurance companies, and they operate successfully on either book or market value principles. Defined contribution plans, with their large numbers of individual accounts, present a different problem. At times when long-term interest rates are fluctuating and short and long rates have rapidly changing relationships with each other, it is difficult to work out a satisfactory method of interest performance allocation.[28]

At the moment, savings and loan organizations, banks and insurance companies are competing for IRA money with dramatically high interest rates illustrated over a long period. However, the rates are guaranteed for only a short period, if at all. Other defined contribution arrangements have similar problems. If defined contribution plan participants are to be well served, some important difficulties in investment performance allocation must be solved.

Conclusion

The preceding sections have been confined to history and fact. In this final section, however, the author takes leeway to present his own views and to make suggestions regarding public pension policy developments.

From the author's perspective, both defined benefit and defined contribution plans are legitimate and proven approaches to the important but sometimes difficult problem of providing adequate retirement incomes to American workers. Each approach has its strengths and weaknesses. Neither type will ever provide a *perfect* retirement program.

Those who believe that both defined benefit and defined contribution approaches should be free to develop in their own way, under a benign and impartial public policy, should expect changes in the relative attractiveness of the two types. These changes will occur as the public responds to its own perceptions of what makes the best sense in the ever-changing demographic and economic environment. Governmental intrusions that influence the result are to be deplored, however, if one believes that each plan has a place and that public policy should be essentially neutral.

A combination of events, including the uncertainty of current day economics, ERISA's focus on security of employee pension benefits, changes in tax treatment of employee contributions and maturing of the pension movement, have tipped the balance to favor the defined contribution approach. Among the larger employee groups, the defined benefit approach is well enough entrenched that defined benefit plans will remain dominant, although a few large and important defined benefit plans may adopt defined contribution characteristics. Newly created plans, however, may be predominantly defined contribution, and they may be more often profit sharing than money purchase.

The author is concerned about the lack of effective life income distribution systems in many current defined contribution plans. Although defined contribution plans *can* provide a solution to the *loss-of-income-at-retirement* problem, too few defined contribution plans have even tried to accomplish this to date. Lump-sum or annuity-certain distributions may seem attractive at first glance, but they will not solve retirees' financial problems.

It is worth noting that those promoting IRAs, profit sharing, thrift and H.R. 10 plans emphasize only two ideas: (1) the favorable tax treatment which these plans enjoy; and (2) the high rate of possible investment return. With this emphasis, the purpose of the concept has changed from interest in a good retirement income solution to interest in a high-yield, tax sheltered savings arrangement. In the author's view, public policy should deliberately encourage the development of plans that strive to provide adequate pensions for retirees; but there is little legitimate public interest in tax deferral for its own sake.

As indicated earlier, the author does not see that a consistent public policy has developed in this country. Yet, a consistent policy is necessary. As a start toward such policy development, the author offers the following five-point policy statement:

(1) Retirement plans supplementing social insurance are in the public interest and should be encouraged.

(2) Retirement plans that deserve public support include those sponsored by a private or governmental employer and those that the individual worker arranges for himself and his family.

(3) Any retirement plan without well designed retirement income features is merely a savings or investment arrangement and has no claim to public support.

(4) Defined benefit and defined contribution retirement plans are recognized as necessarily different, but both are in the public interest. Public policy should, therefore, be neutral as it affects these plans. Subject to point (3) above, the development of both defined benefit and defined contribution plans should be encouraged.

(5) Public policy should support any reasonable means of lessening the impact of inflation on the financial well-being of retirees.

There are basically two approaches that can be taken to implement such public policy. One of these would *require* employers to contribute toward employee pension plans, or it would require employees to contribute toward their own retirement. The author views this compulsory approach as appropriate for social insurance but not for arrangements outside of Social Security.

The other approach would implement public policy through IRC provisions. This route has a long and reasonably successful history; it will no doubt continue to be the primary means for achieving public objectives in the pension area.

In examining the current structure of the federal income tax treatment of retirement plans, there are at least two areas where current law conflicts with the points enumerated above and where improvement can be sought.

(a) With regard to tax treatment, employer contributions have been treated much more favorably than employee contributions to pension plans. If this distinction were abandoned—it has already been obscured by recent actions treating several kinds of *voluntary* employee contributions similar to the contributions of employers—equity would be gained in the tax treatment of contributory and noncontributory plans, defined benefit and defined contribution plans and employer-sponsored plans and IRAs. It may then become possible to simplify the limits on the deferral of current income.

(b) Today's tax treatment does not distinguish between the retirement plans described in the first two points noted above and the savings plans that do not incorporate retirement income features, which were described in the third point. At the very least, lump-sum distributions from tax-favored plans should be taxed at full income tax rates and income-averaging should not be permitted. This author would also support a requirement that all tax-favored plans offer life income settlements; and if there is a spouse, the extension of ERISA's joint and survivor provision should be considered the normal form. These two suggestions are not intended to eliminate lump-sum or annuity-certain settlements, but they are intended to encourage the use of various life income forms.

The author believes that the IRC changes suggested above would contribute substantially to the establishment of a rational retirement income public policy. However, two actions related to other forms of government intervention—different from tax policies—must be considered.

(c) In line with point (4), it is important for public policy to recognize that defined contribution plans, which provide larger pension benefits for men, base such benefits on a different but equally valid individual equity principle. Hence, these plans are *not* guilty of sex discrimination. Today, this unresolved matter is a troublesome issue only for money-purchase plans; however, it would become vital to *all* defined contribution plans if item (b) above is adopted.

(d) One of the best methods for attaining the goal suggested in point (5) may be through the imaginative use of investment policy for the assets backing the benefits that are payable to retirees. The Security and Exchange Commission administers certain laws designed to protect the investor against unscrupulous security *peddlers*, but public policy will not be well served if these laws inhibit sound solutions to the after-retirement inflation problem.

If interest rates do rise and fall with inflation rates, the participating life annuity may help to resolve the after-retirement inflation problem in both defined benefit and defined contribution pensions. For defined benefit plans, the challenge is to get employers to pass investment earnings in excess of some noninflationary rate (such as 4 percent) on to retirees. For defined contribution plans, the first challenge is to get retirees to forego cash. The second challenge is to convince retirees that a pension benefit which is initially lower, but which increases over time, is a better solution to their after-retirement inflation problem.

Appendix A
Replacement Ratios Under a Money-Purchase Pension Plan

Let c = a constant rate of contribution (employer and employee combined);

a = the age at which contributions commence;

r = the retirement age;

x = the worker's age $(a \leq x < r)$;

$E(x)$ = the worker's rate of earnings at age x;

γ_x = the rate of change in earnings at age x = $d \log E(x)/dx$;

δ_x = the force of investment return at age x;

f = the adjustment factor by which the worker's accumulated pension asset is annuitized at age r, based on an assumed mortality table and an assumed rate of investment return.

Assume that earnings, contributions thereon and pension payments are payable continuously.

The accumulation of contributions at retirement, then, is:

$$V = c \int_a^r E(x) e^{\int_x^r \delta_y \, dy} dx$$

The pension benefit commencing at retirement,then, is:

$$B = V/f = c/f \int_a^r E(x) e^{\int_x^r \delta_y \, dy} dx$$

$$= c/f \, (r-a) \int_a^r \frac{E(x) e^{\int_x^r \delta_y \, dy} dx}{r-a}$$

$$= c/f \cdot (r-a) \cdot \textit{Average Accumulated Earnings (AAE)}$$

The replacement ratio at retirement is:

$$R = B/E_r = (c/f)E_r \int_a^r E(x) e^{\int_x^r \delta_y \, dy} dx$$

$$-\int_x^r \gamma_y \, dy$$

but since:

$$E(x) = E_r \, e^{\int_x^r (\delta_y - \gamma_y)\, dy}$$

$$R = (c/f) \int_a^r e^{\int_x^r (\delta_y - \gamma_y)\, dy} \, dx$$

$$= (c/f) \cdot \overline{S}_{\delta-\gamma,\, r-a}$$

Where $\overline{S}_{\delta-\gamma,\, r-a}$ is the accumulation of a continuous annuity for $r-a$ years at the continually varying force of interest $(\delta-\gamma)_x$.
For purposes of illustration, we can replace the varying force $(\delta-\gamma)_x$ by a mean force $\overline{\delta-\gamma}$ as follows:

Let:

$$\int_a^r e^{\int_x^r (\delta_y - \gamma_y)\, dy} \, dx = \int_a^r e^{\int_x^r \overline{\delta - \gamma}\, dy} \, dx$$

$$= \frac{e^{\overline{\delta-\gamma}\,(r-a)} - 1}{\overline{\delta-\gamma}} = S_{\overline{\delta-\gamma},\, r-a}$$

In computing $\overline{\delta-\gamma}$, it should be noted that the values of $\overline{(\delta-\gamma)_x}$ at the various ages will be weighted in proportion to $\overline{S}_{x-a}$, and hence that $(\delta-\gamma)_x$ at ages close to r will have considerably more leverage than those near a.

Illustration

Table A-1 illustrates replacement ratios for years of contribution 40, 30, 20 and 10, and for $\overline{\delta-\gamma}$ (expressed as an effective annual rate) of 6%, 4%, 2%, 0% and −2%. In Table A-1, $c=.10$, $f=10.67$ (computed on a continuous life annuity basis), $r=65$, the assumed rate of return on investment is .04 and mortality is based on the GA 71(Male) Table.

TABLE A-1

Replacement Ratios

	$(e^{\overline{\delta-\gamma}} - 1)$				
(r − a)	**.06**	**.04**	**.02**	**.00**	**−.02**
40	149%	91%	57%	37%	26%
30	76	54	38	28	21
20	35	28	23	19	15
10	13	11	10	9	8

Table A-2 illustrates values of $R/(r-a)$ that can be interpreted as the percent of final pay per year of contribution derived from replacement ratios in Table A-1.

Table A-3 illustrates other values of f for retirement ages 62, 65 and 70; for assumed rates of return on investment equal to .04, .08 and .12; for males and females; and for a joint and survivor M65-F62 in addition to the straight life. The ratios labelled $10.67/f$ then represent the factor by which Table A-1 results can be multiplied to adjust for differences in the value of f.

TABLE A-2

Replacement Ratios/$(r-a)$

	$(e_{\overline{\delta-\gamma}} - 1)$				
$(r-a)$	.06	.04	.02	.00	−.02
40	3.7%	2.3%	1.4%	0.9%	0.60%
30	2.5	1.8	1.3	0.9	0.70
20	1.8	1.4	1.1	0.9	0.80
10	1.3	1.1	1.0	0.9	0.85

TABLE A-3

Demonstration of the Effect of Changes in the Adjustment Factors

Assumed Rate of Return on Investment	Sex	Retirement Age (r)	Straight Life		Joint and Survivor M65-F62	
			f	10.67/*f*	*f*	10.67/*f*
.04	M	62	11.560	.92		
		65	10.670	1.00	15.160	.70
		70	8.893	1.20		
	F	62	13.930	.77		
		65	12.820	.83	10.600	1.01
		70	10.840	.98		
.08	M	62	8.716	1.22		
		65	8.101	1.32	8.006	1.33
		70	7.019	1.53		
	F	62	9.892	1.08		
		65	9.335	1.14		
		70	8.242	1.29		
.12	M	62	6.864	1.55		
		65	6.484	1.65		
		70	5.775	1.85		
	F	62	7.567	1.41		
		65	7.257	1.47		
		70	6.597	1.62		

Appendix B
Pension Benefit Varying with Investment Performance

Let r = the retirement age;

δ_x = the rate of return on investment at age x $(x \geq r)$;

f = the adjustment factor by which the worker's accumulated pension asset is annuitized at age r, based on an assumed mortality table and an assumed rate of investment return, i $(\delta = \log(1+i))$;

$V(r)$ = the accumulation of contributions and interest at age r;

$B(x)$ = the pension benefit payable at age x $(x \geq r)$;

$V(x)$ = $B(x) \cdot f$ = the value at age x of a level continuous life annuity in amount $B(x)$;

$A(x)$ = the assets supporting the reserve $V(x)$.

Note that $d \log f/dy = (1/f)[f \cdot (M_y + \delta) - 1]$

$$= M_y + \delta - (1/f);$$

where M_y = the expected rate of reserve released by death at age y;

δ = the actual rate of interest on the reserve; and

$1/f$ = the rate the reserve is paid out at age y.

Now assume that the actual rate of return on the investment $A(y)$ is δ_y, and the rate of reserve released is in accordance with the mortality table. If δ_y does not equal the actuarial assumed rate δ, the excess return on investment $[(\delta_y - \delta) A(y)\, dy]$ remains within $A(y)+dy$ to support additional pensions.

$$\frac{d \log A(y)}{dy} = \frac{d \log f}{dy} + \delta_y - \delta$$

and since $V(y) = B(y) \cdot f$

$$\frac{d \log A(y)}{dy} = \frac{d \log V(y)}{dy} = \frac{d \log f}{dy} + \frac{d \log B(y)}{dy}$$

It follows that $\frac{d \log B(y)}{dy} = \delta_y - \delta$, and that $B(y) = e^{\int(\delta_y - \delta)\, dy}$

Integrating on y from r to x: $B(x) = B(r)\, e^{\int_r^x (\delta_y - \delta)\, dy}$

For purposes of illustration, we can replace the varying force δ_x by a mean force $\bar{\delta}_x$ as follows:

$$\text{Let: } e^{\int_r^x (\delta_y - \delta)\, dy} = e^{\int_r^x (\bar{\delta}_x - \delta)\, dy}$$

$$\int_r^x \delta_y \, dy = \bar{\delta}_x \int_r^x dy$$

$$\bar{\delta}_x = \frac{\int_r^x \delta_y \, dy}{\int_r^x dy} = \text{the average } \delta_y \textit{ over the years } r \leq y \leq x$$

Illustration

Table B-1 illustrates the values of $B(x)$ for three different values of $\bar{\delta}_x$ (assumed to be constant over all x) and three values of δ. $V(65)$ is assumed to be 10670, so that $B(65)$ is 1000 when $f(\delta, x) = f(.04, 65) = 10.67$, 1317 when $f(.08, 65) = 8.101$, and 1646 when $f(.04, 65) = 6.484$.

TABLE B-1

Benefit at Age x = *[B(x)]*

$e^{\bar{\delta}_x} - 1$	(1) .04	(2) .04	(3) .04	(4) .08	(5) .08	(6) .08	(7) .12	(8) .12	(9) .12
$e^{\delta} - 1$	.04	.08	.12	.04	.08	.12	.04	.08	.12
Age x									
65	1000	1317	1646	1000	1317	1646	1000	1317	1646
70	1000	1090	1136	1208	1317	1372	1449	1580	1646
75	1000	903	784	1325	1317	1144	2098	1895	1646
80	1000	748	542	1761	1317	954	3039	2273	1646
85	1000	619	374	2127	1321	795	4402	2726	1646
90	1000	512	258	2569	1321	663	6377	3270	1646
95	1000	425	178	3103	1321	553	9237	3922	1646
100	1000	351	123	3747	1317	461	13380	4703	1646

Note: Columns (1), (5) and (9) illustrate level pensions ($\bar{\delta}_x = \delta$);
(4), (7) and (8) illustrate increasing pensions ($\bar{\delta}_x > \delta$);
(2), (3) and (6) illustrate decreasing pensions ($\bar{\delta}_x < \delta$);

Notes

1. A Labor Department study indicates that there were 34.2 million participants in *private* employee defined benefit plans in 1977 but only 15.5 million in defined contribution. The proportion of *government* workers covered by defined benefit plans is likely to be considerably higher than 68 percent.
2. The "defined contribution" terminology was first suggested by a task force representing the American Risk and Insurance Association and the Pension Research Council. Because the term was used by the drafters of the Employee Retirement Income Security Act (ERISA), it has become an established part of pension terminology.
3. Even a plan that the worker sets up for himself can be viewed as an employee benefit plan, since the contributions thereto come indirectly from the employer. Employer and employee contributions to pension arrangements have somewhat different characteristics, but they are not greatly different in economic effect.
4. This objective seems to be secondary in the less pension-related forms of defined contribution.
5. Everett T. Allen, Jr., Joseph J. Melone and Jerry S. Rosenbloom, *Pension Planning*, 4th Ed. (Homewood: Richard D. Irwin, Inc., 1981), pp. 62–98; Dan M. McGill, *Fundamentals of Private Pensions*, 3rd Ed. (Homewood: Richard D. Irwin, Inc., 1975), pp. 92–112.
6. C. L. Trowbridge, "Insurance as a Transfer Mechanism," *Journal of Risk and Insurance* 41 (1974).
7. Technically, a trust or an insurance company is the legal owner of the pension assets. It is the investment performance of the assets that is *owned* by the employer in defined benefit plans, by the employee in defined contribution plans.
8. ERISA requirements as to vesting are essentially the same; but more defined contribution than defined benefit plans vest earlier than the law requires.
9. Social Security appears to define benefits *and* contributions, and hence to be both defined benefit and defined contribution. It is the absence of any connection between individual contributions and individual benefits that throws Social Security to the defined benefit side of the dividing line.
10. In the *Inland Steel* case, the U.S. Supreme Court determined that pensions are a form of wages and hence subject to union bargaining.
11. Profit sharing in the form of cash bonus or distribution of stock developed earlier. The date of the first *deferred* profit sharing plan is unknown to the writer and may well have been prior to World War II.
12. Among these, the Sears and Roebuck profit sharing plan may be the best known.
13. The Labor Department study referred to above in Note 1 shows 319,000 defined contribution plans in 1977 and only 132,000 defined benefit plans. The average number of participants per plan seems to be about 50 for defined contribution, 250 for defined benefit.
14. Robert M. Duncan, "A Retirement System Granting Unit Annuities and Investing in Equities," *Transactions of the Society of Actuaries* 4 (1952): 317–344.
15. Variable annuities were eventually determined to be *securities* and, hence, subject to Security and Exchange Commission rules.
16. See Notes 1 and 13.
17. A defined contribution plan does not really define benefits, because defined contribution *defines* the pensions in terms of unspecified parameters.
18. The average accumulated earnings depend importantly upon actual investment earnings. It is essentially this dependence that keeps the B_r in a defined contribution plan *undefined*.
19. Negative investment yields over short time periods can and do occur when pension funds are invested in common stocks.

20. Glen D. Allison and Howard E. Winklevoss, "The Interrelationships Among Inflation Rates, Salary Rates, Interest Rates, and Pension Costs," *Transactions of the Society of Actuaries* 27 (1975):197–210.
21. There is technically another difference. The CREF variable annuity varies with mortality experience as well as investment performance.
22. The belief that interest rates vary with inflation (or perhaps with expectations about inflation) seems to have been borne out by actual experience since the middle 1960s.
23. Earlier retirement for women was once common in defined benefit plans but has practically disappeared.
24. Higher employee contributions from women have never been common; but see Note 25 below.
25. In the *Manhart* case, the U.S. Supreme Court ruled that higher employee contributions from women were not lawful in a defined benefit plan.
26. Jeffrey J. Furnish, "Pension Plans in an Inflationary Environment," *Transactions of the Society of Actuaries* 34 (1982).
27. The Rockefeller Foundation has been a source of publicity about this concept.
28. The market-value-based methods used by mutual funds and life company equity separate accounts work well when the investor expects his account to vary with the stock market. When the underlying assets are in fixed income assets (bonds or mortgages), the investor is not pleased by market value swings; but attempts to distribute investment income according to book value principles generate problems of their own. The *investment year* methods used by life companies for defined benefit plans are likely to be too complicated for use on small individual accounts.

Discussion

MR. SEIDMAN: If I understand your paper, you make a very sharp distinction between defined benefit and defined contribution plans. I have the feeling that many of the collectively bargained plans, particularly Taft-Hartley plans, have many of the attributes of both defined benefit and defined contribution plans.

MR. TROWBRIDGE: There are certain plans that seem to define both benefits and contributions. As a matter of fact, Social Security seems to define them both. I view plans that specify both benefits and contributions at the same time as defined benefit plans and not defined contribution plans.

A defined contribution plan is always one where the contributions on behalf of any individual are defined and put into a separate account for that particular person. Since Social Security and the plans you are thinking of do not provide individual accounts, both are defined benefit plans. I do make a sharp distinction.

MR. RASKIN: You said the defined benefit plans provide equal benefits, yet many defined benefit plans provide what appear to be unequal benefits, because they may provide an early retirement window or more lucrative benefits for the person who applies early. Flat-dollar and career-average plans provide different real levels of income, at different times, to different generations of retirees. How does that fit in?

MR. TROWBRIDGE: People in equal circumstances have equal benefits. A defined benefit plan nearly always recognizes pay and service. People with equal pay and service histories get equal benefits. That is the principle. They are not necessarily equal in dollars, but that is quite different from the general principle of the defined contribution plan where there is no equality of benefits at all. The benefits just come out wherever they come out.

MR. GRIBBIN: You mention in your paper that the defined contribution plan should be encouraged to have life annuity distribution systems. Do you have any comments on how you would resolve the sex-distinct mortality issue in defined contribution plans which would require some type of a life distribution system?

MR. TROWBRIDGE: I have no trouble with it myself. Defined contribution plans should operate as defined contribution plans and, therefore, females get less benefits than males in defined contribution plans when a life annuity is purchased.

I realize the courts may be against me on that. If the Supreme Court eventually comes down on the fact that defined contribution plans have to use defined benefit principles with respect to the difference between the sexes, then defined contribution plans with life income settlements are going to have a hard time. If it does rule that way, then defined contribution plans probably cannot very satisfactorily have life income settlements.

