On the disparity between private and public pensions

The monetary difference between public and private pension benefits tends to diminish when employee contributions and Social Security coverage are considered

William J. Wiatrowski

The income from public and private sector pensions has been debated for many years. Recently, economists Wendell Cox and Samuel Brunelli wrote of the significant advantage government employees' pension plans provide in comparison with private sector plans.[1] Data from the Bureau of Labor Statistics indicate that a greater proportion of State and local government employees are covered by a pension plan in which benefits are computed using a formula that usually is based on earnings and years of service (defined benefit plan), than are private sector workers. However, the data also indicate that private sector workers are more likely to be covered by Social Security and by defined contribution plans (plans which specify contributions but not benefits).

Examination of plan details reveals several conflicting factors that make it difficult to state with certainty whether public or private sector plans maintain an advantage regarding benefits. This article adds to the debate by providing new data and analysis of public and private sector retirement income.

Two characteristics that contribute substantially to the differences in benefits between public and private sector workers are the requirement to contribute toward the cost of defined benefit pension coverage and the availability of Social Security coverage to supplement pension benefits. Employees who contribute toward the cost of their coverage may expect to receive a greater benefit than those whose coverage is funded entirely by their employer. Similarly, employers might be more willing to finance a higher benefit if they are not also financing Social Security. Therefore, variations in pension benefits cannot be considered separately from required employee contributions and the availability of Social Security.

Previously, data from the Bureau of Labor Statistics Employee Benefits Survey have been used to compare public and private pensions in the aggregate,[2] and to compare provisions available to workers in different settings—such as the private and public sectors or union and nonunion work sites.[3] This article uses the survey's data to compare the benefits of plans having similar characteristics, and explores the relationship of plan provisions and how one provision affects another provision.[4]

Retirement plan coverage

The private and public sectors differ considerably in how employee retirement benefits are provided. Retirement benefits for public sector workers are provided almost exclusively by defined benefit pension plans, while private industry benefits stem from a mix of plans. Among full-time workers in the early 1990's, about 9 of 10 State and local government employees participated in a defined benefit pension plan, compared with about 4 of 10 private sector employees. To compute future benefits, a defined benefit pension plan specifies a formula frequently based on earnings and years of service.

William J. Wiatrowski is an economist in the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics.

Before the mid-1970's, defined benefit plans were virtually the only type of retirement benefit employers provided. But more recently, defined contribution plans, which specify deposits to an employee's account but do not guarantee future benefits, are prevalent, particularly in the private sector. Among full-time workers in private industry establishments, 4 of 10 participated in a defined contribution plan in 1991. By comparison, fewer than 1 in 10 full-time workers in State and local governments participated in such plans in 1990.[5]

Social Security benefits are an important part of the retirement package for most workers. Since its inception, Social Security coverage was required in the private sector, while State and local governments could choose not to cover their employees, and many governments chose not to join. The Social Security Amendments of 1983 required State and local governments to cover new employees and prohibited government agencies from leaving the Social Security system. However, workers not already covered could remain without coverage. Currently, approximately three-fourths of State and local government employees are covered by Social Security.[6]

More than nine-tenths of State and local government workers have some type of employer-sponsored retirement plan, such as a defined benefit or defined contribution plan, or both. Those without pension coverage are likely to be covered by Social Security, although there are no data to confirm this point.

In the private sector, 3 of 5 full-time workers have retirement coverage from their employer; nearly all those without coverage have Social Security. Furthermore, among establishments employing 100 or more workers (establishments similar in size to State and local governments), 8 of 10 are covered by employer-provided retirement plans.

In sum, a typical full-time State and local government employee will work in a large establishment and be covered by a defined benefit pension plan and, most likely, Social Security. A typical full-time worker in a larger private sector establishment will be covered by either a defined benefit pension plan or a defined contribution plan or both, *and* Social Security.

