Public and Private Sector Defined Benefit Pensions: A Comparison

The public and private sectors differ in the retirement benefits provided to covered employees. But these differences are less pronounced when factors such as employee contributions and Social Security coverage are considered.

BY ANN C. FOSTER

Although employer costs for employee compensation differ between the public sector ($25.73 per hour worked) and the private sector ($17.49 per hour worked), the proportions allocated to employee benefits are roughly comparable: 30 percent for public sector employees and 28 percent for private sector employees. Pensions made up 7.4 percent of the total benefits package in the public sector and 3.1 percent in the private sector[1]. The dollar cost differential between sectors reflects differences in the work activities and occupations in each sector[2].

The public and private sectors also differ in the incidence of employer-provided benefits. In 1993-94, for example, the incidence of paid sick leave, medical and dental care, and life insurance was much higher among public sector employees than among private sector employees. In the private sector, however, the incidence of benefits for paid holidays and vacations was higher.[3]

Differences in the provision of retirement benefits between the public and private sectors has received much attention. The focus has often been the differential between benefit amounts, without considering the factors underlying these differences. This article uses data from the Bureau of Labor Statistics' Employee Benefits Survey (EBS)[4] to make a detailed comparison of public and private pensions. Comparisons are made between full-time workers in State and local governments and those in medium and large private establishments (those employing 100 workers or more). These establishments are comparable in size to most State and local governments.[5]

Retirement plan coverage

In 1993-94, 96 percent of full-time State and local government workers were covered by a retirement plan compared to 78 percent of workers in medium and large private establishments. Ninety-one percent of public employees participated in defined benefit pension plans compared to 56 percent of private employees. Among private sector employees, however, defined contribution plan coverage was greater than among public employees (49 percent compared to 9 percent). Among workers with defined benefit coverage, 3 percent of public employees and 45 percent of private employees were also covered by a defined contribution plan.[6]

Social Security benefits are an important component of most workers' retirement benefits. While Social Security coverage is universal in the private sector, not all public

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employees are covered. EBS data show that in 1994, 76 percent of full-time participants in public pensions were covered by Social Security.[7]

Therefore, a typical full-time State and local government employee is covered by a defined benefit pension plan and probably Social Security. A typical full-time employee in a medium or large private establishment is covered by a defined benefit and/or defined contribution plan and Social Security.

The following sections compare provisions of defined benefit pensions because most full-time State and local government employees are covered by these plans.

Employee contributions

A direct comparison of plan benefits needs to account for employee contributions. EBS data show that in 1994, 72 percent of public employees with defined benefit coverage had to contribute to its cost. The average participant contribution was 5.9 percent of earnings and ranged from 5.8 percent among white-collar workers to 6.2 percent among teachers; among blue-collar and service workers the average was 5.9 percent. In comparison, in 1993, 97 percent of participants in medium and large private establishments had benefits entirely paid for by their employers. Assuming the same employer contribution, employees who contribute to the cost of their coverage should expect to receive a larger benefit than comparable workers who do not contribute.[8]

Benefit formulas

Virtually all full-time public employees (99 percent) covered by defined benefit pension plans were subject to terminal earnings-based formulas. In the private sector, only 61 percent of defined benefit participants were in terminal earnings-based plans.[9]

These plans compute benefits as a fixed percent of terminal earnings multiplied by years of service. For the majority of public sector participants (61 percent), terminal earnings are the average of an employee's highest 3 years' earnings. For most private sector participants (83 percent), terminal earnings are defined as the average of an employee's highest 5 years' earnings.

The majority of participants in plans with a terminal earnings formula have a pension benefit formula based on a flat percent or factor that also varies by sector. The average factor is 1.85 percent in public plans and 1.48 percent in private plans. If terminal earnings of $50,000 are assumed, a public employee with 30 years' service would receive an annual retirement benefit of $27,750 ($50,000 x .0185 x 30); an employee in the private sector with 30 years' service would receive a benefit of $22,200 ($50,000 x .0148 x 30), or 80 percent of that received by the public sector employee.

Social Security

One way in which Social Security affects pension benefits is through plan integration. For State and local government workers, the employee contribution and the formula used to compute benefits vary by Social Security coverage status.