MR. COWLES: One further complication occurs where you give investment options to the employee. Even if you were to differentiate the contribution rate on account of sex, the different investment experience for different individuals could disrupt it at the end line.

MR. TROWBRIDGE: Yes, defined contribution plans can very nicely give the employee a lot of choice as to what investment vehicle to use. Certainly, those who use one vehicle are going to come out differently from those who use another vehicle. There is no way you are going to get the benefits to be equal in such a defined contribution plan.

MR. WHITE: Mr. Trowbridge, you suggest that it is possible to provide some inflation protection under defined contribution plans. Could you elaborate on how that might be done?

MR. TROWBRIDGE: Yes, it is through the general concept of a participating annuity. If we start out the annuity for any participant on the assumption that interest is going to be at some noninflationary rate (4 percent), and the fund actually earns some higher rate (10 percent), then it mathematically follows that the initial annuity payment can increase each year by almost 5.5 percent. Under the defined contribution plan principle, where the extra interest earned goes to the retiree, the pension is indexed. There are illustrations of this in my paper.

Notice that the whole thing hangs on the general concept that in inflationary times interest rates are high. If you believe that in inflationary times interest rates are high and will stay high, you will find a very, very neat solution to the inflation problem. For a long time this has been done with the variable annuity, except that the original variable annuity principle was based on the performance of the stock market.

MR. WILLARD: I assume from a statement in your paper which says "public policy should support any reasonable means of lessening the impact of inflation on the financial well-being of retirees," that the so-called graded benefit is one such reasonable means. Is there some question in your mind as to whether a variable annuity is a reasonable means? Can you tell us any other ways that you think would be reasonable?

MR. TROWBRIDGE: Well, I do not have anything specific in mind; but I think that in order to handle the problem of inflation after retirement, we are going to have to use some imaginative ways of investing pension money. In the past, public policy has put some obstacles in the way of this. In the future, policymakers should avoid imposing such barriers.

MR. WILLARD: Would you consider a fully indexed benefit under a defined benefit plan as a reasonable means?

MR. TROWBRIDGE: Sure, it is a fine method if employers will do it. I have no objection to it whatsoever. The difficulty is simply that most employers cannot afford it.

Profit Sharing: Philosophy and Features

Walter Holan
Bert L. Metzger

Interrelationship Between Social Security and Private Retirement Income Plans

President Carter's Commission on Pension Policy reaffirmed the role of Social Security as a *floor* of retirement income protection. The Commission emphasized that Social Security should be supplemented by private pension, profit sharing, thrift and individual retirement account (IRA) plans.

Social Security, a pay-as-you-go transfer system, has achieved broad coverage but provides neither advance-funded benefits nor capital resources for investment. Social Security is beset by its own financial problems and is ill equipped to carry the full retirement income load in American society.

If diversification of investments and diversification of money managers makes sense in the prudent handling of assets, it would seem that diversification of retirement income resources in this country should be preserved. Private retirement plans play a major role as advance-funded programs with benefit accrual for participants during employment. Private plans also contribute significantly to capital markets.

Philosophy of Profit Sharing

Profit sharing is any procedure where an employer pays special current or deferred amounts to employees based on the profits of the business. These amounts are subject to reasonable eligibility rules and prevailing rates of pay. Profit sharing has also been described as a method for raising productivity and lowering costs through employer and employee cooperation. This is accomplished through the direct participation of employees (in addition to their regular wage) in the socioeconomic success of the enterprise. Profit sharing is an *organizational incentive* which recognizes the importance of people, as well as technology, in the productivity equation.

These plans are established for various reasons. Companies may establish profit sharing principally as an incentive system or principally as a retirement income system. These plans may act as sources of periodic cash payments, savings and capital accumulation plans and reservoirs to provide workers with loans or partial cash withdrawals during employment. Profit sharing means that employees psychologically and financially participate in the life, work and rewards of the enterprise.

Growth, Extent and Versatility of Profit Sharing

Spurred in part by favorable *incentive taxation* and wartime wage controls, deferred profit sharing plans began to increase in numbers during the 1939–1944 period. From 1944 through 1974, the number of deferred profit sharing plans doubled every five years. Figure 1 reflects the considerable increase in pensions (both defined benefit and money purchase) and profit sharing plans (including stock bonus plans) in the years between 1939 and 1981.

A slowdown in new plan creations and an increase in plan terminations took place in the years immediately following enactment of the 1974 Employee Retirement Income Security Act (ERISA). A major turnaround occurred in the 1978 to 1981 period, and approvals of both pensions and profit sharing plans hit record levels in 1981.

Tables 1 and 2 reveal the prevalence of profit sharing, stock bonus, money-purchase and defined benefit pensions numerically and as a percentage of the total. As of December 31, 1981, 45.7 percent of the plans were profit sharing, .7 percent were stock bonus, 29 percent were money-purchase pensions and 24.6 percent were defined benefit pension plans.

This data surprises many people in the field because:

(1) money-purchase pension plans are more prevalent than expected;

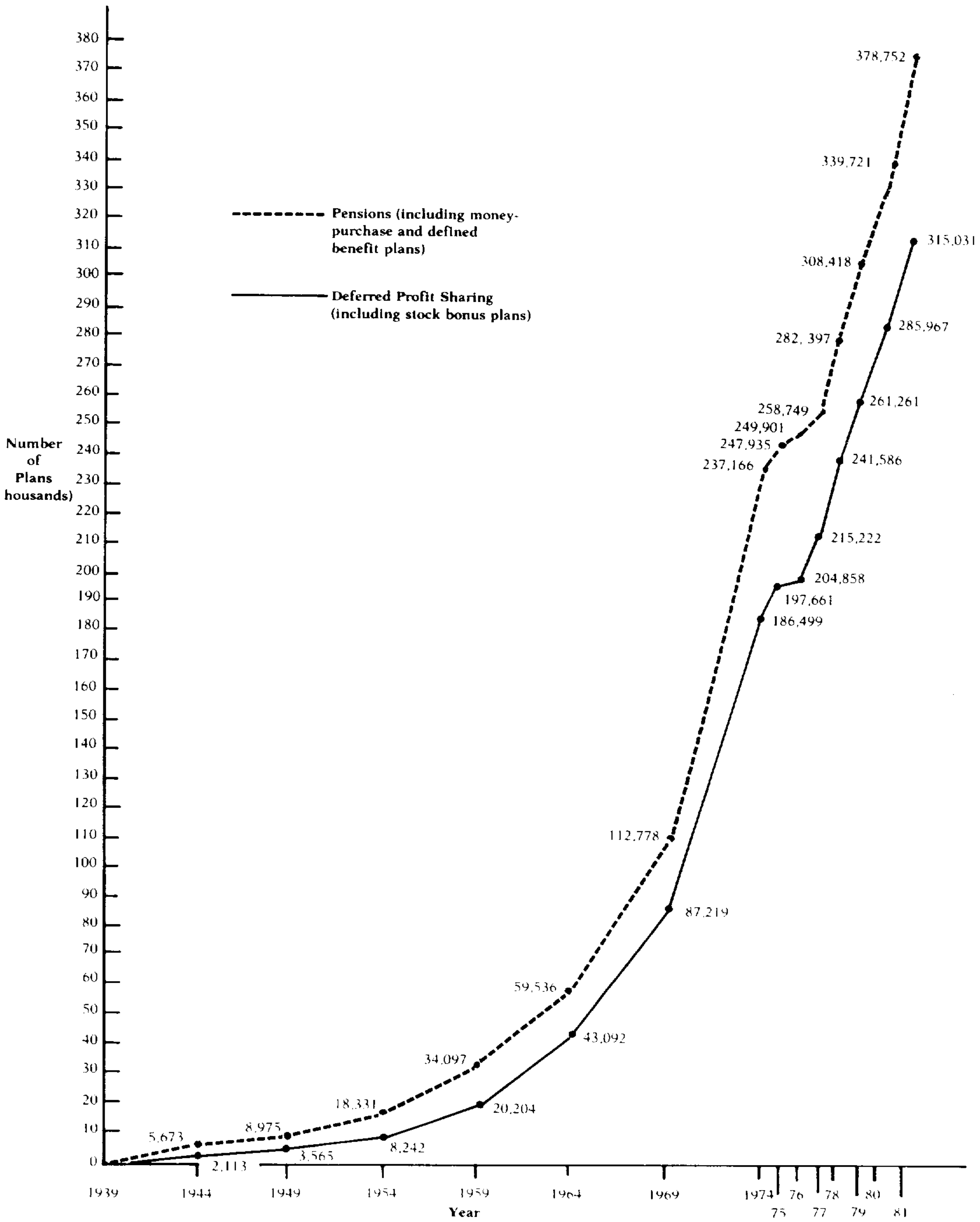
(2) the number of defined benefit pension plans is not as large as many assume (if large companies alone were studied, or if number of participants or dollar assets in trust funds were being considered, then defined benefit pension plans dominate);

(3) there are more deferred profit sharing and thrift programs than any other type of retirement income plan in the United States.

The various types of plans differ greatly in their philosophy, objectives, features, funding mechanisms, investment policy (particularly with respect to plan sponsor company stock) and benefits for

FIGURE 1

Cumulative Growth in Number of Qualified Deferred Profit Sharing Plans and Pensions in the United States—1939 to 1981[1]



Source: Profit Sharing Research Foundation calculations based on U.S. Treasury Department reports.

[1]Plan approvals minus plan terminations.

TABLE 1
Cumulative Net Numerical Growth of Profit Sharing and Pension Programs[1]

Period	Profit Sharing and Thrift Plans	Stock Bonus Plans	Money-Purchase Pensions	Defined Benefit Pensions	Total
Summer 1975	179,843	275	104,120	108,853	393,091
12/31/76	186,282	1,033	110,266	104,673	402,254
12/31/77	195,805	1,874	117,498	106,289	421,466
12/31/78	221,361	2,682	136,043	111,392	471,478
12/31/79	240,493	3,225	149,576	123,880	517,174
12/31/80	264,754	3,670	166,327	138,432	573,183
12/31/81	293,313	4,175	186,105	157,685	641,278

Source: Profit Sharing Research Foundation calculations based on Employee Benefit Survey (EBS)-1 forms in Summer 1975 and subsequent Internal Revenue Service (IRS) reports. The EBS-1 data, compared to IRS statistics, understates the number of qualified plans in existence by 17,543 profit sharing plans and 34,962 pension plans (either money purchase or defined benefit).

[1]Plan approvals minus plan terminations.

participants. Each of the four major plan types has advantages and limitations. There is a place for each plan and frequently they work well together.

Table 3 reflects cumulative plan approvals by plan type. Profit sharing and other defined contribution plans spurted in 1977 and

TABLE 2
Cumulative Net Percentage Growth of Profit Sharing and Pension Programs[1]

Period	Profit Sharing and Thrift Plans	Stock Bonus Plans	Money-Purchase Pensions	Defined Benefit Pensions
Summer 1975	45.7%	.1%	26.5%	27.7%
12/31/76	46.3	.3	27.4	26.0
12/31/77	46.5	.4	27.9	25.2
12/31/78	47.0	.6	28.8	23.6
12/31/79	46.5	.6	28.9	24.0
12/31/80	46.2	.6	29.0	24.2
12/31/81	45.7	.7	29.0	24.6

Source: Profit Sharing Research Foundation calculations based on Employee Benefit Survey (EBS)-1 forms in Summer 1975 and subsequent Internal Revenue Service (IRS) reports. The EBS-1 data, compared to IRS statistics, understates the number of qualified plans in existence by 17,543 profit sharing plans and 34,962 pension plans (either money purchase or defined benefit).

[1]Plan approvals minus plan terminations.

TABLE 3

Comparison of Defined Contribution Plans and Defined Benefit Plans—1975 to 1981

Period	Defined Contribution Plans[1]	Defined Benefit Plans
Summer 1975 plan universe (pre-ERISA)	72%	28%
New plan approvals during 1977	80	20
New plan approvals during 1978	85	15
New plan approvals during 1979	72	28
New plan approvals during 1980	73	27
New plan approvals during 1981	71	29

Source: Employee Benefit Survey (EBS)-1 data.
[1]Includes deferred profit sharing, stock bonus and money-purchase pensions.

1978. However, as a percentage of total new plans, their approval rates during 1979–1981 were very close to their historical rates.

Approximately one-third of a million United States companies share profits under deferred programs with approximately 17 million participants. This represents roughly 20 percent of private, nonfarm employment. Profit sharing trusts now hold over $75 billion in invested assets.

Two-thirds of these plans provide broad coverage—meaning that no large group of employees is excluded and a majority of regular employees participate. One-third provide limited coverage—meaning that coverage is restricted to one or more groups that represent less than a majority of regular employees. Plans exist in 25 percent of manufacturing companies, 33 percent of retailing and wholesaling companies and 40 percent of banks.

While deferred (or combination) profit sharing programs are currently being established in large firms to supplement defined benefit pensions, the vast majority of new plans are being set up in medium and small firms. In 1981, there was an average of seventeen participants in each newly approved deferred profit sharing program. This demonstrates the popularity and applicability of profit sharing to American small business—the sector which has the greatest need for retirement income programs.

Profit Sharing Plan Features

Employee Contributions—In recent years, the trend has been away from employee contributions to defined benefit plans and toward employee contributions to profit sharing plans (principally on a voluntary basis). Bankers Trust Company in its 1980 *Corporate Pension Plan Study: A Guide for the 1980s* reviewed 325 pension plans of 240 large companies. Twenty-two percent of these were pattern plans and 77 percent were conventional plans. A *pattern plan* refers to a plan which has been adopted by certain international unions and negotiated with minor variations among individual companies or groups of companies. A *conventional plan* refers to a plan which provides benefits that vary with years of service and rates of compensation and is not a pattern plan.

The Bankers Trust 1975 and 1980 studies indicated that there were no pattern plans which required employee contributions.[1] Only two plans in the 1975 study and two in the 1980 study permitted voluntary contributions. Sixty-seven percent of the conventional plans studied in 1975 and 81 percent of these plans studied in 1981 did not require or permit employee contributions. The percentage of plans requiring employee contributions dropped from 14 percent of those studied in 1975 to 8 percent in 1980. The rate of plans permitting voluntary employee contributions fell from 20 percent in 1975 to 10 percent in 1980.

The Bankers Trust Company studies cast light on employee contributions to defined benefit plans in large companies. Another study prepared by the American Society of Pension Actuaries (ASPA) reveals comparative experience in medium and small defined benefit and defined contribution plans.

The incidence of noncontributory features is much higher in larger companies and in defined benefit plans. This explains why many large companies have established individual retirement accounts, defined contribution thrift-savings plans—usually qualified by Internal Revenue Service (IRS) as profit sharing plans—to complement their noncontributory pensions.

Permitting employee contributions on a purely voluntary basis, with or without a special thrift incentive, to profit sharing programs is common practice today. Fifty-four percent of defined contribution plans with twenty-six or more participants and 75 percent of defined contribution plans with less than twenty-six participants permit voluntary employee contributions.

The Profit Sharing Council of America (PSCA) and Hewitt Associates reported in their *1981 Profit Sharing Survey*[2] that based on 1980 experience, employee contributions are a feature in 62 percent of the profit sharing plans studied. This increased from 55 percent in 1979 and 46 percent in 1978.

Considering the national concern over the low level of employee savings in the retirement income and capital formation pictures, increased attention should be given to profit sharing programs. Profit sharing programs, when linked with voluntary payroll deductions, can be ideal savings vehicles. Employees gain ease in savings, flexibility in determining their savings rates (up to certain limits), professional management of funds, employee investment options (at times), reduced commissions and favorable tax treatment of investment earnings. The 1981 Economic Recovery Tax Act (ERTA) permits tax-deductible voluntary employee contributions to employee pension plans up to specified limits. This should increase the extent and magnitude of employee savings in profit sharing programs.

Company Contributions—Company contributions to profit sharing plans are usually calculated based on a predetermined formula. Table 4 indicates the methods used to determine employer contributions. Larger companies employ predetermined formulas much more frequently than companies with under 100 participants. Out of 548 respondents to the PSCA and Hewitt survey, 279 had less than 100 plan participants. Over 57 percent of this group determined their profit sharing contributions on the basis of employer discretion. However, as the number of plan participants increased, the prevalence of discretionary arrangements dropped.

Smaller companies, who do not wish to reveal their profit levels and share a specified percentage of profits each year, are more inclined to adopt a discretionary arrangement. This does not mean that the Board of Directors are arbitrary or capricious in determining the amount to be shared in any given year. They may utilize internal guidelines to help them decide how much to share. They may also take capital investment needs and other factors important to the business into consideration. A discretionary arrangement, however, does require that management bridge the *credibility gap* by giving employees definite assurance that profit sharing contributions will rise with company success.

Although small businesses utilize discretionary arrangements to a considerable extent, small companies tend to contribute somewhat larger amounts to profit sharing as a percentage of their participants' pay. *See Table 5.* Companies with under 100 participants contributed 9.9 percent on average compared to 7.8 percent for companies with 5,000 or more participants. Table 5 also shows that for plans of all types, the average contribution to profit sharing for 1980 was 9.5 percent of participants' pay. It should also be noted that the largest

TABLE 4

Methods Used to Determine Employer Contributions

Method	Number of Plan Participants						
	1–99	100–499	500–999	1,000–4,999	5,000 and Over	All Plans	Number of Plans
Specific percentage of profits[1]	28.7%	49.2%	45.5%	63.4%	65.8%	40.8%	224
Specific percentage of participants' deposits	0.7	–	–	1.9	5.7	0.9	5
Specific percentage of participants' pay	11.8	8.0	15.9	5.8	5.7	10.2	56
Discretionary, determined by employer	57.7	37.0	36.3	23.1	11.4	44.6	244
Other (combinations of above)	1.1	5.8	2.3	5.8	11.4	3.5	19
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Number of plans	279	138	44	52	35	548	548

Source: Profit Sharing Council of America and Hewitt Associates *1981 Profit Sharing Survey (1980 Experience)*, with modifications, pp. 10–11.

[1]Includes contributions determined by a specific percentage of profits plus a discretionary addition on the part of the employer.

TABLE 5
Employer Contributions to Profit Sharing as a Percentage of Pay—1980[1]

Type of Plan	Number of Plan Participants: 1–99	100–499	500–999	1,000–4,999	5,000 and Over	All Plans
Cash plans						
also offering pension	11.4% (4)	24.1% (1)	3.1% (1)	12.1% (1)	–	12.1% (7)
not offering pension	8.3 (6)	–	–	–	–	8.3 (6)
Deferred plans						
also offering pension	10.0 (51)	9.7 (22)	6.8 (5)	5.6 (12)	7.0 (17)	8.8 (107)
not offering pension	9.7 (159)	8.6 (80)	7.3 (30)	6.9 (18)	7.3 (8)	9.0 (295)
Combination plans						
also offering pension	9.5 (4)	15.2 (3)	5.6 (2)	14.2 (4)	2.9 (1)	11.0 (14)
not offering pension	11.6 (9)	13.6 (6)	10.4 (2)	14.8 (1)	–	12.3 (18)
Combination option plans						
also offering pension	8.7 (2)	10.4 (5)	15.1 (2)	11.4 (7)	11.8 (6)	11.4 (22)
not offering pension	14.5 (2)	14.7 (12)	4.1 (1)	21.1 (3)	5.7 (1)	14.7 (19)
All plans	9.9% (237)	9.9% (129)	7.5% (43)	9.1% (46)	7.8% (33)	9.5% (488)

Source: Profit Sharing Council of America and Hewitt Associates *1981 Profit Sharing Survey (1980 Experience)*, p. 7.

[1] In all of the averages shown, each company is given equal weighting regardless of number of plan participants or total W-2 pay. The number of plans is shown in parentheses.

companies are more likely to have defined benefit pension plans than smaller companies. Of plans with 5,000 or more participants, 68 percent of those with deferred profit sharing plans also had defined benefit or money-purchase plans. Alternatively, of companies with under 100 participants, only 24 percent had such plans. On average, companies without companion pension plans contribute only slightly more to their deferred profit sharing plans than companies with companion pension plans.

Vesting—Vesting occurs when plan participants earn a nonforfeitable right to employer-financed benefits in a pension or profit sharing plan. Vesting is based on a definite formula which provides participants with a percentage of the accumulated benefit (i.e., company contributions, investment earnings and appreciation/depreciation) credited to their accounts at specified points in time. Vesting practices differ considerably between defined benefit pension plans and profit sharing plans. Vesting practices also differ according to company size.

The Bankers Trust Company 1980 *Pension Plan Study* reflected the following vesting practices among the large plans studied:

(1) Ten-year *cliff* vesting is used by all pattern plans; no pattern plan provides graduated vesting prior to the completion of the ten-year period.

(2) Ten-year *cliff* vesting is utilized by nine out of ten conventional pension plans; one out of ten provides some form of graduated vesting.

Coopers & Lybrand, in their *Survey of Pension Plans 1978*, studied the features of 299 pension plans in medium Midwest companies. Over 80 percent of the plans studied utilized ten-year cliff vesting. However, the ASPA study found that among plans with less than 100 participants a wide variety of vesting methods is used. *See Table 6.*

The PSCA and Profit Sharing Research Foundation (PSRF) October 1980 study of *Vesting Provisions in Profit Sharing Plans* found a dominance of graduated vesting in profit sharing plans (86 percent) and a rare use of ten-year cliff vesting (ten plans or 2 percent). *See Table 7.*

Around 15 percent of profit sharing plans provide full vesting to participants with service of five years or under, slightly over two-thirds extend full vesting at or before ten years of service and 80 percent provide full vesting at or before eleven years of service.