Earnings-based benefits

Beyond the details of coverage, plan provisions—specifically earnings-based benefit formulas in defined benefit pension plans—can be used to compare benefits of public and private sector retirement plans. Such defined benefit plans provide pensions equal to a certain percent of the employee's earnings. In the public sector, all defined benefit pension plans are based on earnings; in the private sector, about 7 of 10 full-time employees with defined benefit pension coverage are in earnings-based plans.[7] Evidence shows that earnings-based plans are more generous in the public sector than in the private sector, but the proof is in the details.

In its simplest form, an earnings-based defined benefit pension plan computes benefits as a fixed percent of terminal earnings multiplied by years of service. Terminal earnings are stipulated by the plan, but are typically an average of the highest 3 years' earnings in public sector plans and the highest 5 years' earnings in private sector plans.[8] The fixed percent also is stipulated by the plan, and differs between public and private sector plans.

For full-time State and local government employees in 1990, the typical formula was 1.90 percent of "terminal" earnings per year of service; for full-time private sector employees in 1991, the factor was 1.49 percent of terminal earnings. Assuming average terminal earnings of $40,000 after 30 years of service, the public sector employee would receive a pension benefit of $22,800 per year, nearly $5,000 more than the private sector worker.

Explanation of the disparity

Contribution effect. This direct comparison of plan benefits fails to account for employee contributions. Private sector workers are rarely required to contribute toward the cost of their pension. In contrast, the majority of full-time public sector workers with defined benefit pension coverage were required to contribute toward the cost of the plan; a typical contribution in 1990 was about 6 percent of earnings.

Public and private sector workers covered by Social Security must make a required contribution regardless of whether they also contribute to a pension plan. In 1993, the Social Security contribution rate was 6.2 percent of earnings up to $57,600 per year.[9] An equal amount is contributed by employers. Among private sector workers, universal Social Security coverage—with its required contribution—may be one reason for the absence of required contributions to pension plans. For public sector workers not covered by Social Security, contributions to a pension plan may be viewed as a substitute for Social Security contributions.

The difference in the percent of earnings multiplied by years of service used to compute pension benefits between public sector workers required and not required to contribute toward their defined benefit pension plan is small—1.92 percent of earnings and 1.85 percent of earnings. However, this can be misleading. Frequently, government pension plans are administered statewide, with lo-

cal governments choosing whether to join. Employee contributions are nearly always required, but may be funded by the local jurisdictions as a benefit to employees.[10] Thus, nearly all State and local government pensions have an additional source of funding with which to provide benefits.

Looking just at those required to contribute, evidence shows that higher contributions yield higher benefits. The following tabulation indicates the average percent of earnings multiplied by years of service for State and local government employees, by various ranges of required employee contributions:

Percent of earnings employee is required to contribute	*Average percent of earnings multiplied by years of service*
0.01–4	1.70
4.01–6	1.84
6.01–8	2.13
Greater than 8	2.43

As shown, the benefit percentages increase as contributions increase, particularly above the 6-percent contribution rate.[11]

Social Security effect. Pension benefits are affected by Social Security in two ways. First, for State and local government workers, the formulas for calculating pensions from, and required contributions to, defined benefit plans differ, depending on whether the workers have Social Security coverage. The average benefit for workers covered by Social Security was 1.83 percent of terminal earnings multiplied by years of service; for those not covered by Social Security, the average benefit was 2.18 percent multiplied by years of service. Similarly, workers with Social Security coverage make smaller contributions to their pension plans (5.11 percent) than their noncovered counterparts (7.55 percent).

The pension benefit for State and local government employees covered by Social Security is still higher than that of private sector employees (1.83 percent of terminal earnings multiplied by years of service versus 1.49 percent), perhaps reflecting the presence of a required contribution for government employees. Another factor may be that many State and local government pension plans were developed when workers were not covered by Social Security. When a jurisdiction joined the Social Security system, it may have chosen to maintain pension provisions then in effect.

The second way Social Security affects pension benefits is through plan integration. Defined benefit pension plans are allowed to adjust benefits to account for employer Social Security costs. This can result in lower pension benefits for employees covered by plans with integration features, although the effect of integration varies by level of earnings.[12] Social Security integration features are widespread among employees covered by private sector pensions, particularly white-collar workers with earnings-based formulas. Integration provisions in State and local government plans are rare.