Plan integration occurs when benefits are adjusted to account for employer Social Security costs. In 1993-94, 48 percent of full-time private workers were in defined benefit plans that integrated pension benefits with Social Security compared to 4 percent of their public counterparts.[10]

Integration is usually accomplished by varying the percent of earnings used to compute benefits. An example of a typical integrated formula is:

1 percent of earnings up to
$25,000 x years of service
+
1.5 percent of earnings over
$25,000 x years of service

The impact of plan integration on the benefits received depends on a worker's earnings level. Research using data from the 1991 EBS found that for an employee retiring at age 65 with 30 years' service and a final salary of $25,000 or less, integrated plans replaced a lower proportion of final earnings than nonintegrated plans. For a comparable employee with a final salary of $35,000 or more, integrated plans replaced a greater proportion of final salary than nonintegrated plans.[11]

In the public sector, an employee's required defined benefit plan contribution and the formula used to determine benefits vary by Social Security coverage status. Research using data from the 1990 EBS found that the average benefit for public employees covered by Social Security was 1.83 percent of terminal earnings times years of service. For those not covered by Social Security, the average benefit was 2.18 percent times years of service. Public employees covered by Social Security made lower average contributions to their defined benefit pension plans (5.11 percent of earnings); their counterparts without Social Security coverage contributed 7.55 percent of earnings towards defined benefit pension plans.[12]

Normal retirement

Requirements for normal retirement differ considerably between the public and private sectors. For example, in 1993-94, two-thirds of full-time public sector participants in defined benefit plans could retire at age 55 or earlier upon meeting service requirements and still receive normal (unreduced) pensions compared to one-tenth in the private sector. (See table 1.)

Forty-three percent of public sector participants could retire at any age after satisfying a service requirement, usually 30 years, much higher than the 5 percent for participants in the private sector. Another 21 percent of public sector participants

Table 1. Requirements for normal retirement, full-time employees, by establishment type, 1993-94

Requirement	Medium and large private establishments	State and local governments
	Percent	
Total with normal retirement provision	100	100
Younger than age 55	([1])	1
No service requirement	-	([1])
Service requirement		
5 years	-	([1])
20 years	-	([1])
25 years	-	([1])
30 years	([1])	([1])
Age 55	4	21
No service requirement	-	1
Service requirement		
5 years	1	2
10 years	-	([1])
20 years	([1])	([1])
21-24 years	-	([1])
25 years	([1])	5
30 years	3	11
More than 30 years	([1])	1
Age 56-59	([1])	([1])
Service requirement		
20 years	([1])	-
25 years	-	([1])
30 years	([1])	-
Age 60	13	5
No service requirement	3	2
Service requirement		
5 years	3	2
6-9 years	-	([1])
10 years	1	1
15 years	([1])	-
20 years	([1])	-
25 years	1	([1])
30 years	4	([1])
More than 30 years	([1])	-
Age 61	([1])	-
Service requirement		
15 years	([1])	-
Age 62	21	6
No service requirement	3	([1])
Service requirement		
5 years	5	([1])
10 years	7	5
15 years	1	([1])
20 years	2	-
21-24 years	([1])	-
25 years	1	([1])
30 years	1	([1])
More than 30 years	1	-
Age 63-64	2	3
No service requirement	1	-
Service requirement		
5 years	-	3
10 years	([1])	-
25 years	([1])	-
Age 65	48	8
No service requirement	26	2
Service requirement		
1-4 years	4	([1])
5 years	15	3
6-9 years	([1])	([1])
10 years	2	3
20 years	([1])	-
25 years	1	-
Service requirement only	5	43
Less than 30 years	([1])	7
30 years	4	29
More than 30 years	([1])	8
Sum of age plus service	8	12
Less than 80	2	([1])
80	1	4
81-89	3	1
90	1	4
More than 90	1	2

[1] Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dash indicates no employees in this category.

could retire at age 55, most commonly after satisfying a service requirement of 30 years. In the private sector, 4 percent of defined benefit plan participants could retire at age 55 after satisfying a service requirement, also commonly 30 years. In comparison, 48 percent of private sector participants had a minimum age of 65 for normal retirement (with varying service requirements) compared to 8 percent of public sector participants.