TABLE 6

Vesting Provisions in Defined Corporate Benefit Plans of Small Companies

Type of Vesting	Number of Active Participants 1–10	11–25	26–100
10-year cliff	1.8%	19.3%	26.0%
4–40	33.5	14.1	11.5
10 percent per year	10.2	9.9	13.5
Rule of 45	.3	–	–
0-5-15	14.8	23.9	28.8
20 percent per year	4.1	1.6	1.0
100 percent after 5 years	.8	–	–
100 percent immediate	8.9	1.5	1.9
0-3-13	–	–	–
Other	25.6	29.7	17.3
Total	100.0%	100.0%	100.0%

Source: American Society of Pension Actuaries, Report to the President's Commission on Pension Policy, *An Analysis of the Characteristics of Small and Medium Sized Employer Sponsored Private Retirement Plans*, 1980, table 15.

In profit sharing plans, vesting occurs more rapidly than ERISA's required minimum vesting standard. Shorter vesting periods for profit sharing plans are more common than they used to be. Additionally, vesting occurs more rapidly in typical profit sharing plans than in typical pension plans with ten-year cliff vesting.

TABLE 7

Types of Vesting Provisions in Profit Sharing Plans

Vesting Provisions	Number of Plans	Percent of Plans
Full immediate[1]	46	9%
Full deferred[2]	17	3
Graduated	423	86
Class year	8	2
Rule of 45[3]	–	–
Total	494	100%

[1]Seventeen of these plans require one year of service or less for eligibility, six plans require two years of service and twenty-three plans require three years of service. Employees are 100 percent vested immediately upon entry into these plans.

[2]Two plans have two-year cliff vesting, one plan has four-year cliff vesting, four plans have five-year cliff vesting and ten plans have ten-year cliff vesting.

[3]One plan provides a standard graduated vesting schedule *or* the Rule of 45, whichever benefits the participant most.

Ancillary Benefits—Over 95 percent of profit sharing plans provide 100 percent full vesting upon disability or death before retirement. The remaining plans provide for payment of the vested portion of the participants' account. Pension plans frequently do not provide such ancillary benefits. *See Table 8.*

While three-fourths of small company defined benefit pension plans provide disability and death benefits, only one-third of larger company pension plans provide death benefits before retirement. Most large companies, however, provide such benefits through other programs.

Disbursements—Typical modes of disbursement under profit sharing plans include: (1) lump-sum payouts; (2) installments over a period of time or in relation to life expectancy; (3) the purchase of an annuity for the individual by the trustee; or (4) rollovers into IRAs (this may provide the participants with periodic payouts after age 59 1/2 and a tax umbrella in the interim). This wide range of disbursement options offers participants the flexibility to choose the methods which best suit their needs.

Profit Sharing as a Source of Retirement Income

Either alone or in conjunction with other programs, profit sharing can serve as a source of retirement income. The incidence of defined benefit pension plans or other programs in companies with profit sharing plans is related to company size—the prevalence is much higher in larger companies.

The ASPA report suggests that, dollar for dollar, a defined benefit pension plan generates larger benefits for retirees than a profit shar-

TABLE 8

Ancillary Benefits Provided by Defined Benefit Pensions Before Retirement

	Size Category	
Ancillary Benefits	**Less Than 26 Members**	**More Than 26 Members**
Disability benefits	78.3%	64.4%
Death benefits	71.9	37.4

Source: American Society of Pension Actuaries, Report to the President's Commission on Pension Policy, *An Analysis of the Characteristics of Small and Medium Sized Employer Sponsored Private Retirement Plans*, 1980, table 14.

ing program. This phenomenon reflects the differing allocation methods of each plan type.

In defined benefit plans, the allocation of company contributions is based on compensation, years of service and age. Age is a major factor. The older the participant, the shorter time available to fund his or her retirement benefit; the younger the participant, the longer time available to fund his or her retirement benefit. In actual practice, the company contribution is skewed to the older members. Their allocations are disproportionately large (for similar salary and service) compared to the allocations made to younger members. For example, if two employees each earned $15,000 a year and both had ten years of service, a much larger benefit accrual would be made for the fifty-five year old than the thirty year old.

When young people leave the company's employ after five to ten years of service, their accrued benefits under a defined benefit pension plan are relatively small (even if they are vested, although in most cases they are not). Because less is attributed to terminating younger members, more of the company's contributions remain in the trust to provide larger retirement benefits for those who stay.

In profit sharing, the company contribution is allocated evenly based on compensation (with or without a slight weighting for service). If two men, one age fifty-five and one age thirty, have equal service and are receiving the same salary, they will receive the same amount in profit sharing, e.g., 10 percent of current pay. In this example, if both were making $15,000 per year, each would be allocated $1,500. This would not be true under a defined benefit plan. When younger participants leave a company with profit sharing, they receive a greater amount than they would receive under a defined benefit pension plan.

The amount received under profit sharing should not be considered as severance pay, i.e., an amount equal to two weeks' or one month's wages. If the employee/employer contribution to a profit sharing plan is 8 to 12 percent of pay annually and if benefits vest at 10 percent per year, the disbursement after five to ten years will be substantial. This disbursement can be: (1) rolled over into a tax-deferred IRA for retirement income purposes; (2) rolled over into another qualified plan; or (3) invested (after taxes) at the participant's discretion in securities or bonds such as mutual funds, money market funds, stocks, bonds or gold. It could also be used as a down payment on a home—one of the best investments for providing security in retirement.

Some have questioned the adequacy of retirement benefits generated by profit sharing plans. Obviously, account balances depend on many variables, e.g., company contribution rates over the years, forfeitures, employee contributions (if any), inflationary trends and investment returns.

Table 9 is taken from the ASPA report. It assumes constant earnings, interest earnings in excess of salary increases and it does not discount for inflation.

There is no question that time to benefit from the *miracle of compound earnings* is an important factor in profit sharing accumulations. Also, investment performance may be good or bad depending on circumstances in a given year. Nevertheless, it is interesting to work with the ASPA data and to compare benefit levels generated by profit sharing plans and defined benefit pension plans.

In its development of models to compare defined benefit pension and profit sharing benefit levels, ASPA used a rather modest pension formula. The formula used provided for 1 percent of final-year monthly salary times years of service. For example, someone retiring at age sixty-five with a final-year monthly salary of $1,500 and with thirty years of service would receive a lifetime monthly income of $450. To measure the comparative worth of profit sharing benefits with pension plan benefits, PSRF used the 1 percent benefit formula. Table 10 reflects the results.

Profit sharing account balances were converted to retirement income per month. The conversion assumes that $10,000 would buy an immediate straight-life annuity of $100 monthly for a male retiring at age sixty-five. An account balance of $50,000 would generate $500 monthly, or $6,000 annually.

TABLE 9

Defined Contribution Accumulations at Age Sixty-Five[1]

Entry Age	Starting Annual Wage	Contribution Rates 4 Percent	6 Percent	8 Percent	10 Percent
25	$10,000	$193,456	$290,185	$386,913	$483,642
35	15,000	115,656	173,485	231,315	289,143
45	20,000	54,673	82,010	109,346	136,678
55	25,000	18,186	27,279	36,362	45,453

Source: American Society of Pension Actuaries, Report to the President's Commission on Pension Policy, *An Analysis of the Characteristics of Small and Medium Sized Employer Sponsored Private Retirement Plans*, 1980, table 1.

[1]Interest assumed at 7 percent per annum, compounded annually. Salary increases assumed at 6 percent per year.

TABLE 10
Profit Sharing Benefits to Retirees as a Percent of Pension Standard[1]

Entry Age	Profit Sharing as a Percent of Pension Standard	Replacement Ratio as a Percent of Final Monthly Salary	
		Profit Sharing	Pension
25	113%	45%	40%
35	107	32	30
45	102	20	20
55	98	10	10

[1]Assumed a profit sharing contribution rate of 8 percent of pay, a pension benefit of 1 percent of final-year monthly salary times years of service without offset for Social Security benefits, a return on investment of 7 percent per annum and a salary increase of 6 percent per year.

An example might clarify PSRF procedures.

An employee enters plan participation at age twenty-five with a starting salary of \$10,000. The company contribution rate is 8 percent of pay. The employee accumulates \$386,913 at retirement. See Table 9. *The following results:*

(1) Age 65 − entry age 25 = 40 years of service with salary increasing 6 percent per year to \$102,856 at retirement.

(2) $\frac{\$102{,}856}{12} = \$8{,}571$ *final year monthly pay.*

(3) Pension benefit = .01 × 40 years × \$8,571 = \$3,428 monthly benefit.

(4) Profit sharing benefit = \$386,913 or \$3,869 monthly benefit.

(5) $\left.\frac{\$3{,}869 \text{ - profit sharing benefit}}{\$3{,}428 \text{ - pension benefit}}\right\}$ *Profit sharing benefit is 113 percent of pension standard.*

(6) Replacement ratio = $\left.\frac{\$3{,}869 \text{ - profit sharing benefit}}{\$8{,}571 \text{ - final year monthly pay}}\right\}$ *45 percent.*

It may be worthwhile to expand the comparison by increasing the pension benefit to a more realistic level—from 1.0 percent to 1.3 percent—and to increase the assumed profit sharing contribution rate—from 8 percent to 10 percent.

The 1.3 percent of final average pay times years of service, with no offset for Social Security, is in line with current pension benefit levels. Other standards could be used.

Assumptions for Table 11 remain the same as for Table 10 with regard to salary progression at 6 percent, investment return of 7 percent and the same conversion factors for profit sharing accumu-

TABLE 11

Profit Sharing Benefits to Retirees as a Percent of Pension Standard[1]

Entry Age	Profit Sharing as a Percent of Pension Standard	Replacement Ratio as Percent of Final Average Salary	
		Profit Sharing	Pension
25	114%	60%	52%
35	109	43	39
45	104	27	26
55	99	13	13

[1]Assumed a profit sharing contribution rate of 10 percent of pay, a pension benefit of 1.3 percent of final-year monthly salary times years of service without offset for Social Security benefits, a return on investment of 7 percent per annum and a salary increase of 6 percent per year.

lations. Assumptions for the company contribution rate and the pension benefit have been increased.

Final *average* pay is used here. This contrasts with final *annual* pay in Table 10. Final average pay is defined as the highest consecutive three years of earnings out of the last five years of a person's employment. A factor of .9445 was applied to final annual pay to arrive at a final average pay.

Benefit levels from the profit sharing programs were comparable to or slightly exceeded pension benefit levels in both Tables 10 and 11.

The above projections were based on a one-point spread between investment return and wage inflation. This is a very narrow spread but not overly pessimistic in light of today's high inflation and low investment returns. However, historically there has been a two-to-three point spread in favor of investment returns over wage increments. For the medium- to long-term, one would hope that this relationship would fall into line with historical trends. Providing adequate funding for pensions and profit sharing plans under these latter conditions would be far easier.

Examples in Tables 10 and 11 have been based on projections, not actual experiences. In assessing the capability of profit sharing to adequately fund a retirement income program, it seems reasonable to look at actual examples. *See Table 12.* (Note, however, that the data available for actual examples is limited.)

In preparing the 1978 study of *Profit Sharing in 38 Large Companies*, Volume II, PSRF gathered relevant information on profit sharing benefits which actually had been paid out to long-term, nonmanage-

TABLE 12
Actual Examples of Profit Sharing Benefits

McGraw-Edison Co.	Deluxe Check Printers, Inc.	Signode Corp.
23 years of participation	26 years of participation	35 years of participation
$10,390 final average pay	$12,966 final average pay	$ 14,466 final average pay
$40,000 P/S balance	$99,625 P/S balance	$127,752 P/S balance
$ 4,800 P/S income per year	$11,955 P/S income per year	$ 15,300 P/S income per year
$ 3,107 pension income per year	$ 4,383 pension income per year	$ 6,582 pension income per year
154 percent of pension standard	273 percent of pension standard	233 percent of pension standard

ment employees. These benefits were then compared to a 1.3 percent pension standard (similar to the standard used above) to determine whether the profit sharing benefits fell below, equalled or exceeded the pension standard. The results reflect actual company contributions and actual investment experience.

Overall, only six companies out of the thirty-three that provided this data generated profit sharing benefits which fell below the pension standard. All six companies provided pension plans in addition to their profit sharing programs. Thus, these companies provided combined benefits from both programs that were substantially more than the benefits from companies with only standard pensions.

Twenty-seven out of the thirty-three companies (82 percent) had profit sharing programs which generated benefits from 102 percent to 1,011 percent of the pension standard. Additionally, thirteen of the twenty-seven companies provided separate pension programs.

Advantages and Disadvantages of Defined Benefit Pension and Profit Sharing Programs

Both defined benefit pension and deferred profit sharing programs have advantages and limitations. They also frequently work together in tandem.[3] Defined benefit plans have features which profit sharing plans do not have. For example, defined benefit plans can:

(1) easily be designed to give credit for past and for future service;

(2) insulate participants from adverse investment experience;

(3) gear benefits to final pay as though the employee was earning final average pay during his or her entire working career;

(4) provide a predetermined level of retirement income;

(5) reflect exceptional increases in participants' pay that occur toward the latter part of employment years;

(6) accumulate benefits for participants even in periods of nonprofitability.

Alternatively, profit sharing plans have features which defined benefit plans do not have. For example, profit sharing plans can:

(1) relate the level of contributions to the success of the enterprise and, therefore, provide incentives for employee productivity;

(2) provide flexibility in plan features (e.g., voluntary employee contributions, fast vesting, forfeitures reallocated among remaining participants, employee investment options, fund transfer privileges, ancillary

benefits and broad disbursement options) which make the plan attractive to employees at all ages;

(3) pass on the rewards of good investment performance to participants;

(4) provide reserve funds which can be used during employment for long-term security needs (e.g., down payment on a home, major home improvements, college education for children, medical and financial emergencies).

Other advantages and disadvantages are briefly described in Table 13.

ERISA categorizes two types of private retirement income plans: (1) defined benefit plans; and (2) defined contribution plans. Major subdivisions of defined contribution plans include: profit sharing, money-purchase pension, employee stock ownership plans (ESOPs and TRASOPs).

Money-purchase pension plans are individual account plans. They differ, however, from profit sharing plans, in several important respects. For example, under money-purchase pension plans:

(1) Annual company contributions are not related to the profitability of the enterprise but are usually calculated as a fixed percentage of pay (e.g., 8 percent of pay) or on a dollars-per-week or cents-per-hour basis.

(2) Forfeitures cannot be reallocated among remaining participants. They must be used to reduce future company contributions.

(3) No partial withdrawals of company contributions can be made during employment.

Although money-purchase plans are common in very small companies, these plans have two serious shortcomings compared to profit sharing and defined benefit pensions:

(1) They lack the incentives for employee productivity that are provided by profit sharing plans. Company contributions to money-purchase plans are based on employee pay level—not company profit.

(2) Unlike defined benefit plans, money-purchase plans do not provide predetermined benefits.

Profit Sharing Plans and Inflation

Profit sharing plans offer a number of options which can help them cope with inflation. For example, under profit sharing plans participants can:

TABLE 13
Other Advantages and Disadvantages of Pension and Deferred Profit Sharing Programs

Defined Benefit Pension Plan

Advantages		Disadvantages	
Company Point of View	**Employee Point of View**	**Company Point of View**	**Employee Point of View**
Constitutes a *consistent funding* method	Provides *known level* of retirement income, aids financial planning	*Lacks cost predictability;* saddles company with uncertain, and partly uncontrollable, costs in inflationary era when benefits are linked to final pay	Perceived as *amortization plan* to provide benefits to superannuated employees
Is *cost efficient;* less paid aid out to terminatees, more to retirees	*Promises financial security* at retirement; contributes to employee peace of mind	Improving benefits may *increase burden* of past service liabilities	Usually requires *10-year cliff vesting*
Integrates well with Social Security; skews benefits toward long-service, higher paid employees	*Company bears the risk* of poor investment performance of pension portfolio	Company must meet costs of *poor investment performance*	Only provides benefits *at end of employment road* (i.e., retirement, death or disability)
	Pension Benefit Guaranty Corporation (PBGC) insures plan benefits (up to certain limits)	Subjects at least *30 percent of corporate net worth* to benefit payments in case of termination of inadequately funded plan	*Size* of eventual benefit *cannot be directly affected* by individual/collective effort
	Provides credit for service prior to plan creation and benefit increases based upon total service		Accrued benefits are *held* until terminatee's normal retirement age

		Requires payment of *termination insurance premiums* to PBGC	Pension *guarantees* from PBGC *are limited*, not absolute
			Prorata interest in collective fund is less meaningful than a *vested individual* capital accumulation account

Deferred Profit Sharing Plan

Advantages		Disadvantages	
Company Point of View	**Employee Point of View**	**Company Point of View**	**Employee Point of View**
Benefit is *affordable;* funded within company's ability to pay	*Opportunity to share* directly in company success	Takes *time* to build up significant amounts in accounts	Company *contributes little* to profit sharing in a poor year
Is, by its nature, a *fully funded plan*	Chance to *affect size* of benefits through performance	Dollar for dollar *may not generate as high a level* of retirement income as a pension	*Employees bear burden* of poor investment performance
No termination insurance *premiums or 30 percent net worth exposure*	Participation in *investment earnings and gains*	*Variability* in company contributions and investment returns makes replacement planning difficult	Rewards or penalizes employees for factors *not under their direct control*
Improvements *affect future benefits* but do not increase past service liabilities	*Flexibility* in plan features	Philosophy of profit sharing *may not fit* particular management style	Does *not* provide *guarantees* or known level of retirement income
Is a *multipurpose* program	*Rapid vesting*		
	Account balance *not offset* by Social Security benefits		
	Participation in *risk* free enterprise system		

(1) delay retirement to age seventy and continue to participate in the profit sharing program. This will result in a greater amount of retirement income that will be spread over a fewer number of retirement years.

(2) take lump-sum distributions (under certain circumstances) and roll them over into IRAs. Distributions from such an IRA are taxable but the balance continues to grow tax free until received. The investment income can help the retiree hedge against inflation.

(3) pay the tax on a lump-sum distribution, invest the balance of the distribution and live on the investment income and principal. Lump-sum payouts offer retirees maximum flexibility to provide for their own needs.

(4) sometimes take partial or whole lump-sum distributions in employer stock. This creates several advantages. The tax basis of the employer stock is the average acquisition cost to the trust; it is not the current market value. The unrealized appreciation on the stock is not taxed until the stock is sold. Stock dividends can provide retirement income and the stock may be sold in quantities and at prices that are most advantageous to the retiree.

(5) receive installment payments—leaving the remaining account balance in tax sheltered, professionally managed trusts to earn investment income. How might this work out in practice? A profit sharing participant, who retires with $60,000 in a fixed income fund and who elects to receive fifteen annual installments, will receive $4,000 as his or her first installment. Assuming an effective annual yield of 9 percent credited to his unpaid balance at each monthly reevaluation, the retiree could receive an increasing amount from interest and principal each year. The fifteenth and final installment would be approximately $13,364. The total settlement would have yielded the retiree more than $116,000.

Additionally, there are some alternative options. The retiree could withdraw part of the interest and principal each year and stretch the installments out over a longer period, e.g., the joint life expectancies of the retiree and his spouse. Thus, profit sharing permits the retirees who choose installment payments to continue receiving investment returns on the unpaid balances in their accounts. The power of compound interest continues to directly benefit the retiree. This is not true under a defined benefit pension program.

Conclusion

Profit sharing is no panacea and takes time to work its marvel of compound interest. Especially for small businesses, however, it does offer a number of positive attributes related to flexible funding, vesting, reallocation of forfeitures, preretirement death benefits for spouses and installment payouts during retirement as a way to help the retiree cope with inflation.

Deferred profit sharing:

- contributes substantially to retirement income;
- provides survivor and disability benefits;
- aids capital formation;
- encourages and adds to individual savings;
- improves productivity by increasing efficiency and lowering cost of production;
- serves as an inflation hedge;
- reduces the financial burden on the Social Security system;
- provides portability of retirement benefits to younger and short-term workers;
- offers the most feasible method of providing retirement benefits to small and medium-sized companies, the area most in need of retirement programs.

Profit sharing is a versatile and adaptable program which can provide retirement income and can simultaneously generate employee productivity which contributes to the plan's affordability. Profit sharing plans represent an important component of our complex retirement income system.

Notes

1. Bankers Trust Company, *1975 Study of Corporate Pension Plans* (New York, 1975); idem, *Corporate Pension Plan Study, A Guide for the 1980s* (New York, 1980).
2. Hewitt Associates and Profit Sharing Council of America, *1981 Profit Sharing Survey (1980 Experience)* (Chicago, Ill.: 1981).
3. See the Profit Sharing Research Foundation paper on "Combination Pension, Profit Sharing, and Thrift Plans."

Discussion

MR. SCHULZ: What are the implications for profit sharing and the ultimate adequacy of retirement income of sustained periods of low profitability?