The integration of pension benefits and Social Security is typically accomplished by varying the percent of earnings formula by salary. A particular rate may be applied to specified earnings; a higher rate would be applied to earnings above that amount. This system attempts to account for employers who pay Social Security taxes on earnings up to a given earnings threshold; this may reduce pension costs associated with those same earnings. An example of an integrated pension formula is one that provides 1 percent of earnings up to $25,000 multiplied by years of service, and 1.5 percent, multiplied by years of service, of earnings greater than $25,000.

Adjustments after retirement effect. Another difference in defined benefit pension plans of public and private sector workers is the presence of adjustments to benefits following retirement. One-half of the full-time State and local government employees with defined benefit pension coverage were in plans that provided an automatic cost-of-living increase; such adjustments were nearly nonexistent among private sector plans. Cost-of-living adjustments in defined benefit pension plans typically increase the annual pension benefits of retirees, based on a published estimate of the cost of living, usually the Bureau of Labor Statistics Consumer Price Index. Adjustments may be subject to a maximum level or include other features to limit the increase.[13]

Another way to adjust employer pension benefits following retirement is for an employer to provide a discretionary, or ad hoc, increase. Such adjustments are provided by private and public sector employers, and tend to be more prevalent during periods of high inflation. Among full-time employees in medium and large (100 employees or more) private establishments covered by a defined benefit pension plan, ad hoc adjustments were provided in plans covering 4 of 10 participants in 1985, but were in plans covering fewer than 1 of 10 participants in 1991. This decline is apparently triggered by a falling inflation rate, from double-digit levels in the early 1980's to low single-digit increases in the early 1990's.

Social Security payments also are subject to annual cost-of-living increases. Such benefits are increased annually by the same amount as the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) when that figure is 3 percent or more per year. The Social Security law

includes provisions for determining the time period for calculating the CPI-W increase, and provides alternative calculations when the increase is not above the 3-percent threshold. Typically, Social Security benefits will increase each year to keep pace with inflation.

Generally, private sector workers covered by a defined benefit pension plan and Social Security can expect their employer's pension benefit to remain unchanged during retirement, and their Social Security benefit to increase annually as the cost of living increases. In contrast, public sector workers are likely to have all retirement income benefits—both pension and Social Security—indexed for inflation.

Examples of possible benefits

When pension benefits alone are considered, public sector employees consistently receive a greater benefit than do private sector employees, but the availability of Social Security affects this relationship. Exhibit 1 provides examples of income from employer pensions and Social Security for 65-year-old employees with identical salary and service histories under three circumstances: a private sector employee who has both a pension and Social Security; a public sector employee who has a pension only; and a public sector employee who has both a pension and Social Security.[14]

Exhibit 1. **Retirement income available at age 65 for public and private sector employees with final-year earnings of $35,000 and $65,000**

Item	Private sector	Public sector	
	With Social Security	Without Social Security	With Social Security
Final earnings, $35,000			
Benefit formula	1 percent of earnings up to $25,000; 1.5 percent above earnings of $25,000	2.18 percent	1.83 percent
Service	30 years	30 years	30 years
Annual pension	$12,000	$22,890	$19,215
Annual Social Security	11,244	0	11,244
Total benefit	23,244	22,890	30,459
Total benefit as a percent of final earnings	66.4	65.4	87.0
Final earnings, $65,000			
Benefit formula	1 percent of earnings up to $25,000; 1.5 percent above earnings of $25,000	2.18 percent	1.83 percent
Service	30 years	30 years	30 years
Annual pension	$25,500	$42,510	$35,685
Annual Social Security	11,976	0	11,976
Total benefit	37,476	42,510	47,661
Total benefit as a percent of final earnings	57.6	65.4	73.3

A private sector employee whose earnings in the year before retirement (final-year earnings) are $35,000 can expect retirement income (pension and Social Security) to replace about two-thirds of earnings—virtually identical to the amount received by a public sector employee who does not have Social Security. In the private sector, Social Security accounts for nearly half the total retirement benefit. Public sector employees covered by Social Security receive pensions lower than those not covered by Social Security, but their total benefit is higher because of the Social Security amount.