Early retirement

Among defined benefit participants in 1993-94, 95 percent of private sector and 87 percent of public sector employees participated in plans allowing early retirement. Among private sector participants with early retirement provisions, the greatest proportion were in plans allowing early retirement at age 55 with 10 years of service (34 percent), but substantial proportions were in plans allowing early retirement at age 55 with 5 years of service (21 percent) and age 55 with 15 years of service (13 percent).

Table 2. Requirements for early retirement, full-time employees, by establishment type, 1993-94

Requirement	Medium and large private establishments	State and local governments
	Percent	
Total with early retirement provision	100	100
Younger than age 55	9	20
No service requirement	(1)	-
Service requirement		
5 years	1	8
6-9 years	(1)	(1)
10 years	2	1
15 years	1	1
20 years	1	5
25 years	2	1
30 years	(1)	3
Age 55	72	46
No service requirement	2	-
Service requirement		
Less than 5 years	1	3
5 years	21	11
6-9 years	(1)	1
10 years	34	9
11-14 years	(1)	-
15 years	13	5
20 years	2	3
25 years	(1)	10
30 years	-	2
Age 56-59	1	-
No service requirement	-	-
Service requirement		
10 years	(1)	-
15 years	(1)	-
20 years	(1)	-
25 years	(1)	-
30 years	1	-
Age 60	7	3
No service requirement	(1)	-
Service requirement		
5 years	2	(1)
10 years	3	1
15 years	1	-
20 years	(1)	2
Age 62	3	(1)
No service requirement	(1)	-
Service requirement		
5 years	(1)	-
10 years	2	(1)
More than 30 years	(1)	-
Service requirement only	5	26
Less than 30 years	(1)	16
30 years	4	9
More than 30 years	(1)	(1)
Sum of age plus service	3	3
Less than 80	2	3
80	(1)	(1)
81-89	(1)	-
90 and above	(1)	-

[1] Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dash indicates no employees in this category.

The most common age and service requirements for public sector participants were age 55 and 5 years of service (11 percent), age 55 and 25 years of service (10 percent), and age 55 and 10 years of service (9 percent).

Twenty percent of public sector participants were in plans allowing early retirement before age 55 with varying service requirements, compared to 9 percent of private sector participants. Twenty-six percent of public sector participants were in plans with a service requirement only and could potentially retire before age 55. Five percent of private sector participants were in such plans.[13]

Benefit comparisons

Wage replacement rates are a better indication of the degree of income protection provided by a retirement plan than absolute benefit amounts. A replacement rate is the proportion of a retiree's pre-retirement earnings during his or her final year of work that is "replaced" by the pension benefits received.

When defined benefit pension plan benefits are considered in isolation, public employees usually have higher replacement rates than private employees. When Social Security benefits are considered, however, a different pattern emerges.

As may be seen in table 3, average replacement rates increase with years of service.[14] When considering pensions only, however, public employees without Social Security have the highest replacement rates and private employees the lowest.

Because virtually all public sector participants are in plans with a terminal earnings formula, pension only replacement rates vary little as final earnings levels increase. For private sector participants, replacement rates decrease with earnings levels. One reason is that 22 percent are in plans with a dollar amount formula that provides the same benefit to all workers at equal levels of service regardless of earnings histories. This results in a decrease in the replacement rate as earnings increase.[15]

Social Security benefits replace more pre-retirement earnings for those at lower earnings levels.