MR. HOLAN: I have reviewed the history of a number of companies that went through periods of no profitability and have been amazed. There are provisions within the Internal Revenue Code which allow you to make additional contributions in good years to make up for loss years. I have seen companies go through periods of four years with no profit sharing contributions and still achieve what I would consider to be adequate account balances. For a typical employee who has been with an employer for twenty years, balances range roughly from \$50,000 to \$100,000. (ed. This would provide a monthly check of between \$500 to \$1,000.)

MR. SEIDMAN: Most of your paper seems to pose profit sharing and defined benefit plans as alternatives. Yet, your concluding remarks make it clear that you believe, as I do, that workers can participate in profit sharing plans over and above what they may have negotiated by way of other pension plans.

Mr. Trowbridge's paper talks about the increasing acceptance of profit sharing on the part of employees, and I assume he means unions. I think there is some evidence of that. It is under very special circumstances, however, and I think that should be emphasized. Profit sharing is not being regarded by those unions as an alternative to their other pension plans. Specifically, unions are accepting profit sharing under circumstances where it is done in order to keep the companies afloat. The unions are saying that if a company ever does get out of the morass, they want to know now that they are going to be participating in that improvement. It is on this basis that unions are accepting profit sharing, where in the past they have not.

MR. TROWBRIDGE: Many of you realize that there are pensions that have nothing to do with profit making organizations. For example, many financial institutions in this country are based on the mutual principle. On the mutual principle, there are no profits to be shared. Of course, there are no profits to be shared in nonprofit organizations of various kinds. There is no profit to be shared in government organizations. So the profit sharing principle, although it works for a good part of American industry, is not an answer to the retirement income problem.

MR. HOLAN: I do not disagree with Mr. Seidman. When I first joined the Profit Sharing Council, Walter Reuther placed profit sharing on the bargaining table with General Motors every year. They were not willing to accept it. At that time the question was: If the employees will go for profit sharing, will they go for loss sharing? That is what we are seeing now in some of these agreements.

Second, there is a philosophical basis to what point profits should be shared. If there is a turnaround at General Motors, the figures range from $25 per employee each year to $1,000 per employee each year.

MR. WHITE: I would like to ask a question concerning the key difference between profit sharing plans and defined contribution/defined benefit plans. It appears that one of the hallmarks of profit sharing plans is that in the periods of low or no profit, you can stop your contribution, but in the defined contribution plan, you are generally locked into your contribution. Is that right?

MR. PAINE: There is a difference between the definition of profit sharing as we have been discussing it here and the definition used by the IRS. The IRS says that you are qualifying a retirement plan as a profit sharing plan if the contribution is dependent on current earnings or earned surplus of the employer. Therefore, you have many kinds of plans that have not been defined as profit sharing plans here, but they are qualified as profit sharing plans by IRS. A plan that puts in some percent of pay is one example. There are many, many matching savings plans, particularly among salaried employees in this country, where the employer puts in fifty cents or some other number for each dollar the employee saves. That is also technically a profit sharing plan. I do not think we should narrow in too closely on a definition, because the government revenue people will use a much wider definition.

MR. COWLES: Tom Paine has just introduced the idea of savings plans and, in that context, I think there is an answer to Mr. White's question. Savings plans ordinarily start with a specific match, and frequently over time the match is increased. The contribution rate in that type of plan often is changed.

Defined Benefit and Defined Contribution Plans: A Labor Perspective

Thomas F. Duzak

Introduction

Employee benefit specialists and other technically oriented professionals are most likely to use different criteria in judging the comparative advantages and disadvantages of defined benefit and defined contribution benefit plans. Certainly, lengthy and detailed analyses can be performed judging plan performance from the standpoint of administration, cost, tax consequence and various corporate objectives.

The purpose of this paper is to present a labor union perspective[1] of defined benefit plans and defined contribution plans—first, in terms of their capacity to meet the needs of workers who look to labor unions for assistance in determining their wages, hours and working conditions and second, in terms of the impact which each type of plan may have on the collective bargaining process itself.

Because this labor viewpoint is not intended to be technically oriented, it is sufficient to distinguish between defined contribution plans and defined benefit plans using the basic description of each plan. The defined contribution plan has a fixed amount or rate of contribution with the benefit payout being variable. The defined benefit plan has a predetermined benefit regardless of the unit cost.

Furthermore, for the purpose of this paper, defined benefit plans will include not only pension and other retirement benefit plans, but also other forms of income maintenance and expense reimbursement programs where the amount of payout is according to a predetermined formula and the plan sponsor is obligated to maintain the program for a period of time irrespective of the program costs to the employer.

The Needs of the Union Member

Over the past five decades, since workers' rights to organize were established under federal law, the labor movement has bargained collectively for 20–30 percent of the private sector labor force. In addition, it can be safely assumed that a sizable percentage of the unorganized sector indirectly benefits from the economic patterns which are established through bargaining, in that employers seek to maintain a certain level of parity for nonunion workers in order to avoid becoming union organized.

Economic studies have continually shown that workers who are members of unions generally receive more compensation than nonunion workers within the same industry, even though the average wage level paid to represented workers may only slightly exceed that of nonunion workers. The principal economic advantage enjoyed by the union worker results from his union's ability to bargain more forms of employee benefit plans which provide higher benefit payouts than for unorganized workers. President Carter's Commission on Pension Policy, for example, reported that 91 percent of the private sector work force who did not enjoy pension coverage also did not belong to a labor union.

Since their legal right to negotiate over pension plans and insurance plans was first established in 1949, labor unions have with steadfast determination directed a growing share of the economic package into benefit plans. In many basic industries, benefit plan costs account for 30–40 percent of labor compensation.

Economists and labor relations authorities, having the advantage of retrospective analysis, have ascribed various motives to labor's ambitious and consistent pursuit of benefit plans. Fringe benefit plans have been viewed as a means of establishing a basis for worker identity to the union and of serving as an aid to further expansion of union membership. Others focus on the tax advantages available to participants in qualified plans. They conclude that unions merely have sought to achieve the same kinds of tax shelters heretofore available to salaried personnel. Recently, proponents of the so-called procompetition approach to health care have argued that the favorable tax treatment of medical care insurance plans is, in part, an incentive for labor unions to seek comprehensive coverage aggressively.

These and other similar theories fail to recognize the basic motivation which attracts workers to unions, i.e., the ability of the union to competently address the worker's own desire to achieve security against the risk of economic losses resulting from factors over which he has no personal control.

As the union member progresses through his work life, he is continually exposed to risks which may disrupt the stream of income upon which his living standards are virtually dependent. Unanticipated expenses or income loss due to short-term or long-term disability, layoff or termination can be dramatic and not readily replaced through personal savings. Also, even if the employee were to maintain a stable long-term employment relationship until the time of normal retirement, it is unlikely that an industrial hourly rated employee would have had the wherewithal to accumulate adequate personal savings to maintain his real income level for the remainder of his lifetime.[2]

Clearly, the efforts of labor unions, which represent industrial workers, have been to secure benefit programs which impose a duty upon an employer to maintain a specified percentage of the employee's income during the periods of unemployment.[3] Of particular concern has been the needs of workers who are victims of plant closings and other forms of permanent job dislocation. In many cases, pension plans provide for the immediate payment of not only the retiree's accrued benefit but also an additional supplemental allowance until Social Security eligibility is obtained.

Defined Benefit/Defined Contribution

Regardless of the implications for the employer or any individual employee, defined benefit plans are clearly best suited and most compatible with the concept of employee benefits as a form of income replacement. Labor cost represents one element in determining the cost of production—a cost which must be recognized by the employer before he determines his profit or allocates a share of his return to his stockholders. Through the collective bargaining process, employees have made a decision to forego a share of what would otherwise be paid as wages in exchange for a commitment from the employer to provide a predetermined income stream under certain conditions. In this sense, those defined contribution plans which determine the amount of income to the employee as a function of the employer's profit, or the price of the company's stock, or the investment yield of a fixed pool of assets, are not compatible with the concept of a wage versus income security trade-off.

Despite labor's strong emphasis on adequate income replacement under conditions which are difficult to anticipate, factors such as age, sex, income levels and seniority status make it virtually impossible to construct plans which provide desirable levels of income replacement and which also represent an equivalent value to all employees in the covered population. From this perspective, the employee accepts a trade-off of wages for security regardless of the economic value of the employment costs allocated by the employer to him as an individual at any given point in time.

A second consideration in evaluating the relative utility of defined benefit plans and defined contribution plans within the context of collective bargaining is the need to maximize the effective allocation of a limited supply of resources. To the extent that benefit plans are geared toward income replacement, they must assure that the amount of given payout is predictable, adequate and does not provide perverse incentives for unacceptable employee behavior.

Disability benefits, for example, must be adequate to maintain family income needs for the duration of disability regardless of the employee's age at onset of disability. At the same time, a disability benefit, which alone or in combination with other similar benefits (such as Social Security) exceeds take-home pay, represents an inefficient expenditure of funds and may encourage abuse.

Generally speaking, defined contribution plans, which limit the availability of benefits to those who are supported by accrued contributions, do not efficiently allocate payments in a direct relationship to the employee's needs at any given point in time. Also, because defined contribution plans are normally not integrated with other benefit payment sources, such as statutory programs, the relationship between replacement income needs and actual payout may be further distorted.

Collective Bargaining and Income Replacement

From a labor perspective, a comparison of defined benefit plans with defined contribution plans must consider the extent to which each form impacts upon the collective bargaining process itself. Not only must the economic needs of the individual be considered, but also the structure of the employee benefit plan must be compatible with the collective bargaining process in terms of meeting the objectives of both sides in negotiations.

In a sense, labor unions are faced with the more difficult problem because both federal law as well as the democratic nature of the labor organization require that the interests of individual members be constantly weighed against those of the organization as a whole. Furthermore, both parties, but especially the union, must take exceptional care in formulating benefit plans which provide understandable and predictable outcomes for covered participants.

This does not mean, however, that a union is compelled to bargain compensation and benefit plans which necessarily are of approximately equivalent value to each individual. By definition, the collective bargaining process requires a pooling of economic strength in order to achieve an objective which is determined by the group as a whole; but at the same time, the process dictates a sacrifice of individuality. As long as the union's decisions are made in good faith and are not arbitrary, it satisfies its duties of fair representation even, for example, if a negotiated benefit plan does not represent equivalent value for each participant. Consistent with this view, labor unions have relied upon defined benefit plans as the best means of efficiently targeting a limited share of economic resources, in a manner which maximizes the outcome for participants with the most compelling needs for economic benefits.

Few can argue with the proposition that employees should not expect to be entirely insulated from fluctuations in the economic fortunes of the employer. It is also undesirable to establish employee compensation programs which seriously hamper the ability of the employee to establish reasonable long-term plans and determine his or her personal needs on the basis of predictable income sources. This argument is particularly relevant in the case of certain defined contribution arrangements in which the employer's contribution is not at all related to the economic needs of the employee group at any particular point in time.

At the same time, the worker need not be immediately rewarded because the employer is able to obtain a comparative advantage over other employees. This is done by reducing the unit cost of providing the employee with a negotiated defined benefit.

Another means of evaluating defined contribution and defined benefit plans within the context of collective bargaining is to determine whether the primary function of the plan is to serve the needs of the participants which the parties have identified (e.g., income maintenance) or whether the plan best serves some other function (e.g., tax avoidance). Many defined benefit plans are primarily tax reduction and tax deferral mechanisms and only meet an income replacement objective indirectly.

Individual retirement accounts have been touted by some as an attractive mechanism through which wage earners may participate in assuring an adequate retirement income. Deferred compensation plans are also viewed in the same regard. The fact remains that the relative value of participation in such plans is directly a function of the participant's income tax rate. Wage earners have no assurance that any eventual payout under the defined contribution plan will approximate their economic needs during retirement.

It can be argued, therefore, that to the extent employers exert pressure to substitute defined contribution plans for defined benefit plans—as the primary means of income replacement—the collective bargaining process will suffer.

Even where a defined contribution plan is established in addition to a defined benefit plan, one can expect that the collective bargaining process will be adversely affected. Changes in government tax policies may affect the relative payouts of certain subgroups of employees, thus creating the opportunity for added tension within the work force. Where plans provide for multiple investment vehicles, for example, the ability of the union and the employer to obtain mutually desirable outcomes declines while the influence of a third party—investment managers—increases. Employees who incur direct losses as the result of poor investment performance under a defined contribution plan may, in retrospect, hold the union accountable or at least question whether the union adequately represented their best interests even though the union did not participate in the investment decisions.

Finally, it should be recognized that the structure of defined benefit plans also reflects the desire of many employers to retain complete responsibility and control over the disposition of plan assets. Although exceptions to the rule can be found easily, collective bargaining in the United States is still dominated by the underlying premise that the process evolves from a confrontation of competing interests—the employer's interest in maintaining exclusive authority to manage the business and the worker's interest in securing protection against the consequences of management's actions.

With respect to employee benefit plans, management has been reluctant to embrace the concept of employee ownership or control of plan assets. In basic industries, management has acknowledged the right of labor unions to bargain over matters of plan design such as eligibility for, and the amount of, benefits payable to workers under specified circumstances. Management has, however, preferred to retain exclusive responsibility for administrative and investment decisions. Consequently, it is not surprising that among single employer plans, most are solely administered by the employer but the continued payment of benefits is contractually assured.

To some extent, it can be argued that the provision of income replacement through defined benefit plans facilitates and simplifies the collective bargaining process by: (1) maintaining a more clear distinction between the role of the employer and the union in determining the structure of the plan; and (2) in terms of judging its effectiveness in meeting each party's objectives.

Where defined contribution plans (such as money-purchase plans, deferred compensation plans and thrift plans) are established through collective bargaining, labor unions can be subjected to a dual risk. First, the employer may adopt a laissez faire attitude in determining the extent to which benefit payments adequately meet the income replacement needs of the participant. If the employer's obligation is fixed as a percentage of payroll or a defined number of cents-per-hour, the employer does not share the same incentive to maximize fund performance. If the work force contracts because of poor management, the employer's obligations under the defined contribution plan will decline even though the needs of affected employees may simultaneously increase.

Sometimes a defined contribution plan may cause the employee's own interests as a plan participant to come into conflict with his obligations as a union member. Although there are a great many variables in the equation, the fact remains that the labor union assumes both the legal and moral responsibility of serving the long-term interests of its membership as a whole. Under defined contribution plans, the use of individual accounting can lessen the employee's willingness to support collective bargaining proposals which address the shared needs of the membership at large.

Conclusion

Unquestionably, employee benefit plans have flourished because of their diversity and their unique ability to serve a wide range of needs of both plan participants and plan sponsors alike. Some plans help provide substantial security against wage loss and economic hardship, some assist individuals in maximizing their investment gains and others help to minimize tax liability of the sponsor and/or the beneficiary.

The influence that labor has had upon the design of employee benefit plans reflects its cognizance of the reasons why workers join unions in the first place. Workers do not choose union representation in order to find tax shelters, to maximize investment yield or to purchase their employers' stock. One reason workers seek union representation is the proven ability of the collective bargaining process to translate the collective strength of the work force into economic agreements. This improves the worker's earnings while on the job and maintains that income capacity at times when he is unable to work through no fault of his own.

While benefit plans are multidimensional in terms of their utility to plan participants, from labor's perspective those with defined benefits have generally better served the basic interests of the union member.

Notes

1. The views of the paper are the author's alone. No attempt is made here to argue that all, or even most, labor unions share the same views on this subject. In the area of employee benefits, there are some significant contrasts in the collective bargaining policies and practices among labor unions, particularly between craft unions who normally provide employee benefits through multiemployer plans and the industrial unions who bargain with single employers who, in turn, administer the benefit plans.
2. Once again, according to a Pension Commission survey, only about one-third of respondents expected to rely upon savings (other than IRAs) as a source of retirement. At the same time, workers with the lowest family income levels are the least likely to have established IRA coverage.
3. As early as the immediate postwar period, the efforts of many labor unions were manifested in proposals to establish a guaranteed annual wage for industrial workers. Although formalized guaranteed annual wage programs did not materialize, various forms of wage replacement programs were established such as supplemental unemployment benefits and disability insurance plans.

Discussion

MR. COWEN: Senator Stevens has a pension reform package that he is ready to introduce, which would create a defined contribution program and impact on the federal work force. One of the arguments that we are using, which favors this legislation from a labor perspective, is based on the lack of collective bargaining on compensation issues in the federal work force. We are arguing that a defined contribution plan, with the employees' money invested in the private sector and controlled by the employees, would provide stronger legal rights than exist presently. Since it is Congress's prerogative to change a statutory entitlement, we are arguing that once the money goes into the employees' accounts, it cannot subsequently be attached by Congress. The strength is then in the employees' hands. How do you feel about that?

MR. KLINE: It is a novel issue. In the private sector, the union has a very direct interest and a large element of control with respect to benefits in the bargaining process.

One reaction would be a negative one, because what you have suggested would shift the risk of poor investment returns to employees. The benefit payout at the end of the tunnel is contingent, in part, upon investment return. If the goal, in fact, is to protect workers by insulating their retirement income against Congressional tampering, then take the existing defined benefit system and attach the appropriate safeguards to accomplish that goal. This is a personal observation.

MR. COWEN: Regardless of the safeguards you build into legislation pertaining to defined benefit plans in the federal sector, Congress can change anything that it subsequently decides to change. Is it valid to think that if we set up a system where the money is actually the employees' money, it cannot subsequently be attached by Congress?

MR. KLINE: I understand that is what you are getting at. Congress could periodically transfer funds to an insurance group annuity system and provide the benefits that way—the same goal could be accomplished. I take it that you are contemplating actually taking the money out of the Treasury.

MR. COWEN: Yes, the money would be transferred to an employee board that would invest it privately.

MR. SEIDMAN: I want to comment on the relationship of the defined benefit plan to the question of management control. Traditionally, in the single-employer defined benefit plan, the unions have taken the position that as long as management assures that the defined benefit is actually paid, management has the right to control the plan.

We have already discussed the question as to whether the Taft-Hartley plans are defined contribution or defined benefit plans, but if they are defined benefit plans, that is not true. Management does not have the right to control the assets. I think there is a trend developing away from unilateral management control of single-employer defined benefit plans. This is, in part, because the whole idea of what is a defined benefit, although it sounds very simple, is really not very simple.

In one sense, a defined benefit is the benefit that is assured as of a given moment, when the worker retires; but what can be negotiated in the next round of bargaining, may very well depend on the way in which the funds in that plan are invested. There are even broader considerations relating to employment, wage potential in the industry, and so on, which go beyond the pension plan itself. It seems to me that this distinction between defined benefit and defined contribution plans, with a collateral distinction between unilateral management control or some degree of union participation and control, has always been blurred; and it is going to be increasingly blurred.

MR. COWLES: I do not feel I would earn my salary for the day if I did not correct something that was said a moment ago. There are other ways to transfer money to the private sector and keep it out of the hands of Congress. Rather than annuity contracts, the money could be handled by a bank trustee.

MR. BERGER: In recent times, we have heard the claim that defined benefit plans are a thing of the past and that we are not going to have a large number of new defined benefit plans, particularly outside the context of closely held corporations where the sponsors—the owners of the company—have a very high personal incentive to establish defined benefit plans. But, in a larger context, there has been an allegation that defined benefit plans are dead. I would like to know what you and others think about that claim. I would also like to know what you think the factors are which should encourage employers, participants and unions to be interested in the continuity of defined benefit plans. Why should people, employers for example, care about whether or not there is a future for defined benefit plans?

MR. KLINE: I do not think in the industrial union context that defined benefit plans are dead at all. There is obvious history here that lends itself to their continuance. The plans are understood by workers. Increasingly, workers are appreciative of the government insurance program. This program provides an element of security that is otherwise unobtainable with respect to retirement benefits, when such benefits are provided in the context of a defined benefit plan. There is a sense that adequate retirement income can be provided through defined benefit plans when coupled with Social Security.

I think the adequacy of benefits under a defined benefit approach, as well as the security resulting from the PBGC program and the comprehension which workers have towards such plans are all significant reasons for employers—certainly large industrial employers—to be interested in maintaining them.

MR. HOLAN: I would like to speak to that in terms of the actual figures that are coming about. There has been a lot of talk about the drop-off in defined benefit pension plans, but part of the problem rests in the way the Internal Revenue Service was interpreting figures. In 1974, prior to ERISA, money-purchase pension plans were included in the category of pension plans. Profit sharing plans were considered along with stock bonus and thrift plans. After 1974, with the installation of the two terms, defined contribution and defined benefit, there were some problems with reporting. We had quite a bit of contact with the IRS saying, let's divide them.

Last year, there were 482 newly approved stock bonus plans covering over a million participating employees. The average number of participants per plan was 2,165 and there were 37 terminations. There were 30,000 new profit sharing plans with an average of 25 participants per plan. There were 19,706 new money-purchase pension plans with an average of 10 participants per plan. There was a total of 18,849 defined benefit plans adopted with an average of 95 participants per plan.

When you combine the 18,849 defined benefit plans with the 19,706 money-purchase pension plans, you come up with a figure of about 38,600 pension plans under the old system versus 30,000 profit sharing plans. This was the pattern for at least ten to fifteen years. So, I would suggest to you that defined benefit plans are not being dropped.

Defined Benefit and Defined Contribution Plans: A Corporate Perspective

Robert B. Peters

Introduction

From the corporate perspective, the decision over whether to provide a defined benefit plan or a defined contribution plan is based on reconciling three major factors. These include the company's: (1) financial position; (2) competitive posture; and (3) perception of its employee's retirement needs and its responsibility to satisfy those needs.