At a higher final salary level ($65,000), Social Security provides a proportionately lower benefit, but it is partially counterbalanced by higher pension payments. Overall, income replacement rates decline in the private sector when income rises from $35,000 to $65,000, and a greater share of retirement income comes from pension plans.[15]

At a final salary of $65,000, the private sector employee can expect retirement income equal to just under three-fifths of preretirement earnings. Public sector employees not covered by Social Security have about two-thirds of their preretirement earnings replaced, while those with Social Security continue to receive the highest benefit, with replacement of nearly three-fourths of preretirement income.

Another method of comparing public and private sector pension benefits is to consider both the benefits available and the employee contributions required to obtain such benefits. As noted, the requirement to contribute toward the cost of pension benefits is found frequently in the public sector and seldom in the private sector.

Exhibit 2 shows the percent of final-year earnings contributed toward the cost of pension and Social Security. The amount that employees must contribute toward the cost of retirement income protection is important because such contributions represent income that might otherwise be used for current consumption or savings (including personal retirement savings). At the $35,000 and $65,000 final salary levels, private sector employees, on average, contribute a lower percent of their salary than do public sector employees.

One method of comparing employee contributions to benefits received is to compute a ratio; the higher the ratio of benefits to contributions, the more the employee is receiving in retirement income for the contributions made. However, this calculation is difficult because contribution amounts can vary widely over an employee's work life. One approach is to calculate a ratio of benefits received in the first year of retirement (the percent of preretirement earnings received from pensions and Social Security) to contribu-

tions made in the final year worked (contributions as a percent of earnings). The following ratios are for workers with final-year earnings of $35,000 and $65,000:

	35,000 final earnings	*$65,000 final earnings*
Private sector:		
Pension and Social Security	11 to 1	10 to 1
Public sector:		
Pension only	9 to 1	9 to 1
Pension and Social Security	8 to 1	7 to 1

These ratios were derived by dividing the percent of final earnings received as retirement benefits by the percent of final earnings contributed to retirement plans. For example, the private sector employee earning $35,000 receives a retirement benefit of 66.4 percent of final earnings and contributes 6.2 percent of final earnings to help finance such benefits. Dividing 66.4 by 6.2 yields a ratio of benefits to contributions of approximately 11 to 1.

These figures show that private sector employees tend to get the most retirement income for the contributions they are required to make. Those with the greatest benefits—from public sector pensions plus Social Security—receive the lowest return for their contributions.

The effect of cost of living and other adjustments on pensions and Social Security benefits is illustrated in exhibit 3. The examples assume that retirees began receiving pension and Social Security benefits 5 years ago, and that the cost of living has increased by 3 percent annually. As with the previous examples, the exhibit examines benefits, with and without Social Security, of public and private sector retirees who earned either $35,000 or $65,000 in their last year of employment.

In all cases, public sector employees receive retirement income benefits that continue to keep pace with inflation. The purchasing power of their benefits is maintained at the level it was upon retirement. This assumes that the employer pension plan includes cost-of-living increases, and that the 3-percent inflation rate is low enough to avoid any maximum or other provision that would limit the increase received.

For private sector workers, the purchasing power of retirement income declines because their employer pension payment remains unchanged. At higher incomes, the decline in purchasing power is greater as more of the total retirement income is derived from the employer pension. Thus, for retirees with final earnings of $35,000, retirement income will decline in purchasing power by about 7 percentage points in 5 years; when final earnings are $65,000, the purchasing power decline will be nearly 10 percentage points. Higher inflation rates and longer retirement periods will lead to further declines in purchasing power.