Table 3. Average replacement rates for specified final earnings and years of service for retirement at age 65,[1] full-time employees, 1993-94

(in percent)

Final annual earnings	Years of plan participation[2]		
	10	20	30
	Private employees - pension only		
$15,000	12.2	24.5	36.8
35,000	10.1	20.1	29.2
65,000	9.6	19.2	28.9
	Private employees - pension plus Social Security[3]		
$15,000	39.3	62.8	84.2
35,000	28.1	47.3	64.6
65,000	22.2	37.7	49.7
	Public employees with Social Security - pension only		
$15,000	17.3	34.1	51.0
35,000	17.2	34.1	51.0
65,000	17.3	34.2	51.0
	Public employees with Social Security -pension plus Social Security[3]		
$15,000	44.8	73.7	100.0
35,000	35.8	62.1	86.8
65,000	30.4	53.7	73.0
	Public employees without Social Security - pension only		
$15,000	20.8	41.8	62.6
35,000	20.8	41.7	62.6
65,000	20.8	41.7	62.5

[1]A replacement rate is computed by dividing a pension benefit by earnings in the final year of work. Private employees are assumed to have retired on January 1, 1993 and public employees on January 1, 1994. Final earnings for private employees are for 1992 and public employees for 1993. Earnings histories, necessary for applying pension formulas, were constructed for each final earnings level using data provided by the Social Security Administration.

For pension formulas integrated with Social Security and for Social Security benefit computation, a worker is assumed to have retired after having paid into Social Security for the same number of years as years of plan participation. Computations exclude participants in cash-account pension plans or plans with benefits based on career contributions.

[2]Time spent satisfying plan participation requirements was excluded from replacement rate computation unless the plan specified that such time was to be included in benefit computations.

[3]Excludes benefits for spouses and other dependents.

This is why replacement rates for pension plus Social Security for both private employees and covered public employees decrease as final earnings levels increase.

When Social Security benefits are considered, replacement rates for private employees tend to be higher than those for public employees without Social Security coverage. Public employees with Social Security, however, have the highest combined replacement rates of all groups.

Post-retirement pension increases

Inflation can seriously erode the purchasing power of a retiree's defined benefit pension. To prevent such erosion, some plans specify an automatic cost-of-living increase, usually based on changes in the Consumer Price Index. In 1993-94, 54 percent of public pension participants were in plans that provide these automatic increases; in the private sector, 4 percent of participants had such provisions.

Some employers provide a discretionary or ad hoc increase to adjust retiree benefits for inflation. In 1993-94, 13 percent of public participants were in plans that had granted an ad hoc increase during the previous 5 years; among private participants, the proportion was 6 percent.[16]

Social Security retirement benefits also have an automatic annual cost-of-living adjustment (COLA), based on changes in the Consumer Price Index.

Therefore, most private sector workers can expect their defined benefit pension benefits to remain unchanged, thus decreasing in real terms during retirement. Their Social Security benefits, however, would increase with inflation because of the COLA**.** Many public employees will have both pension and Social Security benefits indexed for inflation.[17]

Conclusions

The argument over the generosity of public and private pensions will likely continue. Public sector workers are more likely to be covered under a defined benefit pension plan and less apt to have Social Security coverage than are private sector workers. Public sector participants in defined benefit plans are much more likely to be able to retire at or before age 55 and still receive normal (unreduced) retirement benefits than are private sector participants. Public employees are also more likely to participate in plans with cost-of-living adjustments than are private employees.

Although defined benefit replacement rates are higher for public employees, they are more apt to have to contribute to their pensions than private employees, most of whom have wholly employer financed coverage.

A pension is only one factor in an employee's compensation. The value of other employer-provided benefits and an employee's wage rate are also important.

[1] For more information on pay and benefit cost differences, see the news release, "Employer Costs for Employee Compensation—March 1996," USDL: 96-424, U.S. Department of Labor, October 10, 1996.

[2]For example, required government activities like public education and safety necessitate a large proportion of white-collar professionals and highly skilled service occupations, respectively. Private industry sectors such as retail and wholesale trade have a large proportion of occupations, such as sales, with comparatively lower compensation costs.

For a detailed examination of how these differences in industry activity and occupational mix influence pay and benefits, see Bradley R. Braden and Stephanie L. Hyland, "Cost of Compensation in Public and Private Sectors," *Monthly Labor Review*, May 1993, pp. 14-21. More information on occupational pay differentials between the public and private sectors may be found in John E. Buckley, "Pay in Private Industry and State and Local Governments," *Compensation and Working Conditions,* September 1996, pp. 22-26, and Michael A. Miller, Jr., "The Public-Private Pay Debate: What do the Data Show?," *Monthly Labor Review*, May 1996, pp. 18-29.