Among the top fifty Fortune industrial companies, thirty-seven have *both* a defined contribution plan and a defined benefit plan. Two of these companies have only a defined contribution plan while the remaining eleven offer only a defined benefit plan.

These statistics clearly show that, at least among the largest American corporations, a defined contribution plan and a defined benefit plan serve to complement one another. Together, they are the solution to the financial, competitive and personnel needs of the corporation. Recent trends, however, illustrate that when a company is first starting a plan or is forced to maintain only one type of plan, a savings plan is often the preferred choice. This trend is due primarily to the investment risk as well as the administrative burdens associated with the defined benefit pension plan.

Defined Benefit Plans

Corporate Financial Requirements

(1) *Investment Risk*—A qualified pension plan promises to pay a fixed benefit at retirement. The amount is usually related to both an employee's length of service and final compensation. Presently, a very competitive plan replaces 50 to 60 percent of final income after a thirty-five year career. Due to recent economic conditions, the cost of providing such a plan to a given employee population could fluctuate anywhere from 6 to 20 percent of payroll.

Additional costs may be incurred if the employer gives credit for service before the plan was adopted and if the employee population is significantly older than an average employee group. This range is considerably wider than estimates of ten to fifteen years ago and is unacceptable to many employers.

Overall, the large variation in defined benefit plan costs is due primarily to investment risk. Under a pension plan, a corporation underwrites the risk of promising a particular benefit level. It, therefore, assumes the risk of rising costs related to unknown investment fluctuations. Employer contributions to a savings plan, on the other hand, are tied strictly to payroll and profits.

(2) *Impact of Inflation*—As recently as fifteen years ago, long-term interest rate assumptions used by pension plans were very close to the short-term interest rates. Salary improvements could also be projected with a good deal of accuracy. It is not news that inflation has significantly altered this situation. During the 1970s, salaries and inflation often rose faster than investment yields. Employers began to pay for pensions with dollars more valuable when they went into the fund than when they came out, even when investment gains were factored in. Employers' pension costs thus began to accelerate faster than payroll—an untenable position for most employers.

If this situation, where there is no *real* interest gain, were to persist, prefunded pension plans could quickly become obsolete. Indeed, defined benefit plans are virtually unknown in countries suffering from chronic high inflation, where defined contribution plans and terminal indemnity plans are the rule. By funding retirement through defined contribution plans, the promise of a fixed income replacement level is avoided and investment risk is shifted to employees. In recent years, American companies have also found that converting from a pension plan to a savings plan can be an effective strategy in controlling escalating benefit costs and in dealing with uncertain business conditions.

The Great Atlantic and Pacific Tea Co. (A&P), for example, recently terminated its $550 million pension plan, replacing it with a savings plan. This action has allowed the company to take back $200 million in surplus plan funds which it is using to restructure its organization. The establishment of a defined contribution plan will allow A&P greater control over its future costs. This will permit it to shift more of the burden for retirement savings to its employees by encouraging them to make tax-deductible contributions to its new savings plan.

Inflation has not only played havoc with pension plan funding; it also has caused pensioners to look to their former employers for inflation relief, further placing companies in the difficult financial position of granting postretirement increases.

(3) *Current Economic Conditions*—The current disinflation/high interest rate climate may not only cause these inflation-induced funding problems to abate, but may actually provide the opportunity to reduce pension plan costs. For example, with high interest rates, a corporation

might consider insuring large blocks of pension liability, considerably decreasing future plan costs.

With this new set of uncertain economic circumstances comes yet a new employee demand—pressure for a retirement benefit in one cash payment—in lieu of an annuity. This is offered by many but not all plans. Increasing numbers of employees are viewing this type of settlement option as a way of capitalizing on present interest rates by investing their lump sums in high yield investments. Investment earnings alone may produce sufficient retirement income, allowing a large amount of principal to be maintained.

(4) *Contingent Liability*—Another key financial problem associated with defined benefit plans (but not with savings plans) is the corporation's contingent liability to the Pension Benefit Guaranty Corporation (PBGC). The PBGC was set up to insure employees against the loss of at least part of their pensions in the event their employer terminates their plan. This is often the case in corporate bankruptcies or during mergers and acquisitions.

Employers must pay the premium on this insurance, which for single-employer plans is proposed to be $6.00 per participant—six times higher than the original rate in 1974. If a company terminates an inadequately funded plan, it is liable for payments made by PBGC to the company's employees in an amount up to 30 percent of the company's net worth. This contingent liability is an especially important issue for the small or marginally stable company, adding another element of risk to an increasingly costly employee benefit.

Most recently, the multiemployer plan termination program added a new financial responsibility to employers who contribute to multiemployer pension plans. This law requires an employer withdrawing from this type of plan to continue funding a share of the plan's unfunded vested benefits. Unionized employers have vigorously opposed the imposition of this new liability, because they believe it will result in inhibition of potential sales and mergers and a negative impact on credit.

Do all these financial problems mean that defined benefit plans will not be adopted in the future, or will be somehow phased out over time? Not necessarily. Despite the economic risk, there still are significant reasons for maintaining a pension plan.

Competitive Pressure—As previously mentioned, competitive pressure plays a major role in determining the type of plan as well as the benefit levels offered by a company. In the oil industry, for example, all of the major integrated oil companies maintain both a pension plan and a profit sharing plan. It is possible that the type of program offered by a company may not exactly mesh with its financial and philosophical positions on benefits, but will be dictated to varying degrees by competitive factors.

For this reason, benefit plans are viewed as another cost of doing business within the firm's competitive environment. Needless to say, collectively bargained groups also play a significant role in determining both hourly and salaried workers' pension and/or profit sharing benefits.

Satisfying Employee Needs Through Pension Plan Design—A pension plan may be selected precisely because it is the only type of program which permits the employer to design a pension formula that takes both sources of retirement income—Social Security and company benefits—into account. By doing so, a firm can provide higher paid employees with a proportionately greater company pension. This compensates for the fact that these individuals receive a lower percentage of final earnings from Social Security.

A final-average-pay-based pension plan may also be necessary to reward an employee whose salary has increased rapidly or whose service was relatively short. Additionally, only a pension plan can reward past as well as future service and base the total benefit on final average pay. Finally, some companies believe that since they are in a better position to assume investment risk, a defined benefit plan is a more appropriate retirement income vehicle.

Defined Contribution Plans

Controlling Current and Future Benefit Costs—In contrast to the financial risk underlying a pension plan, the defined contribution plan, when used alone, can be a means of controlling corporate benefit costs. Under a profit sharing plan, employer contributions can be discretionary from year to year and when made, must be from profits or accumulated earnings. Because contributions are generally based on a percentage of payroll, annual costs are always known. The defined contribution plan may also alleviate protracted record keeping—once an employee is *cashed out*, there is no obligation to *track* this employee in the future.

Moreover, a defined contribution plan can avoid the pension plan's inherent commitment to *income adequacy*, thereby eliminating certain pressures for benefit improvements and cost-of-living increases. During inflationary times, a defined contribution plan, when offered in addition to a pension plan, can be communicated as a retirement income supplement. This avoids the risks involved in pension indexation and perhaps alleviates pressure for postretirement increases.

Shifting Investment Responsibility to Employees: Satisfying Certain Employee Financial Needs—The present interest in profit sharing plans is related to two increasingly important corporate objectives. First, through a defined contribution plan, the employer can place much of the responsibility for retirement savings, and for the investment of those savings, with the employee. Because most defined contribution plans are contributory, these programs serve as incentives for employees to take on greater responsibility for retirement savings. This trend toward shifting investment risk to employees relates back to corporations' increasing reluctance to accept the financial risks underlying pension plans. However, it also ties in with a gradual loosening of traditional *paternalistic* attitudes of many corporations. In this vein, the defined contribution plan is clearly consistent with slowly evolving trends to provide new *flexible benefit* programs, which by design leave benefit decisions to the employee.

Second, the defined contribution plan serves a purpose which the defined benefit pension plan often cannot. It can provide for employees' capital accumulation needs (e.g., assist the employee in financing a home, children's college education or even a *second* career after retirement). The defined contribution plan provides corporate assistance in these areas, while giving employees the opportunity to systematically save for these needs on a convenient payroll deduction basis. Moreover, in a defined contribution plan, loans are often available from savings plans which provide access to plan funds during active service without incurring taxable income.

Another advantage of the defined contribution plan is its use as an incentive program, since company contributions are often directly linked to annual profits. Additionally, employer stock is often acquired by employees through their savings plans.

New Tax-Deferral Techniques Under Defined Contribution Plans—Most recently, corporations have been attracted to new tax-deferral opportunities available under defined contribution plans.

(1) *ERTA Tax-Deductible Contributions*—The Economic Recovery Tax Act (ERTA) of 1981 has made it possible for employers to offer a tax-deductible IRA-type arrangement through their tax-qualified plans. Unlike other savings plan provisions, this tax-deductible feature is to be used exclusively for retirement savings purposes, since tax penalties are imposed on withdrawals made before age fifty-nine and one-half.

Most companies offering these arrangements do so through their existing savings plans under which employees can make their own investment choices for retirement savings. IBM is an example of a company which until now offered a pension plan alone, but recently instituted a voluntary savings plan designed solely to permit employees to take advantage of tax-deductible contributions on a payroll-deduction basis.

(2) *401(k) Arrangements*—Another new tax-deferment scheme is the *salary reduction* arrangement, also known as a 401(k) plan, which refers to its section in the Internal Revenue Code. This feature, not available under pension plans but only under profit sharing plans or stock bonus programs, promises even more flexibility and potentially greater tax advantages than under the ERTA tax-deductible provision. While the rules are complex, a 401(k) arrangement allows employees to elect to defer part of their pay, which is contributed to the savings plan and excluded from current income for federal tax as well as for Social Security tax purposes.

From the corporate perspective, the 401(k) option is one of the best planning tools to appear in years. It affords companies an excellent opportunity to provide tangible incentives to employees to save for their retirement. Since savings lower taxable income, the company can show that moderate 401(k) savings plans result in little or no reduction in take-home pay, a key factor in boosting employee savings. Honeywell and Mobil are two major corporations which have started the 401(k) program. More are sure to follow.

Conclusion

The corporate viewpoint on the defined benefit versus defined contribution issue is formed by various competing factors: (1) whether its financial position can sustain the economic uncertainties posed by a defined benefit plan; (2) the extent to which competitive factors determine benefit levels and types; and (3) the corporation's perception of its responsibility to provide for employees' retirement and other financial needs.

Future benefit decisions will obviously depend on how the economy and business conditions progress. However, if recent trends prevail, it appears that corporations will look to greater flexibility, risk reduction and incentives for employee savings, spawning heightened interest in savings and profit sharing programs.

Discussion

MR. BARBER: I would like to clarify one point. Mr. Peters, your statement, as well as an earlier statement, implies that only defined contribution plans are capable of providing loans to participants for college education for children, housing or whatever. I would just point out that section 408(b)(1) of ERISA specifically provides for loans to participants in defined benefit plans as well.

MR. PETERS: That is true. I do not know to what extent it is utilized.

MR. SALISBURY: I would like to ask the panelists to adjust their assessment slightly by considering changes in national policy which are currently being analyzed by the Congress. One of those changes would be to eliminate the provision for integration between corporate pension plans and Social Security. A second change would be to fairly substantially reduce the allowable contribution limits under section 415 of the Internal Revenue Code while at the same time removing the cost-of-living adjustment provisions so that those limits would be capped in the future. A third change would increase the KEOGH contribution limits to the same levels as the corporate defined contribution limits. What are the implications?

MR. PETERS: Taking those questions one at a time, I will refuse to address the last. Elimination of integration from the corporate viewpoint would be the most detrimental of those that you mentioned. First of all, it makes no sense from a planning point of view. You cannot provide for an individual's needs, ignoring some other provisions that are being made. If integration were not allowed, for whatever reason, in a defined benefit program, defined benefit levels would have to be lowered accordingly. You would lose, I suppose, what a lot of corporations call the opportunity to supplement the higher paid employee for his proportionately lower Social Security benefits.

There would have to be some form of flat benefit. I know, for example, in a corporation the size of Mobil, if we did not take into account the Social Security benefits attributable to employer-only contributions to Social Security, our plan's liability would be significantly increased by hundreds of millions of dollars. You do not design a benefit program ignoring the fact that you are participating in replacement of after-retirement earnings from Social Security. Levels would have to come down. It certainly would be a major factor.

MR. KLINE: Most of the steelworker plans are not integrated with Social Security. They, too, reflect the availability of Social Security retirement income, but they reflect it in a somewhat different manner than Mobil does. As a result, I think a prohibition of either additional integration, or integration altogether, would not have a direct impact on steelworkers' plans.

MR. PETERS: There is one other point I wanted to address regarding Dallas's question. This idea of changing section 415 limitations – the ERISA maximums—provides an interesting debate over whether or not it is revenue raising or whether it is just a question of revenue acceleration. Those who are limited by the ERISA maximums are the higher paid people, primarily in the maximum tax bracket. When a corporation is not allowed to fund for a pension, but is allowed to claim a tax deduction under a supplemental program, the company simply has a deferral of its tax deduction and an enhanced use of corporate funds until such time as payments are actually made. So, although I know it is touted as being a potential revenue raiser, I really question whether it is.

MR. DANKNER: Yes, I would like to comment briefly on the third part of the proposal, and that is having more equality between the Internal Revenue Code provisions dealing with entities that are not incorporated and those that are incorporated. I think that equalization of deduction limits would be a positive provision. It may eliminate the need for individual corporations of professionals and other techniques that have been used over the years. It certainly could simplify how entities that are organized in the form of a partnership or other self-employed individuals save for retirement income.

Defined Benefit and Defined Contribution Plans: A Participant's Perspective

Edith U. Fierst

Employers rarely ask their employees whether they would prefer a defined benefit plan or a defined contribution plan, and employees would not know how to answer if they did. In most cases, employees are so pleased to be covered under a pension plan of any kind that they do not look behind it at pertinent defects for their own security (such as slow vesting). Thus, this paper has few predecessors.

In preparing this paper, I discovered that the type of plan which is preferable often depends upon the circumstances of the individual employee. Accordingly, this paper will address the comparative advantages to participants in connection with a number of specific factors. Included are the risk of loss or advantage of gain from investments; the age of the participant when the plan is founded (or when he or she becomes eligible to participate); portability; inflation protection; the sex of the participant; the clarity of the plan; integration; the effect on the surviving spouse; and breaks in service. As will become clear, the type of plan that is preferable for a particular participant depends upon his or her circumstances.

Risk of Loss, Advantage of Gain

The distinction between defined benefit plans and defined contribution plans that is most frequently cited as the major difference is the distribution of the risk of loss in the event the plan assets are unwisely invested, or the distribution of the rewards if the investments are profitable. In the case of defined benefit plans, the employer makes up the difference if investment experience is poor or reaps the profit if investment experience is good. The participant is assured a specified level of security. Moreover, if the employer is unable to fund the plan adequately, the employee can look to the Pension Benefit Guaranty Corporation (PBGC) for a guarantee of his or her benefits up to the statutory maximum. On the other hand, if the investments are profitable, the employer can derive the advantage and reduce his plan contributions substantially.

In the case of defined contribution plans, both the risk and the possibility of profit are with the participants. Sometimes the plan's investments may be very profitable with a resulting bonanza for employees. In other cases, the investments are not profitable and benefits may be scanty. Indeed, if the plan is a profit sharing plan, the employer may make no contribution whatsoever for years of an employee's career, and this may result in low benefits.

Age of the Participant When the Plan Is Founded

A participant who is young when he or she enters employment or when the plan is started (if this occurs later), probably will find a defined contribution plan preferable to a defined benefit plan. During the years between entry into the plan and retirement, there will be plenty of time for the participant's individual account to earn interest and for the interest to be compounded over and over. Some of the advertising in connection with the new individual retirement account (IRA) law suggests that the accumulated and compounded interest can reach astonishing levels over forty years—possibly in the millions of dollars. However, as commentators on the IRA boom have pointed out,[1] these substantial earnings from IRAs have been predicted largely by persons who expect: (1) inflation to continue to soar; and (2) interest to be roughly 2 percent greater than the rate of inflation. If inflation should slacken, most observers expect earnings in IRAs and other defined contribution plans to drop. Moreover, if the inflation rate remains elevated, IRA earnings will not become the bonanza they promise to become. Instead, they will provide only slightly more than necessary to enable the money contributed to stay even with inflation. The same reasoning also applies to other defined contribution plans and as I will discuss, it is highly optimistic to assume that investments will always surpass the rate of inflation. Thus, some of the advantages of a defined contribution plan may be illusory, even for the young.

A participant who is not young or new on the job when the plan is founded will be better off with a defined benefit plan. First, there is no need for the participant's individual account to earn interest; the amount of his benefit is specified in the plan and does not depend upon the interest earned on the contributions in his behalf.

Second, in defined benefit plans (unlike defined contribution plans) there is a potential for the employee to be given past service credit. This is particularly likely to occur if the plan is started by a small employer when the boss is middle-aged or older and thinking about his own retirement. Unless an employer provides past service credit for employees, the employer cannot take past service credit for himself; without it, his own pension may be meager. An analysis made by the American Society for Pension Actuaries (ASPA) on behalf of the President's Commission on Pension Policy found that more than 90 percent of the defined benefit plans surveyed provided credit for service prior to the establishment of the plan.[2]

Because a defined benefit plan may be so advantageous to an older employee and so disadvantageous to the employer, the Employee Retirement Income Security Act (ERISA) permits defined benefit plans to exclude from coverage employees hired within five years of normal retirement age. This is not permissible if the plan is a defined contribution plan.

If the participant continues to work after normal retirement age, the advantages to him or her of being covered under a defined contribution plan become greater. Under the Age Discrimination in Employment Act, employers are not required to make contributions to defined benefit plans on behalf of employees who are past normal retirement age. They are, however, required to do so for employees between the ages of sixty-five and seventy in defined contribution plans, if the plan is supplementary or if the contribution has its source in forfeitures or experience gains.[3] Thus, employees who are older than the normal retirement age may do better under these plans.

The *Wall Street Journal* reported in its Monday, April 5, 1982 issue that only about half of major employers provide increased benefits to workers based on employment beyond normal retirement age. The ASPA study found that among small defined benefit plans covering 100 or fewer participants, 70 percent provide actuarially increased benefits for employees who work after normal retirement age, while fewer than 25 percent offer accruals after normal retirement age or consider salary increases beyond that age. Among larger plans which provide additional benefits beyond the specified normal retirement age, ASPA found that 33 percent provide the benefits through continued accruals, 24 percent provide the benefits through recognition of post-normal-retirement age salary increases and 29 percent provide the benefits through actuarial adjustments.[4]

Smaller employers appear to be more generous to employees after normal retirement age, perhaps because many of them want to accrue after-retirement benefits for the boss (i.e., professional employees in professional corporations). They can do this only by providing for accruals to continue and for increases in compensation after retirement to be taken into consideration in determining the final average compensation of all employees, or by providing actuarial increases for work after normal retirement age. The last named are usually better for employees than continuing accruals in dollar amounts.

Portability

From the perspective of portability, defined contribution plans may be preferable because they generally make it feasible for employees who terminate employment with one employer to take their account balances with them. If the employees wish, they can roll over their account balances (derived from employer contributions or from exempt voluntary employee contributions) into individual retirement accounts and keep the money there earning interest until retirement age.

Looking at the option from the perspective of public policy (maternalism, if you will), one must note that there is no requirement that employees take advantage of the rollover possibility, and indications are that most people do not. Instead, many spend their withdrawn account balances. From a tax point of view, ten-year averaging makes this possible at any age, and the money undoubtedly comes in handy for any of the obvious purposes that arise during a career. Leaving aside extravagances like a trip to Europe, there may be a need for money for a down payment on a home or college education for children. Sometimes the funds are required to supplement unemployment insurance. If the money is used in any of these ways, the employee is worse off at retirement age (though not midcareer) than if he had been covered by a defined benefit plan and required to leave the money in the plan during the period after termination from one job and until the age when the plan permits the employee to draw benefits.

Inflation Protection

A related question is: What happens to the value of the benefit during inflationary periods? Most plans, both defined benefit and defined contribution, gear pension accruals to compensation, thus assuring adjustment of future benefits commensurate with wage increases. Once the employees have terminated or retired, however, the situation changes. This paper has alluded to the fact that defined contribution plans generally earn higher rates of interest during inflationary periods which is an advantage to their participants. By contrast, in defined benefit plans, while the fund may profit from higher rates of interest, the ultimate gainer is the employer rather than the participants. During periods in which there is high inflation, defined contribution plans tend to be inherently preferable for participants.

Increases provided by employers to their retired employees through defined benefit plans (they are rare in defined contribution plans) counteract this conclusion to a minor extent. According to a 1981 survey by Towers, Perrin, Forster & Crosby, Inc. (TPF&C), only 3 percent of the large United States corporations they surveyed have automatic cost-of-living increases. Provisions in these plans limit increases in any one year to 3 or 4 percent.[5] Many of the other companies they surveyed (all of them large) do raise benefits on an ad hoc basis (instead of automatically) to help their former employees cope with inflation. However, these increases do not come close to meeting the real cost of inflation. For example, TPF&C found that median increases for pensioners who retired January 1, 1970 have brought their original pensions up by 24 to 39 percent. During the same period, inflation raised the cost of living by 136.2 percent.[6] Thus, these pensioners lost approximately one-half the value of their benefits.