Exhibit 2. **Contributions made to pension and Social Security plans by public and private sector employees**

Item	Private sector	Public sector	
	With Social Security	Without Social Security	With Social Security
Percent of final earnings contribution to:			
Pension	0 percent	7.55 percent	5.11 percent
Social Security	6.2 percent up to $57,600	0 percent	6.2 percent up to $57,600
Final earnings, $35,000			
Contributions in year before retirement:			
Pension	0	$2,642	$1,788
Social Security	$2,170	0	2,170
Total	2,170	2,642	3,958
Total contribution as a percent of final earnings	6.2	7.6	11.3
Final earnings, $65,000			
Contributions in year before retirement:			
Pension	0	$4,908	$3,322
Social Security	$3,571	0	3,571
Total	3,571	4,908	6,893
Total contribution as a percent of final earnings	5.5	7.6	10.6

Defined contribution plans

So far, this analysis has compared benefits available to public and private sector workers from defined benefit pension plans. Defined contribution plans also provide funds for retirement. As noted, such plans are more readily available to employees in the private sector. Typically, defined contribution plans, such as a savings and thrift plan, require employees to contribute to the plan before employer matching funds are available. Because private sector employees rarely contribute toward the cost of a defined benefit pension plan, they may be more willing to invest in a defined contribution plan, which will increase their total income available at retirement. In addition, retirees may continue to invest funds from a defined contribution plan during their retirement years, perhaps gaining earnings that can lessen the eroding purchasing power of a defined benefit pension plan that is not adjusted for inflation.

IN SUM, the debate over the generosity of public and private sector employee retirement income is certain to continue. Several facts are evident.

Exhibit 3. **Retirement income available at age 65, and 5 years after retirement, for private and public sector employees with final-year earnings of $35,000 and $65,000**

Item	Private sector	Public sector	
	With Social Security	Without Social Security	With Social Security
Final earnings, $35,000			
At retirement:			
Annual pension	$12,000	$22,890	$19,215
Annual Social Security	11,244	0	11,244
Total benefit	23,244	22,890	30,459
Total benefit as a percent of final earnings	66.4	65.4	87.0
5 years later:			
Annual pension	$12,000	$26,536	$22,275
Annual Social Security	13,035	0	13,035
Total benefit	25,035	26,536	35,310
Total benefit as a percent of final earnings	71.5	75.8	100.9
Purchasing power	92.9	100.0	100.0
Final earnings, $65,000			
At retirement:			
Annual pension	$25,500	$42,510	$35,685
Annual Social Security	11,976	0	11,976
Total benefit	37,476	42,510	47,661
Total benefit as a percent of final earnings	57.6	65.4	73.3
5 years later:			
Annual pension	$25,500	$49,281	$41,369
Annual Social Security	13,883	0	13,883
Total benefit	39,383	49,281	55,252
Total benefit as a percent of final earnings	60.6	75.8	85.0
Purchasing power	90.6	100.0	100.0

Public sector employees are more likely to receive defined benefit pension plans than are their private sector counterparts, and private sector employees are more likely to receive Social Security. Defined contribution plans are becoming increasingly prevalent among private sector employees, and can provide comfortable retirement benefits.[16] Beyond coverage, defined benefit pension plan provisions differ widely between public and private sector employees, making comparisons difficult. The illustrations presented in the three exhibits are provided to focus attention on details of those plans, and how the details could affect the benefits. □

Footnotes

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[1] See Wendell Cox and Samuel A. Brunelli, "America's Protected Class: Why Excess Public Employee Compensation is Bankrupting the States," *The State Factor*, February 1992.

[2] For example, Lora Mills Lovejoy, "The comparative value of pensions in the public and private sectors," *Monthly Labor Review*, December 1988, pp. 18–26.

[3] See Bradley R. Braden and Stephanie L. Hyland, "Cost of employee compensation in public and private sectors," *Monthly Labor Review*, May 1993, pp. 14–21, and William J. Wiatrowski, "Employee benefits for union and nonunion workers," *Monthly Labor Review*, February 1994, pp. 34–37.

[4] For detailed information on the methodology used in preparing the Employee Benefits Survey, see *BLS Handbook of Methods*, chapter 9, "Employee Benefits Survey," Bulletin 2414 (Bureau of Labor Statistics, September 1992).

