

Pension Simplification

The Factor of 11 and U.S. Pension Reform

THE ARRAY OF QUALIFIED PENSION PLANS in the United States can be bewildering. Within the definition of a qualified plan, one can find employer-sponsored defined benefit (DB) plans (including cash balance plans), a variety of employer-sponsored defined contribution (DC) plans, plus a plethora of individual plan options to which workers, and sometimes employers, can contribute. These include IRAs, 401(k) plans, profit-sharing plans, Roth IRAs, 403(b) arrangements, 403(b) ERISA Title I plans, and so on.

Each of these plans has a separate set of rules and regulations, a separate set of limits on contributions, separate vesting rules, and its own unique tax advantages. Some allow full deductibility of contributions but tax the income. Some do the opposite—contributions aren't tax deductible, but income is tax free.

What follows is a philosophical model for creating one single consistent pension system in the United States with one set of rules, limits, and regulations. It's based on a model that has existed in Canada since 1990.

The Model

The intent is to create a single framework where all workers have an equal chance to provide for retirement income security. Workers in employer-sponsored DB plans (including cash balance plans), those in employer-sponsored DC plans, and those with no employer-sponsored plan would have the opportunity to achieve an equivalent level of retirement income security.

First, we need to create a level playing field on which participants can play. For this exercise, we'll assume a normal retirement age of 65, treat all individual retirement savings plans as DC plans, and propose a single set of limits and tax incentives for all DC plans, whether employer sponsored or individual.

We'll create the level playing field with something called the "factor of 11." It's based on recent purchase prices for annuities, taken from the Canadian Annuity Exchange quotation service. (The 1990 Canadian legislation used a factor of 9, but interest rates today are lower and life expectancy is higher, so a factor of 11 seems more suitable.)

This represents the cost of a single life annuity (no guar-

anteed period) purchased at age 65. That is, if you had \$110,000 from a DC fund at age 65, you could purchase a life annuity that would pay out \$10,000 a year. It will be this annuity factor of 11 that will allow us to draft legislation that will provide equivalent opportunities for workers,

whether in DB, DC, or individual plans.

The model uses the following tax incentives in providing retirement income:

- ▶ All contributions within limits, whether from the employer or the employee, are fully tax deductible to the contributor in the year of contribution;
- ▶ Investment income on qualified plan assets accrues tax free;
- ▶ Income from the plan becomes fully taxable in the year taken.

There will be lower and upper limits on the age at which accrued funds must be annuitized or drawn down. What these limits will be, however, is a detail that is left to the legislators.

Next, the model proposes some contribution (DC plan) or benefit accrual (DB plan) limits. In particular, a DB plan can't accrue a benefit any larger than 2 percent of earnings per year of work, with a maximum value of \$3,000 in 2005. The latter dollar limit would be indexed to average industrial wages (AIW). That would mean, for example, that in 2005 dollars, workers retiring with 35 years of service could receive a pension equal to 70 percent (2 percent \times 35 years) of their final salary, but the tax-advantaged pension could not exceed \$105,000 per year (35 \times \$3,000) in 2005 dollars.

With these DB limits in place, and with the use of the annuity factor of 11, DC participants (including participants in individual plans) would be able to contribute up to 22 percent (11 \times 2 percent) of their earnings but with an annual limit in 2005 of \$33,000 (\$3,000 \times 11). The \$33,000 limit would be indexed to AIW.

If a worker is in a DB plan that accrues benefits at less than 2 percent a year, then any unused contribution room could be made up within a DC or individual plan. That is, if your DB plan accrues benefits at 1 percent a year, you could contribute up to 11 percent of your earnings to a DC or individual plan but only up to a further \$16,500 in 2005. Any other rate of accrual would be *pro rata*.

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As a more complex example, assume a worker is covered by a hybrid employer-sponsored plan. The employer-sponsored plan accrues DB benefits at an annual rate of 1 percent, plus the employer contributes 5 percent of pay to a DC plan. In this case, the worker could contribute 6 percent of pay to an individual plan (11 percent, less the employer's DC 5 percent contribution) but only if total employer-plus-individual DC contributions don't exceed a total of \$16,500 in 2005.

Another way to arrive at this answer is to realize that the value of the employer contributions (DB x 11 + DC) would total 16 percent, which would leave 6 percent of pay (22 percent–16 percent) as eligible for contribution to an individual plan. These are annual contribution calculations, based on the DB benefit accrual of the immediately preceding year.

If one accepts the legitimacy of the factor of 11 for now, the following implications arise for this pension model:

First, it doesn't matter if a worker is in an employer-sponsored DB plan, an employer-sponsored DC plan, or an individual plan. The ability to achieve retirement income security is equivalent.

Second, workers are no better off being in an employer-sponsored plan than being in an individual plan if one assumes that the value of the employer-sponsored pension benefit is reflected (or bargained) in one's salary or pay rate.