TPF&C makes the argument that the Social Security cost-of-living adjustment (COLA) made up for an important part of this loss, especially for participants with modest pensions. These retirees certainly experienced the least loss of purchasing power, because Social Security is a larger portion of their retirement income. TPF&C also argues that the loss incurred by retirees has not greatly exceeded that experienced by active workers. Even if both of these arguments are true, nearly all retirees covered by defined benefit plans have undoubtedly suffered a significant loss of income. Furthermore, not everyone received automatic or ad hoc increases in their private payments. TPF&C's survey was of large companies, many of them subject to collective bargaining. Smaller companies are not as generous.

In addition, it should be stressed that increases in private pension benefits are paid to retired employees and also, in most cases, to their survivors receiving benefits. It is rare that they are paid also to vested terminated employees. Even the federal government, which is in most respects exceptionally liberal in paying benefits to its retired employees, excludes vested terminated employees from inflation protection. They are barred from cost-of-living increases between their time of departure from federal employment until retirement at age sixty-two. Although those terminating from federal employment can withdraw their account balances, they cannot roll them over into IRAs. This ungenerous policy has kept the federal government filled with disgruntled employees who know the exact day they are eligible to retire. Their situation is worse than that of private employees for whom Social Security continues to be indexed even if they change jobs. Many would look for another job if they could afford to leave, but the necessary sacrifice of their retirement security makes such an option impossible.

Sex of Participant

Another factor that affects the desirability of defined benefit plans versus defined contribution plans is the sex of the participant. Historically, defined contribution plans have often provided greater monthly benefits for men. This policy has been based on the fact that women live longer on average than men and, thus, will receive payments for a longer period of time. This may make sense to actuaries, but it is unfortunate for old women who need an income as much as old men. Looking at it from the perspective of women and in the face of today's need for money, there is scant comfort that over a longer life span women will get benefits whose actuarial value equals the larger monthly sums payable to men.

The Supreme Court has pointed out in the *Manhart* case that any individual woman may live a shorter time than any individual man;[7] and they held it to be discriminatory to require women to make larger mandatory contributions in order to receive equal monthly benefits. The *Manhart* case did not require the Court to pass on unequal monthly *benefits*—only on unequal *contributions*—and the Court did not do so. Moreover, the Court commented that they did not intend to revolutionize the pension business.

Despite this caveat, the lower courts are uniformly construing *Manhart* as requiring the payment of benefits, as well as contributions, in defined contribution plans to be gender-free.[8] The sole problem has been how to get from today's widespread use of gender-based tables, to tomorrow's general use of unisex tables, without harming individual men; because these men may be expecting and relying on larger monthly benefit payments than they would get if the money were redistributed to provide equal monthly payments. The Supreme Court did not make the *Manhart* decision retroactive.

Most observers would agree that it is not fair to take promised money from men to fund more generous benefits to women. There is, however, disagreement over whether such promises have been made or should have been accepted as such. This disagreement is in view of the regulations issued in 1972 by the Equal Employment Opportunity Commission (EEOC) under Title VII of the Civil Rights Act, construing the Act to require payment of equal benefits.[9] Doubt about the status of these regulations exists, however. Therefore, the date from which they should be deemed to apply remains unsettled. Women's advocates are unwilling to apply the change to prospective contributions only, lest the transition be lengthy; because it could be forty or fifty years before everyone who retires will receive benefits entirely computed on a unisex table.

There is little likelihood that nature will solve the problem by narrowing the discrepancy in life expectancy between men and women. Indeed, the discrepancy is growing and is expected to continue to grow. As shown in Table 1, it now exceeds four years at normal retirement age despite the increasing participation of women in the labor force.

Until the problem is solved, women—but not men—may be better off under defined benefit plans than under otherwise equivalent defined contribution plans. Almost without exception, defined benefit plans pay equal monthly benefits, regardless of sex, to employees who retire at normal retirement age and elect life annuities. If there are differences, and there rarely are, they affect other forms of payment such as early retirement. At one time, women who elected early retirement benefits from a defined benefit plan might have received *higher* monthly benefits than their male counterparts. The reason was that the relative cost to the employer was the same. This result was so patently indefensible ("somewhat nonsensical" in Paul Jackson's reasoned analysis)[10] that most employers have now swung over to

TABLE 1

Historical and Projected Future Changes in Life Expectancy of an Age 65 Retiree, 1940–2040

Year	Male (years)	Female (years)
Life expectancy of worker retiring at 65 in:		
1940	12.1	13.6
1950	12.7	15.0
1960	13.0	15.8
1980	14.2	18.8
2000	15.5	21.2
2020	16.1	22.0
2040	16.6	22.8

Source: Office of the Actuary, Social Security Administration, June 1981.

equal monthly benefits at early retirement age. This means that women may have lost an advantage over men at early retirement, but they are no worse off than the men.

There is a remaining possibility for unequal monthly benefits under defined benefit plans that arises when the employee elects a joint and survivor benefit. Inasmuch as men are more likely to be survived by their wives, and for longer periods than women employees are likely to be survived by their husbands, many plans reduce benefits payable to men who elect survivor annuities by a greater factor than benefits payable to their female counterparts. This too is a dying phenomenon; its disappearance was propelled by the courts. In a recent decision, *Probe v. State Teachers Retirement System*,[11] decided in September 1981, a United States District Court in California held that payment of lesser monthly retirement benefits to male employees constitutes discrimination prohibited under both Title VII of the Civil Rights Act and under the Equal Pay Act. It required the employer to make up for any discrepancy in past payments.

An interesting note: The *Probe* court mentions that only 17 percent of women employees in the plan under review elected survivor annuities compared to 52 percent of male employees. The court did not state what proportion of either sex was married, and a differential in the proportions married may explain the differing percentages who elected to take care of spouses.

Under the federal retirement system, when the amount withheld from the annuity is set by statute, is less than the actuarial cost and does not vary by either the age or gender of the employee, approximately 90 percent or more of the men elect survivor annuities, compared to approximately 60 percent or more of the women. Looked at from a financial perspective only and leaving aside the issue of unisex tables, the federal survivor benefit may be seen by retirees as a far better buy for men. The reason is that women typically marry men three years older than themselves, but they pay the same rate to provide survivor annuities as men do for their younger wives. This means that women who retire from the federal system must pay much more proportionately than they would under private plans where the age difference is reflected in the cost. Moreover, federal retirees have been advised through the Civil Service Retirement System's application form that any reduction they elect to pay for a survivor annuity is permanent. Thus, their benefits would continue to be reduced by the statutory amount even when their husbands are dead, which is likely to be six or seven years in the average case, and much more if the age differential between the spouses is greater than three years.

As it happens, the federal law was amended in 1974 to provide that if a spouse predeceases a retired worker, the reduction will be ended on notice to the Office of Personnel Management (OPM). As a result of a lawsuit in which I am one of the attorneys for the plaintiffs, OPM is sending a notice to all annuitants who retired after the effective date of the 1974 law and who elected less than a full survivor annuity. OPM is advising them that the application form was wrong and asking them if they wish to change their elections. A similar notice will go to survivors of federal employees who retired after 1974 and provided less than a full annuity to their widow(ers), giving them the opportunity to show that their spouses' elections were based on the incorrect information. It is not yet known how many women retirees will want to change their elections.

The extent to which the feminist movement has overcome the old-fashioned idea that only the husband has responsibility as a family breadwinner is a significant sociological question buried here. Some women who have not elected benefits for their husbands believe that their pensions were based on only a few years of employment and are too small to be worth the trouble; or, they believe that their husbands are well cared for from their own employment. These are both substantial reasons for not providing survivor benefits for husbands. However, there may also be a difference in the comparative sense of responsibility, which may change as the feminist revolution continues with its philosophy that marriage is an economic partnership.

Clarity of the Plan

Defined contribution plans are unquestionably easier for employees to comprehend than are defined benefit plans. The latter are often larded with actuarial concepts that only the initiate can understand. They employ complicated formulas for benefit accrual and make reference to such obscure concepts as the *present value of accrued benefits*, which are well beyond the comprehension of most plan participants. Even the summary plan description rarely explains a defined benefit plan in terms that a participant can utilize to compute his or her own benefit. This is necessarily true, as the theory of the plan and the ability of the average participant without an actuarial education to understand it, are mutually incompatible. This difference is not taken lightly, especially in cases where there is no labor organization to assist the participant's understanding. In the absence of such assistance, the participant who has a need to understand the provisions of his or her plan (e.g., at divorce or employment termination) may have to retain expensive professionals for advice as to what his or her benefit is worth. This is a distinct disadvantage of defined benefit plans.

While participants of defined contribution plans may not be able to convert the current value of their individual accounts into an equivalent income stream at retirement age, that conversion is easier to understand than the reverse. Any bank or securities firm will cite possibilities for the former free on request.

Integration

According to the previously cited ASPA study, defined benefit plans are far more likely to be integrated than defined contribution plans. While the proportion of integrated plans in the survey varied with the size of the firm, about 70 percent of defined benefit plans were integrated compared to less than one-third of defined contribution plans.

One could speculate about the reasons for this difference. For example, many defined contribution plans may be supplemental to defined benefit plans. Whatever the reason, however, it is better for the average participant if his or her pension is not reduced by integration. Only the highly paid have the possibility of being helped by integration and, then, only if the same total amount is contributed and redistributed to them under an integrated formula.

Effect on the Surviving Spouse

From the perspective of the surviving spouse who looks to the employee's pension plan for support during widowhood, the defined contribution plan is probably better. The reason for this is that in a defined benefit plan, if the employee has not elected a joint and survivor annuity in accordance with ERISA's arcane requirements, the widow may get nothing (unless her husband dies before retiring and was employed by a company which provides preretirement death benefits where ERISA does not require them). Therefore, the employer is likely to inherit the employee's entitlement. By contrast, in a defined contribution plan, the surviving spouse has a good chance of being heir.

Breaks in Service

Break-in-service rules are allowed to be harsher in defined contribution plans than in defined benefit plans. An employee who incurs a break in service in a defined contribution plan may lose accruals from any previous nonvested service even if he or she later returns to the same job. In the case of defined benefit plans, ERISA protects participants against loss from a break in service if the employee returns to the same employment before incurring a parity break (that is, one as long as the period of employment prior to the break in service). This differential can be particularly important to women who leave their jobs temporarily to bear children and to care for them in preschool years.

Conclusion

It is impossible to say whether a defined benefit plan or a defined contribution plan is better for a participant without knowing the particular situation of that participant. Many factors can influence the choice. Because of these variables, government policy should be neutral regarding the two types of plans. Improvements for participants can come by raising critical standards for both types of plans.

Notes

1. See for example, *Washington Post* editorial, February 14, 1981.
2. American Society of Pension Actuaries, *Report to President's Commission on Pension Policy*, December 1980, p. 18.
3. *Code of Federal Regulations*, 29 *CFR* 860.120(f)(iv)(B). Costs and Benefits Under Employee Benefit Plans.
4. American Society of Pension Actuaries, *Report to President's Commission*, p. 21.
5. See Towers, Perrin, Forster & Crosby, Inc., *Pension Increases for Retired Employees*, November 1981. At the meeting, Everett T. Allen, Jr., Vice-President of TPF&C, argued strongly that the consumer price index (CPI) significantly inflates the actual increases in the cost of living.
6. U.S., Congress, Senate, Committee on Finance, *Staff Data and Materials Related to Social Security Financing*, September 1981, table 28, p. 50.
7. *Los Angeles Dept. of W. & P. v. Manhart*, 435 U.S. 702, 98 Sup. Ct. 1370, 55 L. Ed. 2d 657 (1978).
8. See, for example, *Spirt v. Teachers Insurance and Annuity Association*, 475 F. Supp. 1298 (S.D.N.Y. 1979): *Peters v. Wayne State University*, 476 F. Supp. 1314 (E.D. Mich. 1979); *Henderson v. Oregon*, 405 F. Supp. 1271 (D. Ore. 1975).
9. Prior to 1979, when the Department of Labor (DOL) had jurisdiction over the Equal Pay Act, it construed the Act to permit employers to provide either equal contributions or equal benefits. The Bennett Amendment to Title VII of the Civil Rights Act preserves the legality of any discrimination *not* based on sex which is permissible under the Equal Pay Act, thus throwing doubt on the standing of the *EEOC* regulations. However, the Supreme Court held in *Manhart* that the Bennett Amendment did not protect unequal contributions because they *were* discriminatory based on sex. The logic of this decision makes it appear that the Bennett Amendment does not protect unequal benefits either. No one is sure. Although EEOC has published a proposal to do so, it has not yet changed the old DOL rules permitting unequal benefits if contributions are equal.
10. Paul Jackson, "Unisex Mortality Tables," *Wyatt Washington Commentary*, February 1981.
11. 27 Fair Employment Practice cases 1306.

Discussion

MR. SCHIEBER: For the defined contribution plan, the status of investments upon retirement is only important if you withdraw the total amount of your account. Instead, if you take the balance on a life annuity or if you use it on a piecemeal basis throughout your retirement, there is a good chance investments would recover.

MR. HOLAN: That comment speaks to another point. In profit sharing plans, 80 to 85 percent of the payoffs are in lump sums. The remainder will be in installments. As a result of ERISA, virtually every profit sharing plan eliminated an annuity option. But in a profit sharing plan, the money is there. There is no difference for a man or a woman. Should the employee elect installments, the installments will be the same. There are no joint and survivor problems, because the wife, if she is designated as the beneficiary, gets it all.

MR. ALLEN: I must make a comment about the TPF&C indexing report since Edith referred to it. The report dealt with a specific aspect of the CPI indexing of Social Security. While I agree with Edith that it is quite controversial as to whether the CPI is an effective measure of inflation, I think that there are a lot of people who believe the CPI overstates the real loss in purchasing power, particularly for the elderly.

There are a number of reasons for this—the statistical methods used to calculate the change, the fact that the index does not take into account improvements in quality of life as far as retirees as a group are concerned, the fact that income tax changes are not taken into account and the fact that Social Security is a tax-free benefit. Housing is worth about 43 percent of the total index. Seventy percent of the elderly own their own home, and 80 percent have liquidated the mortgage by the time they retire. With a lack of child-rearing expenses and work-related expenses, there is a change in consumption patterns.

So the report considered whether the loss of purchasing power at retirement is lower than the CPI and then tested a number of different assumptions. It assumed a lower rate of real loss of purchasing power. The report concluded that if this is true, then for individuals whose Social Security benefits constitute at least 50 percent of their total income, there is an absolute increase in real purchasing power over time.

MR. HUTCHISON: I would like to raise a question about your definition of portability. I believe I understood you to say that the defined benefit plan is not portable and a defined contribution plan is portable. Is that correct?

MS. FIERST: Pretty much, yes. I will tell you why.

MR. HUTCHISON: What about the deferred vested benefit that you accrue under the defined benefit plan? You do not consider that any type of freezing or entitlement then?

MS. FIERST: Yes, it is. What I really meant was there is no way that you can have that grow. If it is a defined contribution plan, you can take your account balance and put it into an IRA where it will grow. If it is a defined benefit plan, it stays there; and you become entitled to it when you retire, but it is very hard to take it along to another employer or to have it grow in the interim.

MR. HUTCHISON: Let me ask you this though. Does that not represent a segment of what has been earned to that point?

MS. FIERST: Sure. The problem is if you get a second job with another company, you cannot take your account balance along in most cases. You might be able to negotiate something with the second company, but it is not customary for the second company to give you more credit toward its pension. You take your account balance with you, and you begin to accrue and add to that in the second company.

MR. HUTCHISON: What you are asking for is 100 percent vesting and transfer of account balances. Is that right?

MS. FIERST: No, I was really talking about portability there—looking at it from the perspective of the participants. In one situation, the participant may be covered under a very nice pension plan, may be fully vested and may get that pension twenty years later. It is very hard to move that to a second plan, because the second plan may have a totally different formula. Whereas one of them gives x percent of salary, another one is a flat benefit plan. In one case they have early retirement, and in another case they do not. It is very hard to equate these. So, if you have earned a defined benefit in one plan, it stays there.

MR. HUTCHISON: That is correct.

MS. FIERST: And later on you collect it, but it does not grow.

MR. HUTCHISON: It is not a total loss as I inferred from your remarks though.

MR. SEIDMAN: Edith, I could not quite understand why you feel the participant does better with a defined contribution plan than a defined benefit plan in terms of clarity. If the benefit is known to the participant, what aspect of it is unclear?

MS. FIERST: Well, suppose the benefit is x percent of salary at age sixty-five, and you are now fifty-two and you are thinking of leaving. What is the value, and how would you determine whether or what the lump-sum value of that was if you had to convert it?

MR. SEIDMAN: But, suppose it depends on what happens to the annuity during the period from age fifty-two to age sixty-five for the defined contribution plan?

MS. FIERST: Well, in the case of the defined contribution plan, you get a benefit statement which tells you what your account balance is.

MR. SEIDMAN: As of then.

MS. FIERST: As of then, right; but that is the question I was addressing. It is not the only relevant question.

MR. SEIDMAN: No, but it does not seem to me that it is any clearer in terms of what your retirement expectations are at age sixty-five.

MS. FIERST: But lots of people need to know long before retirement, for example, in case of divorce. They need to know what the value of that pension is right now or in case of termination.

MR. SCHIEBER: Couldn't you resolve your problem by going to your employer and asking him what the present value of your defined benefit is at that point in time?

MS. FIERST: You might be able to unless you were doubtful. I told you about the real life case that came to me where somebody said that she had received a payment of x thousand dollars, and the employer wanted $5,000 back.

MR. SCHIEBER: But your employer could also mislead you on the defined contribution plan in that regard.

MS. FIERST: Well, that is true.

MR. SCHIEBER: That is a bookkeeping problem.

MS. FIERST: But you cannot look at the problem of the plan yourself and have the slightest idea of what it is worth.

MR. HUTCHISON: I would like to make an observation here. I wonder if we are not guilty of what Mr. Trowbridge said earlier, of trying to put defined contribution attributes in a defined benefit plan. In other words, what you are saying, Ms. Fierst, about the value of a benefit plan when you terminate employment, is that the participant does get a statement showing he has got a deferred benefit of x dollars beginning at age sixty-five. The only place you would need to know the present value of that benefit, I presume, would be if you are litigating a divorce settlement or property settlement. Otherwise, he knows exactly what he is entitled to as a participant, because it is an income replacement benefit, not a lump-sum delivery device. Are we again trying to make defined benefit plans like defined contribution plans?

MS. FIERST: I was really just describing the situation as I see it. It is a fact that if you have a defined contribution plan, you have an account balance. You can find out what it is and understand it. If you have a defined benefit plan, you have a theoretical claim and it is not easy to figure out, yourself, what it is.

MR. PAUL: Well, it is not necessarily difficult to figure out what the benefit you are entitled to is going to be in dollars. It may be hard to figure out its present value, but that is a different question. Most people do not need to know its present value at any moment in time. They are promised that their pension might be 50 percent of their final five-year pay minus half the primary Social Security benefits. It is easy to describe that to somebody. If you say you are now making \$20,000 a year, and if at retirement you plan to be making \$50,000 a year, your benefit is half of that minus half of Social Security. That is not so difficult a concept to get across if it is done with illustrations and everything else. But, if you say to somebody, what is the present value of your vested benefits, you hit a concept that people do not ordinarily wish to know. If they leave at a point when their benefits are already vested, I think ERISA requires the employer to tell them what their accrued benefit is at age sixty-five. If a divorce issue comes up, you may need to compute a lump-sum value. In the context of an ongoing benefit, that comes up relatively rarely.

MS. FIERST: A divorcing couple needs to know whether the non-working spouse is better off asking for a portion of the present value of the pension or a part of the pension benefit when paid. That involves knowing both figures.

MR. PAUL: Any property that is hard to value has to be appraised and in that respect the actuary becomes the appraiser.

MR. RASKIN: Can I ask you how a spouse would know whether or not he or she was better off with a portion of the account balance now in a defined contribution plan or when it was paid? Isn't the investment performance relative to the value of money over the prospective period of tremendous importance? Isn't that an issue that you cannot find the answer to in a defined contribution plan as well?

MS. FIERST: You can understand it a little better, but there are certainly other problems. I agree with that.

MR. PAUL: It is just easier to compare lump sums of money, if you have them in front of you, than it is to compare a future stream of income payments that you do not know how to compute to a lump-sum value. That is the problem that most people face.

MR. WISKOWSKI: I would think the employee would have as hard a problem if he knew the lump-sum value and needed to make it into an annuity.

MS. BORZI: I just want to comment on the need for employees to know what their future benefits will be under defined benefit plans. This is a factor if they have options for staying with a particular employer or moving on. If an individual employee wants to know how the pension value fits into the total employment decision, he or she has to approach the plan sponsor and ask specifically for that kind of a figure. I think most participants find that a very difficult concept to deal with. I agree with Edith that, at least with respect to an account balance, the defined contribution plan seems to provide a more readily discernible figure for participants to use.

MR. PAUL: I think large employers are working very hard to make available the kind of information you are describing, and they have the resources to do so. I suspect smaller employers have difficulty because they do not have staffs to provide this information. It is not a question of lack of willingness or lack of desire. It is just an economic question.

Government Policy: Implications for Pension Plan Development

Everett T. Allen, Jr.