[5] Data on the incidence of retirement plans are from the following Bureau of Labor Statistics bulletins: *Employee Benefits in State and Local Governments, 1990*, Bulletin 2398, February 1992, and *Employee Benefits in Medium and Large Private Establishments, 1991*, Bulletin 2422, May 1993.

[6] Data on Social Security coverage for State and local government employees are based on full-time employees covered by a defined benefit pension plan. For more information, see *Employee Benefits in State and Local Governments, 1990*.

[7] Earnings-based defined benefit pension plans are most prevalent among white-collar workers. About 70 percent of State and local government employees are white-collar workers; the largest group among the remainder are police officers and firefighters. (Police officers and firefighters' pensions are typically calculated in the same way as other government employees, although benefits are often larger and retirement can occur earlier.) In the private sector, about half of the work force is made up of white-collar workers. The presence of a large proportion of blue-collar and service workers in the private sector leads to a variety of pension formulas, most notably those not based on earnings. Information on the detailed provisions of private sector defined benefit pension plans is available in *Employee Benefits in Medium and Large Private Establishments, 1991* and *Employee Benefits in Small Private Establishments, 1990*, Bulletin 2388 (Bureau of Labor Statistics, September 1991).

[8] This difference in the number of years used to compute average earnings can have the effect of providing a higher average for public sector employees, assuming that earnings are increasing during each year of service.

[9] The maximum earnings upon which the Social Security tax is applied is adjusted each year based on changes in the average annual wage in the United States.

[10] The Employee Benefits Survey considers whether employees covered by a pension plan must contribute toward the cost of that plan. In a jurisdiction where the local government contributes for the employee, the employee is counted as participating in a plan that does not require employee contributions.

[11] The correlation coefficient between the employee contribution and the benefit percent is .52066, a rate at which the variables are highly positively correlated. As employee contributions increase, benefit percents increase at a rate of slightly more than half as fast.

[12] For a further discussion of the integration of pension benefits and Social Security, see *Employee Benefits in Medium and Large Private Establishments, 1991*.

[13] For more information on cost-of-living adjustments, see *Employee Benefits in State and Local Governments, 1990*.

[14] Exhibit 1 uses average and typical pension benefits, rather than actual replacement rates computed from all pension plans. This compares similar types of pension plans. If

replacement rates for all public and private sector plans were used, differences in plan provisions and methods of computing benefits would affect the results. For more information on replacement rate calculations, see William J. Wiatrowski, "New survey data on pension benefits," *Monthly Labor Review*, August 1991, pp. 8–22.

Exhibit 1 uses a pension formula that varies the percent applied to earnings by the level of earnings. The formula used—1 percent of earnings up to $25,000 multiplied by years of service, and 1.5 percent, multiplied by years of service, of earnings greater than $25,000—is typical of those found in private sector pension plans. Alternatively, a flat percent could be applied to all earnings. Using an average flat percent from private sector pension plans, the results would be slightly higher private sector pension benefits in exhibit 1. The relationship between public and private sector benefits would be unchanged.

The examples used in exhibit 1 do not take into account other pension provisions, such as retirement ages or maximum benefits. For the example used—age 65 with 30 years of service—these provisions would have little or no effect. For more information on the difference in these and other pension provisions between public and private sector plans, see Lora Mills Lovejoy, "The comparative value of pensions in the public and private sectors."

[15] The formula for computing Social Security benefits provides a greater replacement rate for lower income employees. Thus, at $65,000, Social Security replaces a lower percent of preretirement earnings than at $35,000.

The pension replacement at $65,000 is higher than that at $35,000 because more income is subject to the higher percent formula. However, this greater pension replacement does not completely counterbalance the decline in Social Security replacement; the overall replacement rate declines as income rises from $35,000 to $65,000.

[16] For more information on payments from defined contribution plans, see Michael Bucci, "Lump-sum benefits available from savings and thrift plans," *Monthly Labor Review*, June 1993, pp. 57–60.

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