[3] The lower incidence of vacation coverage in the public sector is due to the large number of teachers who rarely receive paid vacations. For more information, see Ann C. Foster, "Employee Benefits in the United States, 1993-94," *Compensation and Working Conditions,* Spring 1997, pp. 46-50.

[4] The Employee Benefits Survey (EBS) is a study of the incidence and characteristics of employer-provided benefits. The EBS is conducted in three stages during a 2-year cycle. Data for small private establishments (fewer than 100 workers) and for State and local governments are collected in even numbered years, while data for medium and large private establishments (100 workers or more) are collected in odd numbered years. The EBS (1993-94) covers about 15 million public sector and 83 million private sector workers.

[5] An earlier article used 1990-91 EBS data to compare public and private pension benefits. In addition to using more recent EBS data, this article examines actual replacement rates computed from all pension plans; the earlier article used average and typical pension benefits to illustrate differences. This article examines aspects, such as differences in early and normal retirement requirements, not covered in the earlier article. For more information, see William J. Wiatrowski, "On the Disparity between Private and Public Pensions," *Monthly Labor Review*, April 1994, pp. 3-9. This article is an expansion and elaboration of information in Ann C. Foster, "Comparing Public and Private Pensions," in *Retirement Benefits: Preserving Benefits in Changing Times*, Selected Proceedings of the NEA Retirement and Benefits Forum, November 16-19, 1995, Washington, DC: National Education Association, 1996.

[6]For more information, see *Employee Benefits*

1993 Bulletin 2456, Bureau of Labor Statistics,
Employee Benefits in State and Local
, Bulletin 2477, Bureau of

[7] *Employee Benefits in State and Local*
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Research examining differences between the

systems accounted for employee contributions. For
Federal Civil Service Re-

and Private-Sector Retirement Systems
EPW, Congressional Research Service, June 5,

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Benefits in Medium and Large Private Establish-
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For more information, see Avy D. Graham,

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Participants in plans with a sum of age plus

also be eligible to retire before age 55 if they joined

pants are included, 17 percent of private employees and 49 percent of public employees could potentially retire before age 55. For a more detailed comparison of public and private sector differences in early retirement provisions, see Ann C. Foster, "Early Retirement Provisions in Defined Benefit Pension Plans," *Compensation and Working Conditions*, December 1996, pp. 12-17.

[14] The replacement rates discussed are for a straight-life annuity or periodic payment for the life of the retiree with no additional payments to survivors. For married employees, the standard benefit prescribed by law is the joint-and-survivor annuity, which provides payments to a surviving spouse after a retiree dies. For more information, see *Looking Out for #2: A Married Couple's Guide to Understanding Your Benefit Choices at Retirement from a Defined Benefit Plan*, Publication 1566, U.S. Department of the Treasury, Internal Revenue Service, 1991.

[15] It should be noted that dollar amount formulas are much more common in plans covering blue-collar workers. For example, in 1993, 22 percent of all private workers covered by a defined benefit pension plan were in plans with dollar amount formulas. Seven percent of professional, technical, and related employees and 11 percent of clerical and sales employees were in such plans compared to 36 percent of blue-collar and service employees. While 61 percent of private sector participants were in terminal earnings-based plans, 74 percent of professional, technical, and related employees and 73 percent of clerical and sales employees were in such plans compared to 48 percent of blue-collar and service employees. For more information, see *Employee Benefits in Medium and Large Private Establishments, 1993.*

[16] The incidence of ad hoc increases was higher in previous years when inflation was higher. For instance, in 1989-90, 16 percent of public pension plan participants and 22 percent of private participants were in plans that had granted at least one ad hoc increase in the previous 5 years. For more information, see *Employee Benefits in State and Local Governments, 1990,* Bulletin 2398, Bureau of Labor Statistics, 1992, and *Employee Benefits in Medium and Large Firms, 1989*, Bulletin 2363, Bureau of Labor Statistics, 1990.

[17] For examples of this effect on the purchasing power of public and private sector retirees, see Ann C. Foster, "Comparing Public and Private Pensions," or William J. Wiatrowski, "On the Disparity Between Private and Public Pensions."