The vast majority of employees covered today by the private pension system in the United States participate in defined benefit plans. There are, of course, some notable exceptions. Educational and other nonprofit institutions, for example, have favored defined contribution pension arrangements because of the unique tax sanctions granted them under section 403(b) of the Internal Revenue Code. Also, a number of profit making organizations have opted for deferred profit sharing arrangements to serve as retirement plans. Nevertheless, the defined benefit approach was favored by most employers—at least until the passage of the Employee Retirement Income Security Act (ERISA).

This preference for defined benefit plans over defined contribution plans has been due to many factors:

(1) Most employers have specific income-replacement objectives in mind when establishing a retirement plan. A defined benefit plan can be structured to achieve these objectives. The defined contribution approach, on the other hand, will produce plan benefits that fail to meet or that exceed such objectives as they affect individual employees. This depends upon a number of factors such as length of participation, age at retirement, inflation, investment results and the like.

(2) By the same token, most employers wish to take Social Security benefits into account so the combined level of benefits from both sources will produce desired results. Defined contribution plans can be integrated with Social Security benefits to some extent by adjusting contribution levels; however, integration cannot be accomplished as efficiently as is the case under defined benefit plans where such coordination is done on the basis of benefits provided.

(3) The typical defined contribution plan provides that the employee's account balance is payable in the event of death and, frequently, in case of disability. This of course produces additional plan costs or, alternatively, lower retirement benefits if overall costs are held constant. An employer who is interested primarily in providing retirement benefits can use available funds more efficiently for this purpose under a defined benefit plan.

(4) In the view of many, a more equitable allocation of employer contributions occurs under a defined benefit plan since the employee's age,

past service and pay may all be taken into account. In contrast, the typical defined contribution plan allocates contributions only on the basis of pay. (Service is sometimes recognized in defined contribution plans, however, its impact in terms of allocations is rather minimal.) This characteristic of defined contribution plans is one of the reasons they do not lend themselves to achieving consistent income replacement objectives.

(5) A defined benefit plan can be (and often is) structured to provide a benefit that is related to an employee's final pay, thus protecting the employee against the effects of preretirement inflation. Equivalent protection cannot be provided under a defined contribution plan. Thus, in effect, risk of inflation is assumed by employees who must rely primarily on investment results to increase the value of their benefits during inflationary periods.

(6) This last comment raises another issue in the comparison of defined benefit plans and defined contribution plans. Investment risk and reward are assumed by the employer under the former, by employees under the latter. Risk can be minimized by use of selected investment media. Absent such protection, however, many people feel that it is inappropriate for the average employee to assume such risk with respect to a major component of his or her retirement security.

The defined contribution approach, of course, is not without its advantages. Deferred profit sharing plans, for example, offer employers maximum flexibility in terms of cost commitment as well as opportunities to increase employee productivity. Through the use of employer securities as a plan investment, greater employee identification with the company and its goals can also be achieved. Additionally, if the employee group covered is relatively young, the defined contribution plan is apt to have greater employee relations value than a defined benefit plan.

ERISA has had a significant impact on defined benefit plans. Despite the advantages noted, a defined benefit plan now exposes an employer to significant financial liability if the plan is terminated when there are unfunded liabilities for vested benefits. Up to 30 percent of an employer's net worth is subject to a lien in favor of the Pension Benefit Guaranty Corporation (PBGC) if necessary to meet any liabilities assumed by the PBGC in this event. The lien, since it is in the nature of a tax lien, supersedes the liens of any other creditors. The problems of potential employer liabilities were exacerbated by the Multiemployer Pension Plan Amendments of 1980, which created substantial liabilities for an employer who wishes to or who must withdraw from a multiemployer plan that has unfunded vested liabilities. Here, the employer is liable for its share of unfunded vested liabilities (generally on the basis of the ratio of the employer's contributions to total contributions), and there is generally no limit on the percentage of the employer's net worth that can be used for this purpose.

The vast majority of employees who are not covered by a private retirement program work for smaller companies. According to the Employee Benefit Research Institute, 79 percent of such individuals work for firms that employ less than 100 employees. Clearly, these small employers, as well as newly formed companies, are apt to be reluctant to adopt a defined benefit plan and the liabilities that are automatically imposed by ERISA. Many such employers will find the defined contribution alternative, with no such liabilities, to be a more palatable approach—despite the advantages offered by a defined benefit arrangement.

That this is so would seem to be borne out by Internal Revenue Service (IRS) statistics on the establishment of new plans. Since ERISA, approximately 80 percent of all new plans are defined contribution in nature. To be sure, many of these new plans (e.g., savings plans) supplement existing defined benefit plans. However, this is still a higher percentage than was the case prior to the passage of ERISA.

Apart from the plan termination provisions of ERISA and their implicit but significant emphasis on defined contribution plans, it is important to note that the federal government—knowingly or unknowingly—has emphasized the defined contribution approach in many other ways. For example:

(1) Long-standing provisions of the Code (referred to earlier) permit and encourage the use of tax-deferred annuities (defined contribution plans) for employees of educational and other nonprofit organizations.

(2) The basic structure of the Code, as it applies to H.R. 10 or Keogh plans for the self-employed, is strongly oriented toward defined contribution plans. Even though amended to specifically sanction defined benefit plans, the defined contribution approach is still the simplest and easiest way to take advantage of this law. Indeed, almost all such plans have utilized the defined contribution approach.

(3) The IRA concept, instituted under ERISA and substantially enhanced by the 1981 Economic Recovery Tax Act (ERTA), is totally a defined contribution approach.

(4) Beginning in 1979, employers were permitted to adopt a simplified employee pension (SEP). A SEP utilizes the IRA concept but has higher contribution limits and considerably less paperwork than a conven-

tional retirement plan. Again, the defined contribution approach is mandatory.

(5) The Tax Reduction Act of 1975 created a new type of defined contribution employee benefit plan—the investment tax credit employee stock ownership plan, commonly known as a TRASOP. The original law permitted tax credit contributions to those plans only for the years 1975 and 1976. In 1976, the law was amended to extend tax credit contributions through 1983. More recently, ERTA amended the law to provide for the credits through 1987. With this history, it seems reasonable to anticipate continued extensions after 1987.

The original law provided for an investment tax credit contribution. As a result, only a limited number of TRASOPs were adopted—primarily by capital-intensive organizations. An interesting change made by ERTA is that beginning in 1983, the tax credit will be determined as a percentage of payroll rather than with reference to investments. As a result, it is expected that many more employers will institute such plans—referred to as PASOPs—in the future.

(6) Employee stock ownership plans (ESOPs), which are defined contribution plans, have also been the subject of special legislation. As is well known, such plans, unlike defined benefit plans, can be involved with corporate debt financing. In addition, ESOPs have been the subject of special legislation—witness the Regional Rail Reorganization Act of 1973, the Foreign Trade Act of 1974, the Chrysler Corporation Loan Guarantee Act of 1979 and the Small Business Employee Ownership Act of 1980. It seems likely that special interest legislation of this type will recur in the future.

(7) The Revenue Act of 1978 added section 125 to the Code. This section permits the adoption of *cafeteria* or *flexible* compensation plans and provides that an employee can choose between taxable and nontaxable compensation elements without problems of constructive receipt if certain conditions are met. One of these conditions is that deferred compensation plans cannot be one of the choices. However, this section was amended to allow the inclusion of profit sharing and stock bonus plans that meet the requirements of section 401(k) of the Code. Thus, a flexible compensation plan can permit an employee to choose between welfare benefits (e.g., life insurance, disability income, medical expense), cash, deferred profit sharing or savings plan benefits. Again, we have legislation that will have a tendency to encourage the defined contribution approach. This area is particularly significant since interest in flexible compensation plans is increasing and these plans are very likely to become a major factor in the employee benefit planning process of the future.

Some pressures exist to expand flexible compensation legislation so as to include defined benefit pension plans. Even if this does occur, it is still likely that the emphasis on defined contribution plans will remain. There are very real problems involved in trading defined benefits (particularly if they are pay related) for current cash or welfare contributions. It is possible to do this, of course, but it will be necessary to resolve issues of equity and the relative value of choices. In many cases, it will be easier to limit employee elections as to how available dollars can be used—for example, to a choice of purchasing current benefits or of deferring these dollars under some type of defined contribution program. Indeed, it might be said that flexible compensation plans often apply the defined contribution concept to an employer's entire benefit program.

(8) Closely related to flexible compensation plans are the section 401(k) cash/deferred profit sharing or savings plans. These plans are, of course, defined contribution plans. While section 401(k) was added to the Code by the Revenue Act of 1978, significant interest in these plans was not generated until proposed regulations were issued in 1981. A key feature of these proposed regulations is that they permit the use of salary reduction arrangements—an approach that can be very tax effective and which has captured the interest of many employers. Much of the initial interest, of course, is in the conversion of existing plans. However, the approach presents attractive advantages and it seems likely that many new programs will be enacted. Employers who do not have pension plans may find the combination of tax savings for employees and the lesser financial obligations of the defined contribution approach to be an attractive way of establishing a retirement program. This could be particularly true when tied in with an overall flexible compensation program.

What we have, then, is a significant amount of direct legislative activity that has enhanced the attractiveness of various defined contribution mechanisms. However, other legislation may also have an indirect effect that will encourage the growth of these plans. For example, there is a strong possibility that the Social Security *normal* retirement age will be increased to sixty-eight. In addition, workers may be encouraged to remain in the work force beyond normal retirement age if Social Security delayed retirement credits are increased or if the earnings test is liberalized or eliminated.

These changes could affect the planning process associated with defined benefit plans. Most of these plans are designed to produce a specific amount of replacement income, together with primary Social Security benefits, when an employee reaches age sixty-five. The actual income replacement objectives may vary, but they usually reflect the employee's pay level and length of service. While replacement ratios are generally expressed in terms of before-tax income, they are often consciously set with reference to their after-tax value.

The fundamental concept of this planning process revolves around the coordination of two income sources—the private plan and Social Security—usually occurring around the time of the employee's sixtyfifth birthday. However, the idea that sixty-five is a typical retirement age has already begun to diffuse with recent trends toward early retirement. This diffusion will become even greater if the Social Security normal and early retirement ages are changed, especially if accompanied by elimination of permissible mandatory retirement. What may emerge is a concept that retirement age will become highly subjective for each employee. Actual retirement age may range over a span that begins when employees are in their late fifties and extends until employees reach their early seventies. If retirement becomes spread over such a wide range, it will become increasingly difficult to maintain a plan design structure that is predicated on the majority of employees retiring at age sixty-five and the coordination of two income sources at this point. Thus, one of the broad but important implications facing employers is the potential need to rethink their approach to plan design and the basic delivery of retirement benefits. Nonintegrated or indirectly integrated plans and greater use of defined contribution plans are examples of approaches that might be considered. These approaches allow an employer to opt for cost control in lieu of finely tuned benefit levels.

A mandatory private retirement system in the United States is still a long way off—if, indeed, it ever becomes a reality. Yet the possibility exists that such a system will become law, despite attitudes of the current Administration. The President's Commission on Pension Policy, which filed its report in February 1981, recommended that a mandatory minimum pension system be established. More specifically, the Commission recommended that this program be in the form of a defined contribution plan with a minimum employer contribution of 3 percent of compensation. While the Commission did not divulge all of its reasoning in support of this defined contribution recommendation, it is likely that it was perceived as the simplest and most acceptable way of moving into a mandatory system. A mandatory defined benefit program would present a host of issues concerning pay-related benefits, the recognition of prior service and the imposition of related liabilities.

The prospects of a mandatory private pension system are not clear at this time. Movement in this direction during the next few years is quite unlikely. But, on a long-term basis, there is the distinct possibility that some form of pension coverage will become mandatory. If this should happen, the defined contribution approach is most apt to be used. (Defined benefit equivalents would most likely be permitted—largely to accommodate existing defined benefit plans—but a defined contribution plan would be the probable choice for employers installing a plan for the first time.) A mandatory private pension system would have major implications for the expanded growth of defined contribution plans.

Despite all of the foregoing, defined benefit plans are alive and well at this time. They are firmly entrenched in major companies and most of the employees now covered by private pensions participate in defined benefit arrangements. It is unlikely that many of these plans will be shifted—at least completely—to defined contribution plans. What might happen, however, is that employers with these plans will hold them at current levels, opting to make benefit improvements via some kind of supplemental defined contribution arrangement—e.g., a salary reduction, section 401(k) savings plan. For employers who do not yet have a pension plan, we have already seen and can expect to see greater utilization of one form or another of the defined contribution approaches referred to in this paper. IRAs, PASOPs, ESOPs, SEPs, flexible compensation and section 401(k) plans are all attractive and viable programs to consider. These plans will undoubtedly be enhanced by new legislation—e.g., higher contribution limits for IRAs and extended and increased payroll-related tax credits for PASOPs. While defined benefit plans will remain a major component in the United States private pension system, the defined contribution plan has begun to take on a more significant role and this role is likely to become greater in the years ahead.

Discussion

MR. PAUL: Before going to the next question, would Elaine Worden comment on the newly introduced Rangel Bill?

MS. WORDEN: Well, I have no prepared statement. As everyone knows, there are a lot of rumors floating around the streets lately about pension reform and what that might encompass in this Congress, particularly in terms of revenue raisers.

Senator Dole has threatened to do something about the 415 limitations and possibly with professional service corporations. Similarly, the Ways and Means Committee has been exploring various alternatives, and some of their proposals coalesce on a bill that Mr. Rangel introduced yesterday. The bill is called the Pension Equity Tax Act of 1982. It is H.R. 6410. There is a technical explanation in yesterday's *Congressional Record*.

MR. SCHULZ: Mr. Allen, I thought you raised a very important point about the difficulties in pension planning resulting from what has developed due to a broad spread of retirement ages. Departing from the traditional age sixty-five, moving to earlier retirement and new opportunities for later retirement all have significant implications. I did not follow the rationale for why defined contribution plans could respond better.

MR. ALLEN: A defined contribution plan is delivered in terms of a deferred compensation notion. If you work here this year, we will contribute 10 percent to a trust where it will be deferred and accumulated to your benefit and paid to you when you leave under a vested condition. The plan does not purport to be an income replacement plan as it is described and communicated to employees. If you have that type of plan, it is totally the individual's choice as to when he or she leaves the work force and collects the benefits accrued.

In contrast, a defined benefit plan is a commitment to replace a certain percentage of an individual's income at a certain point in time, and it typically is integrated so that it dovetails or coordinates in some fashion with the availability of Social Security benefits. For example, suppose the Reagan proposal went through and age sixty-two was eliminated as an early retirement age. A lot of the plans which are designed to work at age sixty-five would become very ineffective for the people who want to retire early because of the absence of the Social Security benefits that are more or less built into the concept. It would create a lot of pressure on employers to develop

Social Security supplements, redesign their concept of normal retirement age and the like.

I am simply saying that it becomes mechanically difficult to integrate two income sources when the age of availability under the two may be different and where the level of benefit may be changing. Maybe it is a coward's way out, but one approach would be to simply say I will give you some capital and let you accumulate it.

MR. SCHULZ: Yes, I understand, and historically that may be true. I am just pointing out that this may be a deficiency of defined contribution plans as employers have used them. If I understand you correctly, you are saying that they are not doing as much pension planning with regard to what is in the best interest of their employees.

MR. ALLEN: I learned somewhere in my background that you should not argue from the particular to the universal, so bear in mind I am talking about personal experiences. I have been through this type of conversation with a number of clients who are about ready to throw up their hands with problems of age discrimination, problems of sex discrimination and problems of integration. They see a very simple solution which may not be helpful to the employees. They understand this. They are saying, I will give you some money, here it is, take it when you want. I think this is a phenomenon that people should be aware of because I think it does exist in some companies.

MR. TROWBRIDGE: Mr Allen has noted a mathematical fact that many other people have noted—defined contribution plans basically use career average in thinking of their benefit formula. The implication is that a defined contribution plan is likely to base its benefits on lower earnings and, therefore, presumably have lower benefits.

One of the pieces of mathematics in my paper is a refutation of that general idea. In a defined contribution plan, it is not the average earnings, it is the average accumulated earnings. You accumulate the earnings from the time they are earned until retirement, before you take the average. When you do that, you will find that most of the time the average accumulated earnings that you are using is higher than the average earnings, which you are likely to have under the defined benefit plan.

MR. CHERNOFF: As you know, a lot of people have gotten interested lately in where pension plans invest their money. Based upon the trend that you see here and the fact that the Labor Department has projected that there will be $3 trillion in pension plan assets by 1995, how would this shift toward defined contribution plans affect the growth of capital in the pension plans?

MR. ALLEN: It is awfully hard to tell. My quick reaction is that it might not be significantly different than if we were dealing with the growth of defined benefit plans. We would probably be generating cash flows and accruals in the magnitude of 10 to 12 percent of pay.

MR. HOLAN: We have seen more and more of a trend to allow employees to control investment choice. I would say there is going to be a shift for employees to go to fixed income investments rather than the equity market. They are getting into guaranteed income contracts (GICs) and money market funds. Much of the IRA money is going in the same direction.

MR. ALLEN: I agree with Walter that if you go defined contribution, particularly if there is employee choice, there is going to be a very heavy orientation towards the fixed income side of the house. There will be a problem in the equity markets.

MS. BORZI: Of the defined contribution plans that are developing and are in place already, about what percentage of them have, or provide for, individual employee control of the investments?

MR. ALLEN: I think that a very high percentage allow the employees to control the investments with at least two choices and may provide as many as three or four. In that regard, there is a high degree of concern about the fiduciary provisions of ERISA. If employers do not provide choices, they take on much more fiduciary obligation than if choices are made available. In almost all of the cases I am familiar with, one of the choices is a fixed-income fund of some type—quite frequently a guaranteed interest arrangement. The experience has been that there is a very high percentage of participation in those guaranteed interest funds vis-à-vis the equity options that are available.

MR. THOMPSON: I wonder what people's opinions are about the implications of the development of IRAs and related vehicles. I can see one of several scenarios playing out. If a lot of people sign up for IRAs, either we are going to have a net addition to retirement savings and retirement income, or down the road somewhere we are going to substitute for something we now have. It might be Social Security. It might be private pensions. It might be a particular kind of private pension. I wonder if people have thought about that and what their thoughts are?

MR. HOLAN: I would like to make just one comment about deductible voluntary employee contributions to individual retirement accounts. Many profit sharing plans have traditionally allowed voluntary employee contributions. Employees have access to those funds. If you put these dollars into an IRA, you cannot touch them until age fifty-nine and a half without a 10 percent penalty. The response we are getting from young people is: "To heck with deductible amounts in IRAs." They want to continue their voluntary savings in profit sharing plans so they have access to the money for a vacation, home or things of that nature. They are using this as a savings account and are not going toward IRAs.

MR. SCHOTLAND: I find the question, "What impact will the defined benefit/defined contribution shift have on pensions as a chunk of capital?" very interesting. I agree with Mr. Allen's answer about the likelihood that the amount will not look very different. I would like to question the suggestion that the forms will change. I think we tend always to look at about the last seventeen minutes of experience. If equities bombed out in 1974, the obvious thing to do is guaranteed contracts—then discover that you have these marvelous 8.5 percent rates. I think the big change is going to come in less professional decisions about the investments. That is, with more participant control, you will have what was classically called *the odd lot holder* making the investment decision. There will be a lot of very unsophisticated money. Before money market funds, nobody knew anything about interest rates. Now more people know about interest rates than batting averages. As IRAs and other forms of participant-controlled investing comes, I think you are going to find more and more performance awareness. I think that is going to raise a challenge to the defined benefit plans which, taken as a universe, have had abysmal investment performance. I think that may create yet another pressure for making defined benefit plans work better or just saying to heck with them and letting the individual do it.

Providing Retirement Income: The Consequences of Change

Thomas H. Paine

Our Legacy from the Past

Everett Allen's paper presents a keen analysis of the present status of defined contribution plans and a logical forecast of the future if present trends continue. He makes a persuasive case for the following conclusion: "While defined benefit plans will remain a major component in the United States private pension system, the defined contribution plan has begun to take on a more significant role and this role is likely to become greater in years ahead."

It is also noteworthy that the movement to a greater role for defined contribution plans is not dependent on a single factor such as one piece of legislation, prevailing attitudes among corporate managers or union positions, etc. The trend is the result of a series of forces, each exerting some influence in the same direction. The Employee Retirement Income Security Act (ERISA) has made defined benefit plans somewhat less appealing. Legislation on stock ownership plans and tax-effective savings has made defined contribution plans more attractive. Private defined benefit retirement systems among large organizations have developed to the point where total retirement income from the private plan plus Social Security is replacing a reasonable portion of the preretirement living standard for the career employee. These factors, taken together, suggest that while the defined benefit plan will not disappear from the American scene, its role will become relatively stable while the role of the defined contribution plan will grow. For private organizations that do not have retirement plans, defined contribution plans will become more attractive than the more complex defined benefit plans which have higher overhead costs and potential liabilities.

To what extent is this forecast a reliable one? Put in another way, the question is: What degree of confidence do we have that this picture is accurate? Assessing this question requires examining the basic factors that will influence planning for private retirement benefits. If they all point in the same direction, our confidence can be high. If they vary significantly, the future will be less clear and appropriate public policy positions will be more difficult to define.

Factors Influencing Retirement Planning: Demographic Changes

The age distribution of the population does not remain static. Unevenness is produced by changing birthrates, immigration policies, wars and other factors. The total impact of the variations in the past gives us a population today which is indeed uneven.