Third, there's no need for "Discrimination in Favor of the Highly Compensated" rules and all the friction that goes with them. All workers have an equal chance to achieve retirement income security.

And finally, U.S. pension regulations can be reduced from tens of thousands of pages to literally tens of pages. All that's really needed has been presented above.

The model assumes that the price of an annuity that pays \$1 per annum at retirement is \$11. Thus, for every \$11 you accrue in a DC or individual plan, you can purchase the equivalent of a \$1 benefit in a DB plan. And all dollar limits are indexed to AIW.

A Tale of Two Workers

Worker No.1 never reaches the maximum dollar limit as defined above. Thus, this worker is limited to an annual accrual of 2 percent of earnings in a DB plan or a contribution limit of 22 percent of earnings into a DC or individual plan.

Assume a 35-year career and assume the DB plan calculates the retirement benefit based on the worker's final salary or best salary (denoted S_{65}). For the worker who entered employment at age 30 and who received a 2 percent per year accrual in a DB plan, the retirement benefit at age 65 (denoted B_{65}) is:

$$\text{Annual Retirement Income} = B_{65} = (.02)S_{65}(35)$$

Assume further that this worker has received annual salary increases that can be modeled by a constant salary scale increase factor of s . Therefore:

$$\text{Annual Retirement Income} = B_{65} = (.02)S_{30}(1+s)^{35}(35)$$

The equivalent worker who saved for retirement in a DC or individual plan would have contributed 22 percent of earnings each year. Assuming the annual investment rate of return on these contributions is i constant, the benefit that can be purchased at age 65 (B_{65}) for this worker is:

$$\text{Annual Retirement Income} = \frac{B_{65} = (.22)S_{30}[(1+i)^{35} + (1+s)(1+i)^{34} + (1+s)^2(1+i)^{33} + \dots]}{11}$$

That is, the accumulated value of the DC or individual account is divided by 11 to turn the lump sum into an annuity.

If $i = s$, then this is equal to:

$$\begin{aligned} \text{Annual Retirement Income} &= \\ B_{65} &= (.22)S_{30}[(1+s)^{35} + (1+s)^{35} + (1+s)^{35} + \dots] \\ &= (.02)S_{30}(1+s)^{35}(35) \end{aligned}$$

which is equivalent to the DB retirement benefit.

Assume that worker No.2 starts and continues to earn wages that would create DB benefits or allow for DC con-

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tributions above the dollar maximum limit. Remember that these dollar limits are indexed to the AIW for both DB and DC (or individual) plans. Thus, any benefit values are expressed in 2005 dollars. With the indexing in place, the equivalence between DB and DC (or individual) plans would be maintained. This indexing is essential for the creation of the level playing field.

For the worker who enters employment at age 30 in 2005 and has a 2 percent per year DB plan capped at an annual accrual of \$3,000 in 2005 dollars, the benefit at age 65, B_{65} is:

$$\text{Annual Retirement Income} = \\ \$3000[(1+s)^{35} + (1+s)^{34} + \dots \text{for 35 terms}]$$

For the worker who enters employment at age 30 in 2005 and is in a DC (or individual) plan with annual contributions capped at \$33,000 ($\$3,000 \times 11$), the annual retirement income benefit at age 65, B_{65} is:

$$\text{Annual Retirement Income} = \\ \frac{\$33000[(1+i)^{35} + (1+i)^{34} + \dots \text{for 35 terms}]}{11}$$

Clearly, if $i = s$, then these two benefits are equal. Further, for a third worker who starts below the benefit cap but hits the accrual or contribution cap sometime mid-career, analogous algebra would show us that this worker can achieve equal age 65 retirement income benefits in either a DB or a DC (or individual) plan. Regardless of the type of plan, this pension

system gives every worker the same potential to attain retirement income security.

Policy Questions

First, it is assumed that the value of one's employer-sponsored pension benefits is implicitly or explicitly reflected in the worker's wage rate or salary. This assumption is necessary to be able to conclude that an individual plan is equivalent to an employer-sponsored plan, or that it doesn't matter if the plan is employer-pay-all or if it requires some employee contributions.

Second, the algebraic equivalence of the myriad systems also requires that the salary scale function, s , is equal to the investment rate of return, i . Clearly, this equality will never occur exactly. But if one believes that salaries increase at the rate of inflation plus a merit increase and that interest rates are normally equal to inflation plus a real rate of return (to reward risk taking), then a long-term assumption that s is approximately equal to i seems defensible. One needs to allow for such assumptions to reap the rewards of a simplified pension system.

Third, legislators will have to decide on an appropriate level for the maximum benefits accrual for DB plans or contribution rate for DC plans. Whether in a DB, a DC, or an individual plan, the limits defined here would affect workers earning \$150,000 a year, which would then rise with the AIW index. Is this the correct level? The legislators will decide.

Another interesting question for legislators is whether a worker who misses contributions in a particular year can make them up later on. For example, if a worker in an individual plan missed making any contributions in 2003 and 2004, would that worker then be able to make three years' worth of contributions in 2005?

Conventional wisdom argues that legislators should be doing everything possible to encourage tax-advantaged retirement savings. These plans represent a huge pool of deferred taxes. Taxes on contributions and the current investment income the government forgoes today are more than made up when the income is taken and taxed in full. It's good tax policy, especially as boomers require increased government-sponsored Social Security and health care post-retirement.

Finally, and critically, the model has assumed that \$11 of a DC fund at retirement will buy \$1 of retirement income per year. Obviously, the factor of 11 will change from time to time as interest rates rise and fall and as life expectancy varies. (One would expect life expectancy to rise somewhat consistently, meaning that the value of the factor of 11 would also be expected to rise more often than fall.) Thus, one must be vigilant in monitoring the evolution of this factor.

The Need for PARs

Modern workers seldom maintain lifelong relationships with one employer. In the Canadian model, the amount a worker can invest into an individual plan is the total accrual value allowed, less what's received in the employer-sponsored plan. The total value of the benefit accrual in the employer-sponsored plan is called the pension adjustment (PA). Thus, the worker can contribute the legislated limit, minus the employer-sponsored PA, into an individual plan.



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The PA directly reduces the amount a worker may contribute to an individual plan. The greater the PA, the less room the employee has in the DC or individual account. But when a worker terminates or retires before the normal retirement age, the value of the actual benefit received from the employer-sponsored plan won't be equal to the PA calculated in the year of accrual.

This is because the commuted value normally attributable to a terminating employee is the present value of his retirement benefit. The year-by-year commuted present value of the projected benefit at retirement is virtually always less than the PA calculated in the year of accrual. Thus, the worker has been disadvantaged in his ability to contribute to an individual plan.

The pension adjustment reversal (PAR) remedies this situation. The PAR effectively permits the individual worker to contribute to an individual account additional amounts that were apparently lost because the value calculated for the PA previously (2 percent of pay per year x 11) was larger than the commuted value actually paid to the terminating worker.

The PAR recognizes that the factor of 11 used in the PA calculation is too large for workers who change DB plans early or for DC contributions that haven't fully vested when a worker changes plans. The factor of 11 is really accurate only right at the moment of retirement, around age 65.

Generally, the PAR will increase the worker's individual account contribution allowance by the amount of the shortfall between the PA originally stated and the actual value of the benefit received.

Conceptually, the calculation of the PAR is deceptively easy:

PAR = Total of all PAs less the actual value of the benefit received.

The relative size of the PAR is determined, in part, by the interest rate used to calculate the commuted (present) value of the DB benefit transfer. When higher interest rates are used, the PAR will be larger because the commuted value will be lower.

The following, from Watson Wyatt's 2001 study, *Canadian Pensions and Retirement Income Planning*, is an example of the relative size of the PAR for a worker who belongs to a 1.5 percent final average earnings DB plan. The worker joined the plan on Jan. 1, 1993, and terminated employment on Dec. 31, 2000. The pension plan provides a non-indexed pension, payable from age 65 and guaranteed for five years.

The table illustrates values of some PARs. These values are additional contributions the terminating worker can now contribute to an individual account. The table shows the relative variance in the PAR by age and final average earnings at termination.

Age at Termination	PAR if Final Earnings = \$40,000	PAR if Final Earnings = \$80,000
30	\$28,000	\$65,000
40	23,000	56,000
50	15,000	40,000

For a DC plan where full vesting hasn't occurred, the value of the PAR is simply the value of the PA that was lost because of partial vesting.

Conclusion

Today, the U.S. worker's retirement choices are confusing and complex. Each system has its own unique set of rules, regulations, and tax incentives, encompassing thousands of pages. A single pension system model, based on the factor of 11, would offer every worker in the United States an equal opportunity to achieve retirement income security, regardless of the work situation.

This holistic model is presented in the hopes of sparking a meaningful debate on its merits and potential for adoption. ●

Resources

American Society of Pension Actuaries (2003). *Journal Supplement*. Jan.-Feb. 2003, Volume 33, No. 1, pp. 1-6.

Brown, Robert L. (2002). "Paying for Canada's Aging Population: How Big Is the Problem?" *Proceedings of the Canadian Institute of Actuaries*. To appear. Ottawa.

Canadian Institute of Actuaries (1995). *Troubled Tomorrows—The Report of the Canadian Institute of Actuaries' Task Force on Retirement Savings*. January, Ottawa.

Watson Wyatt Canada (2001). *Canadian Pensions and Retirement Income Planning*. CCH Canadian Limited. Book No. B789, Toronto. (www.cch.ca).

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