We have a portion of persons age sixty-five and over that is somewhat greater than normal, a group age forty-five to sixty-five that is significantly smaller than normal, a group age twenty-five to forty-five that is huge and a portion of persons under age twenty-five that is somewhat smaller than normal. One can liken these population variations to waves which roll through time, presenting the economy and our social institutions different tasks with which to deal at various points in time.

In the last decade, our largest tasks were:

(1) finding employment for the burgeoning number of persons then entering adulthood;

(2) coping with the low productivity to which our immature work force was a contributing factor;

(3) getting into place the sources and amounts of retirement income that would be needed in the 1980s when the number of older people would begin to grow significantly.

Alas, we did not perform well in the 1970s on these basic tasks. Unemployment remained high by historical standards—particularly among the young. Productivity sagged to historically low levels. The Social Security system used up its reserves, raising its benefits dramatically and indexing pensions for those already retired. Additionally, many private retirement plans squandered reserves taking care of what were fundamentally unemployment problems rather than retirement problems.

The period of the 1980s should give us better demographic news, at least at the lower end of the age scale where accessions to the labor force will decline. This should produce an annual growth in the work force of less than 1 percent per year compared to the rate of over 2 percent during the 1970s. Finding enough new jobs should be a less persistent problem in the 1980s. At the higher end of the age scale, however, we are faced with a 20 percent increase in the number of persons over age sixty-five from 1980 to 1990—an increase of 5 million persons. We are now trying to deal with the strains that this is causing to the Social Security system. The trend toward retirement before age sixty-five has leveled off and we can expect the average retirement age to start creeping up.

Future demographics of the work force are easy to predict since we have almost a twenty-year head start between time of birth and entry into the labor force. Looking ahead, the problem of the growing number of persons over age sixty-five will ease significantly in the two decades from 1990 to 2010. This is not the era of the gray-haired revolution. After a temporary growth in the number of older persons that will occur in the 1980s, the portion of the population over age sixty-five will actually shrink during the next twenty years. In absolute numbers, the population over age sixty-five will grow from about 30 million to about 35 million during this twenty-year period. This is a hiatus given to formulate sound policies of retirement income planning before the deluge arrives around the year 2010. For the thirty years thereafter, the number of persons over age sixty-five will climb significantly. This is when the baby boom of the 1950s and 1960s rides the wave into retirement. It is then that a social insurance system dependent on transfer payments from active to retired workers will undergo its most serious strains. While today there are about 3.5 workers contributing taxes to Social Security for every 1 recipient, the ratio will fall as low as 2 to 1 around the year 2030. One must wonder whether a system dependent entirely upon current transfer payments can survive this strain. It would seem that we will need some combination of policies to deal with this situation, such as raising the retirement age, supporting the system with general revenue taxation and prefunding a portion of retirement income through mandatory private plans.

What influence will these changes in demographics have on private defined contribution plans? In some ways, their growth will be encouraged. Any system of mandatory private coverage will certainly permit a defined contribution approach, and most employers without retirement plans today will take this alternative. Realizing we have almost thirty years until the problem becomes acute—around the year 2010—a program of capital accumulation started today looks like an attractive alternative. On the other hand, employers will recognize that defined benefit pensions can provide a more precise way of meeting the problem. Pensions can hit where they aim. With the retirement age likely to change and with differing amounts of supplement needed at various times, the defined benefit pension may become a more appropriate instrument than a capital accumulation program. Capital accumulation programs invariably underachieve in attaining certain goals while overachieving in attaining others.

At the risk of overgeneralizing, one might conclude that the earlier we recognize the retirement income problems of the twenty-first century, the more likely we will be to use defined contribution plans as the primary instrument for adding to reserves. The longer we postpone setting aside enough money, the more we will have to rely on defined benefit pensions to get the job done. Recognizing the penchant for both public and private planners to emphasize the short-term, one has to be pessimistic about our willingness to face up to the importance of allocating today's resources to meet tomorrow's problems.

Factors Influencing Retirement Policy: Social Security

Social Security is impacted by factors operating in our society and is a causative factor which may produce changes in private retirement plans. The impact of demographic changes on Social Security suggests a view of the future which looks something like this:

(1) During the 1980s, emphasis will be placed on finding enough money to keep the system in place without drastic changes. The problem is caused by the temporary growth in the population over age sixty-five, with the number rising from 25 to 30 million during this decade. The most likely prognosis is that we will muddle through without a traumatic change in the level of commitment to retirees or the taxes required to finance the system. In part, this will result from a better economy and lower levels of unemployment. A *bottoming out* of interest in early retirement will help if persons do not apply for benefits when first eligible. Benefits after retirement may be adjusted by only a portion of changes rather than full changes in the consumer price index (CPI). Perhaps half of Social Security benefits will be included in taxable income, corresponding to the half of taxes paid by the employer. While the impact would be minor for lower income people, those with higher incomes would return a portion of their Social Security benefits in the form of taxes paid during retirement. Altogether, we should squeak through the 1980s without fundamental change in the nature of our social insurance system.

(2) The two decades between 1990 and 2010 should be *easy street* for Social Security. The population over age sixty-five will grow more slowly, the tendency for deferred retirement will gain impetus and the corrections introduced in the 1980s to ease financial difficulties will still be in effect. One hopes that we will look forward sufficiently to resist temptations to raise the level of pay replacement just because the short-term outlook is reasonably favorable.

(3) The year 2010 will start the crunch period for Social Security, which will last for three or four decades. Obviously, the system must survive since it is the fundamental cornerstone for retirement income in this society. However, just as obviously, some basic structural changes will be needed because we cannot tolerate a situation dependent entirely upon transfer payments from active to retired employees. This is because there will be one Social Security recipient for every two workers. While we cannot predict those structural changes, it seems likely that they will take the form of some combination of the following: (1) a higher retirement age for unreduced benefits; (2) higher payroll taxes; (3) general revenue financing; and (4) mandatory private retirement plans.

The way in which this issue is resolved will determine Social Security's influence as a cause for changes in private retirement plans. Will the answers to Social Security's problems enlarge or detract from the role of defined contribution retirement plans? For example:

(1) An increase in payroll tax uses up reserves otherwise available to fund private retirement benefits, acting to hurt development of both defined benefit and defined contribution plans.

(2) Introducing general revenue financing would change the ultimate incidence of taxation for Social Security, but on its surface does not appear to be either favorable or unfavorable for defined contribution plans.

(3) A change in the retirement age required to receive unreduced benefits might well encourage revisions of fixed benefit pension plans. These plans can produce benefits directly as specified by formula, and decrease interest in defined contribution plans because of their inability to make adjustments in past funding to achieve a particular target.

(4) Any decrease in the pay replacement ratio or in the extent of inflation protection after retirement would also put pressure on private defined benefit plans to immediately make up for any decreases in Social Security.

(5) A requirement for mandatory private retirement plans would undoubtedly favor defined contribution plans over defined benefit plans. This would occur because defined contribution plans represent a simpler way for smaller organizations to meet any government requirement.

We can conclude that changes in the Social Security system are more likely to encourage greater use of defined benefit plans than defined contribution programs. This seems to be a logical conclusion since it is easier to integrate defined benefit systems with one another than with defined contribution programs.

Factors Influencing Retirement Policy: Government Policy

There are a number of actions which the government may take to influence the future of defined contribution plans. One type of activity is legislation which would further restrict the operation of defined benefit plans. The multiemployer pension bill (multiemployer plan termination program) has removed the limit on employer liability for these plans; it is now up to 100 percent of the employer's assets. Will similar action take place for single-employer plans? If so, it would certainly give a large impetus to defined contribution plans as an alternative. It is also possible to envision future legislation which would mandate full vesting or require portability—steps that would reduce the advantage of defined benefit plans. The present ability to enforce mandatory retirement at age seventy may be eliminated. The consequences of such a change are not entirely clear.

There are other ways in which government policy can influence the environment for private retirement plans. The greater the compliance orientation to government policy, the more likely it is that there will be a tilt away from defined benefit plans toward defined contribution plans—especially for smaller employers. For example, accrued benefit rules adopted to protect employees' rights can make it more difficult for companies to:

(1) conform their plans to changes in Social Security's retirement age;

(2) utilize early retirement windows; and

(3) shift to patterns of part-time employment.

A separate note may be worthwhile on the subject of integration rules. These rules determine the reward that a private retirement plan can deliver to high-income people relative to low-income people without making the plan discriminatory in favor of the higher paid. These rules are now grounded firmly on a concept of dubious validity, which assumes that values can be attributed to various elements within Social Security which, in turn, can be translated into values that a private retirement plan can provide. This author served on the Treasury Department's Advisory Council on Integration in the late 1960s. At that time, members of the Council pointed out that the validity of the doctrine of value rested on a Social Security system which would remain relatively unchanged. Rapid changes, or swings between liberalization and deliberalization, render the value concept inappropriate. At that time, the Assistant Secretary for Tax Policy stated that he believed we could count on the stability of the Social Security system and that significant changes were unlikely after 1968. History has shown how silly that assumption was.

Integration rules should be changed to be based on integrating benefits. Every country in Western Europe permits the private defined benefit plan to state a total level of income. The employer's plan is responsible for paying whatever portion the social insurance system does not pay. The United States should adopt the same approach, particularly if Social Security is going to keep changing and the employer is trying to focus a defined benefit plan to meet employees' needs.

So long as the burden of maintaining a defined benefit plan is much greater than the burden of maintaining a defined contribution plan, government policy is encouraging the latter. In addition to restrictive policies toward defined benefit plans, the government encourages defined contribution plans by extending favorable tax treatment to them in many ways. Contributions to certain stock ownership plans qualify for a tax credit rather than a deduction. Cash or deferred profit sharing plans can utilize salary reduction for pretax savings by employees. Lump-sum distributions can qualify for ten-year, forward-income-averaging tax treatment. Tax-deductible savings through IRAs have been enacted. The goals of these provisions of the Tax Code seem to be the creation of pools of capital for investment as well as the accumulation of reserves for retirement. Their weight constitutes an impetus for the further spread of defined contribution plans.

Factors Influencing Retirement Planning: Employer Objectives

So far, this discussion has concerned factors external to the employer-employee relationship. We have not yet taken into account the objectives of employers or those of employees and of unions that represent them. Here, the emphasis is first on meeting needs. The great advantage of a defined benefit plan is that it can hit where it aims, providing sufficient retirement income to those who have little time to accumulate adequate income. Also, it can prevent more resources than necessary from being allocated to long-service people. At least for larger organizations, it is likely that defined benefit plans will continue as the first line of defense against need and uncertainty. Defined contribution plans will serve as supplements to extend tax-advantageous savings beyond meeting basic employee needs.

Another general conclusion is that employers will rely more on defined contribution plans to the extent that situations are foreseeable a long time in advance. When companies are overtaken by events, they will turn to defined benefit plans as a method of providing instant correction. The following are examples of events which might overtake an employer and require solution through the defined benefit route:

(1) a level of inflation that renders inadequate the benefit amounts accrued for years under a retirement program;

(2) a significant loss in the value of investments which reduces the ability of accrued reserves to purchase adequate retirement income;

(3) an increase in Social Security retirement age, passing on to the private plan a greater burden than previously;

(4) a change in the method of work which permits gradual transition from work to retirement through part-time work and a change in the need for retirement income;

(5) a change in the economic outlook of the employer, either cyclical or long-term in nature, which necessitates reduction in the work force and retirement at an earlier age than expected.

In the past, the employer together with the union where employees are represented have turned to the defined benefit plan to help solve these problems. In the future, the same practice can be expected to continue; because it allows money to be used to solve the particular problem. This means the defined benefit plan will continue as a healthy form of retirement program and will indeed be given recurrent increases in its assigned tasks. The defined contribution plan will likely be left to grow into a program of increasing importance, gradually funding a higher proportion of total retirement income from private sources.

Given the attractiveness of the defined contribution vehicle—but the continuing need of the employer to meet special conditions—we may well see the spread of a hybrid program commonly known as a floor plan. Under this arrangement, a total level of retirement income is stated by formula in a defined benefit plan. From this total guarantee is subtracted the annuity equivalent of amounts accumulated under a defined contribution plan. If the total amount accrued under the defined contribution plan exceeds the benefit guarantee, there is no fixed benefit payable. Where the defined contribution accrual falls short, the pension plan pays. Under this approach, the employer can keep enlarging the role assigned to the defined contribution plan without giving up his ability to hit exactly where the defined benefit plan aims—as a minimum guarantee of adequacy.

This issue of the relative roles assigned by employers to defined benefit plans and defined contribution plans is being impacted today by a new force that may have a lasting influence. This force is the need to lower fixed labor costs in light of foreign competition. As unions agree to accept some rollbacks of past gains, they usually want some guarantee that jobs will be protected. Often they also want some form of profit sharing to split gains that come from improvement in the economic results of the business. Enter again the defined contribution plan, a device that can vary contributions from year to year, build reserves for future use and avoid unfunded liabilities.

Employer objectives point to a continuation of defined benefit plans as well as to some spreading of defined contribution arrangements. Most likely, the future will not bring much increase in the pay replacement ratio provided from the defined benefit plan and Social Security combined. Instead, the focus will be on assuring adequacy of retirement income for employees in various circumstances. Total resources available in retirement to the career employee will likely grow, and the role of the defined contribution plan will be to provide this increase.

Conclusion

What can we conclude from this discussion of factors influencing private retirement planning? First, that relatively speaking, the private retirement system will grow faster than the public program. This does not mean that Social Security benefits will go down, but they will remain relatively constant as a percentage of pay because of the great difficulty in meeting the problems posed by changing demographics—not considering the burden of increasing the level of pay replacement. Income from private retirement plans will continue to grow. This will occur whether or not there are mandatory private pensions but, of course, that development would give this trend a significant boost.

Within private retirement plans, reserves in defined contribution plans will probably grow faster than those in defined benefit plans. This is partially due to the disincentives to establish and maintain a defined benefit plan. Another cause is the tax-favored savings systems we are initiating. There will also be greater recognition of the need to accumulate reserves prior to the time when the baby boom group becomes the retirement boom. Nevertheless, we do not expect that the defined benefit plan will go out of existence, since it is an instrument much better designed to respond to change and meet specific needs. The use of the floor plan may be a compromising way to prefund more but reserve the ability to pinpoint funds for specific purposes.

How reliable is this forecast? It is only as good as the assumptions underlying it. Fundamentally, we have been assuming a continuing partnership between the government and the private employers in funding for retirement income. Since the government cannot accomplish the whole job through its social insurance system, it is trying to make private plans an instrument of public policy by granting incentives such as certain tax advantages.

While the expressions of public policy change from time to time, the basic concept of partnership has existed since the birth of the Social Security system in 1935. With almost a half century of experience, it seems a good bet that the partnership will continue for a long period of time.

It would be easier to forecast uninterrupted growth of defined contribution plans if future economic stability could be guaranteed. Of course, it cannot. With unpredictable events will come the continued use of the defined benefit plan. Continued health for both forms of private plans seems to be the most likely prospect.

It would be helpful if representatives of the government continue to remember the existence of the partnership of public and private programs and how much it is counting on private plans to keep doing their part (and in the future a growing part). Sometimes control can undermine incentive. Sometimes unacceptable risk will abort development. An appropriate prescription for government action on private retirement plans for the foreseeable future is twofold: (1) to avoid too much regulation of defined benefit plans, which companies and unions need to meet specific needs; and (2) to encourage the growth of defined contribution plans with their appeal of greater flexibility. Partnership of public plans and private plans is the best way to get the whole job done—not only get it done, but in a timely way that meets current needs and anticipates the major problems that will face us thirty years from now.

Discussion

MS. FERGUSON: A couple of thoughts came to mind as you were talking. First, I think that you were questioning the extent to which the government should be putting its thumb on the scale in favor of defined contribution plans. I think something that needs to be considered here is that contributions to private pension plans are now the largest single tax expenditure, tax subsidy, tax incentive, whatever you want to call it, of all tax expenditures. The government has a legitimate concern. The reason we have this very substantial incentive is because people want to supplement Social Security. This is why we are all here. So, there is a legitimate concern. I think the reason you were criticizing the Rangel Bill is because the government is trying to make the private system provide a supplement to more people. I think that needs to be said.

The thing that comes to mind first is the question of administrative costs and paperwork to small employers. The fact is that it is a lot cheaper and simpler for small employers to provide a defined contribution plan than to set up a very complicated defined benefit plan. Now at this moment not very many employers know about simplified employee pensions (SEPs), because they are not being sold. I think you will see a very substantial increase in defined contribution SEP programs as employers realize that they can avoid these very, very heavy administrative costs that come with a complicated plan.

MR. PAINE: Let me say first that if I overstated my position to make you believe I wanted a totally unfettered private system, I went too far. I have long supported and worked very hard down here to try to get some reasonable controls. If you are going to count on private plans, they had better be shaped to fulfill public policy. I think that the rules we have on requiring broad coverage instead of just covering the fat cats have been very important. I think that the concepts we hold about eliminating the ability to take benefits away from people are obviously very valuable. What I am really talking about is that there is a limit. I think you need to have a road that is a little broader.

MR. SALISBURY: I want to make a comment on the tax subsidy or tax expenditure issue. The calculation of those figures is a simple calculation of the revenues lost during the current fiscal year. If you look at those calculations, you find that there may be a near total washout in the long-term.

If one is going to get into a discussion of subsidies—a subsidy implies a true expenditure by the government—something which is never to be returned. The use of subsidy in this area is highly inappropriate.

MS. FERGUSON: Dallas, you may be perfectly right on this Administration's figures; but in prior administrations, there was always an adjustment for the money that would be taxed at retirement.

MR. SALISBURY: The adjustment is for what they think is being paid in the current fiscal year on benefits that are being paid. It is not a netting-out of what they will get back at reasonable tax rate assumptions thirty-seven, forty-seven or fifty-seven years from now.

MR. COLE: To what extent is the greater efficiency of the defined benefit plan attributable to deferred funding of the benefit being promised?

MR. PAINE: I know that you have a choice as to the rate at which you fund within the allowances of the actuary. You know, there are varying degrees of precision in this world. If you ask a child what is two and two, he will say four. If you ask an actuary, he will say somewhere between three and five. Actuaries have plenty of leeway in what they do.

I was not referring in my comments to that incidence of funding at all. I was referring to the fact that we can have the best of intentions in starting an accrual program in a company and let it go on for thirty years while contributing 5 percent of pay. What people get out in the form of an annuity, as a percentage of their final average income, will vary all over the lot. It will vary by what happened to their pay, what happened to inflation, what happened to investments and what happened to employment. All kinds of things can occur. If you aim at providing half of final pay when people retire, your actual result may vary from 40 to 60 percent. Efficiency is when you are aiming at fifty and hit fifty. This is the nature of defined benefits. It is the scatter-gun versus the rifle.

MR. COLE: What about a target benefit?

MR. PAINE: A target benefit, I think, is a possibility. I do not know many people who perceive that as the *need-filler,* unless they can predict a considerable period ahead of time what it is that people need. My experience is that the phone rings and someone needs an early retirement supplement the first of next month because they have to reduce employment 10 percent. There is no way that we are going to do anything but a defined benefit plan to assure that those people have got enough retirement income to get out on a decent standard of living.

MR. SWENSON: I would like to clarify a common misconception regarding the Social Security program. The comment was made that during the course of the 1990s and the early 2000s the Social Security program would be financially solvent. While that is true with respect to the OASDI (Old-Age, Survivors and Disability Income) program; the HI (Health Insurance) program is expected to run very substantial deficits. The combined OASDHI program will continue to run deficits through that period. However, I agree with the general premise that the problems of that period are far less severe than the problems that will occur once the wave of the baby boom generation reaches retirement age.

I would also like to comment about the apparent conclusion that defined benefit plans are unable to protect participants in an inflationary environment. I agree that during the past ten or fifteen years defined benefit plans have not kept pace with inflation; however, I think there are four things that should be understood. First of all, economic conditions since OPEC got into the act have been somewhat less than favorable. Second, unanticipated inflation has affected the financial markets such that the real value of pension plan assets has deteriorated with a negative impact on pension plan sponsors. Third, ERISA required an increase in many plan sponsors' funding levels without an increase in benefit levels. Fourth, and perhaps even most significantly, is that the major source of retirement income for many pensioners is Social Security. The Social Security program has been more than fully indexed in the past fifteen years. This is because of a series of ad hoc increases in the late sixties and early seventies, due to the CPI increasing more rapidly than wages during the mid-seventies. In fact, since 1967, Social Security benefits have been increased by 245 percent whereas average Social Security wages have only increased by 145 percent. I think that fact needs to be taken into account when you look at what private pension plan sponsors have done with their pension plans in the last decade.

MR. MIKKELSEN: Tom, a few minutes ago you identified as one example of corporate adaptive behavior, the creation of the ERISA excess plan. I think that even more significant to me as a benefit planner, has been a sharp rise in the number of supplemental executive retirement plans in the last five years. Under these plans, all—

or a portion—of executive incentive compensation is recognized as pensionable.

Mr. Paine: I really believe that before ERISA, it was not respectable to put into your proxy statement the fact that you wanted to pay your highly paid people some benefits beyond what was going to the whole population. I also believe that there was a reluctance on the part of companies to single out the fat cats unless they themselves deferred their own compensation and created their own reserves after retirement. ERISA made it respectable. It put it right in the act that you can have an executive supplemental plan. The action followed the availability, and now you have most companies of size with one of those programs. Once they get it, they start hanging baubles on it like a Christmas tree. I think the government's intent and what resulted from it were 180 degrees opposite.

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