The comparative value of pensions in the public and private sectors

State and local governments generally provide more generous pensions than does private industry; part of the disparity can be explained by the greater likelihood of public sector workers to contribute toward the cost of their benefits

LORA MILLS LOVEJOY

Do public pensions provide more benefits than do private pensions? The Bureau of Labor Statistics' first survey of benefits available to State and local government employees reveals that public pension plans tend to provide more liberal benefits, but are more likely to require employee contributions than are their private sector counterparts.

To compare employer-financed private pension plans with public sector plans, one must consider a variety of factors, including the type of formula used to compute benefits, age and service requirements for benefit eligibility, the extent to which employees help finance their pensions, and the incidence of postretirement annuity increases. Also important is the presence of other types of retirement plans financed entirely or partially by employers. For example, Social Security, a plan financed jointly by employers and employees, is nearly universal in the private sector and is quite common in State and local governments. In contrast, savings and thrift, stock ownership, and profit-sharing plans commonly supplement pension plans in the private sector, but savings and thrift plans are uncommon in the public sector, and stock ownership and profit-sharing plans are not relevant to government entities.

This article discusses key features of pension plans in private industry and in State and local governments and contrasts the proportion of preretirement earnings replaced by plans in the two sectors. Data are from the Bureau's Employee Benefits Survey—the 1986 survey of medium and large firms in private industry and the 1987 survey of State and local governments.[1] In this article, private sector employees are considered as a group; however, public sector employees are divided into three categories: teachers, police and firefighters, and "regular" employees (that is, all employees except teachers and police and firefighters).

Types of plans

Retirement benefits may come from either defined contribution plans or defined benefit plans. A defined contribution plan specifies the rate at which employer contributions are made, but does not specify an employee's ultimate benefit, which depends on the balance of contributions and investment earnings at the time of retirement.[2] A defined benefit pension plan, in contrast, contains a formula for determining retiree annuities, but does not obligate the employer to a predetermined formula for making contributions to the plan.

There was a significant difference between the public and private sectors in the availability of a retirement plan. Of the private industry workers surveyed in 1986, 89 percent participated in some type of retirement plan, compared with 98 percent of State and local government workers.

Similarly, the availability of the two types of retirement plans varied significantly between the two sectors. Defined benefit plans were more prevalent among State and

Lora Mills Lovejoy is an economist in the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics.

local governments where 93 percent of employees had this type of plan, compared with 76 percent in private industry. Conversely, 47 percent of private sector workers participated in one or more defined contribution retirement plans, compared with 9 percent of State and local government workers.[3] The following tabulation shows the percent of private industry and public sector employees in defined benefit and defined contribution plans:

	Defined benefit	*Defined contribution*	*Combination of both*
Private industry, 1986:			
Total workers	42	13	34
State and local governments, 1987:			
Total workers	89	5	4
Regular workers	88	5	4
Teachers	91	4	4
Police and fire-fighters	85	6	7

Workers in State and local governments were more likely to depend entirely on a defined benefit plan than were workers in private industry. One-third of the private industry workers participated in both defined contribution and defined benefit plans, while only 4 percent of public sector workers had both.

The lower participation in defined contribution plans by public sector workers is to be expected because there are fewer savings and thrift plans and no stock ownership or profit-sharing plans in State and local governments. Stock ownership and profit-sharing plans are, by their nature, inappropriate for a government organization, and savings and thrift plans are not common where workers typically contribute a substantial amount to their defined benefit pension plans, as they do in the public sector.

The incidence of "salary reduction" arrangements, that is, plans which allow employees to make contributions on a pretax basis, was 33 percent of private sector employees and 28 percent of public sector employees. The type of salary reduction plan, however, varied considerably. In the private sector, salary reduction plans were primarily savings and thrift, in which the employer matches some portion of the employee's savings. In contrast, the majority of public sector salary reduction plans were "free-standing," that is, the employer made no contributions.[4] In addition, 9 percent of the State and local government employees made pretax contributions to their defined benefit pension plan. This was rarely observed among private industry employees.

Defined benefit plan provisions

The discussion in this section is limited to features of defined benefit pension plans because defined contribution plans covered too few government employees to permit meaningful conclusions. In defined benefit pension plans, benefit levels are largely determined by the formula specified for calculating annuities. These annuities may also be affected by the extent to which employee earnings are considered in the benefit formula, whether the plan includes a ceiling on pension benefits, and whether annuities are coordinated with Social Security.

The formulas. The three types of formulas most common among defined benefit pension plans are flat dollar amount, career earnings, and terminal earnings. A flat dollar amount formula specifies a rate per year of service which is multiplied by the number of years worked to give a monthly benefit. For instance, if the flat dollar amount is $10 per year of service and the employee worked 30 years, the annuity would be $300 per month. The flat dollar benefit is independent of employee earnings.

Earnings-based formulas compute benefits by multiplying a percentage factor by years of service. In a career earnings formula, a percentage of each year's pay accrues towards the final benefit. For example, if a plan's benefit formula was 1.5 percent of each year's salary, and an employee's salary averaged $15,000 over a 30-year career, then at age 65 the employee would be entitled to an annual pension of $6,750 (.015 *x* $15,000 *x* 30). A terminal earnings formula applies the total percentage to average earnings in the final years of service, typically the last 3 or 5 years. The employee in the previous example may have earned a total of $105,000 in the last 5 years of his or her career. If the benefit formula was applied to earnings in that 5-year period, the annual payments would equal $9,450 (.015 *x* 21,000 [105,000 ÷ 5] *x* 30). The following tabulation shows the percent of private industry and public sector workers covered by various types of formulas of defined benefit plans:

	Terminal earnings	*Career earnings*	*Dollar amount*	*Other*
Private industry, 1986:				
Total workers	57	15	26	1
State and local governments, 1987:				
Total workers	100	*	*	0
Regular workers	99	*	1	0
Teachers	100	0	0	0
Police and fire-fighters	100	0	0	0

*Less than 0.5 percent.

By far, the most common formula among State and local government plans was terminal earnings, which covered nearly all public sector workers participating in pension plans, but just over one-half of the private industry workers. Career and flat dollar amount formulas, almost nonexistent among government plans, covered 15 percent and 26 percent, respectively, of pension plan participants in private industry. Career earnings formulas applied primarily to white-collar workers, while dollar

amount formulas were predominant among blue-collar workers.

On average, plans with terminal earnings formulas used a higher percentage factor to compute benefits in the public sector than in private industry. The average flat percent for private industry was 1.62 percent, while the public sector's overall average was 1.89 percent. The average rates were higher for teachers (1.91 percent) and police and firefighters (2.16 percent) than for regular employees (1.86 percent).[5]

Another area of difference between private and public plans is the availability of alternative benefit formulas. These formulas are often used to provide a minimum pension for a worker who may not have completed a full career of service with the employer or who has had relatively low earnings. One-half of the participants in private industry plans with terminal earnings formulas had an alternative formula available, most often a flat dollar amount. In comparison, 27 percent of regular workers and police and firefighters, and 38 percent of the teachers were in public sector plans with alternative formulas, the most common being a flat dollar amount.

Definition of earnings. Terminal earnings formulas differ in defining earnings upon which pensions are based. The most common definitions are 3- or 5-year averages,[6] with final year's pay specified in some public sector plans. For most workers, a pension based on final year's pay would tend to be higher than one based on an average of 3 years' earnings, just as a pension based on a 3-year average is likely to be higher than one based on a 5-year average. The large majority of private industry workers were in plans which based pension benefits on a 5-year average. In contrast, State and local government workers were more likely to be in plans using a 3-year average. Also, some public sector workers, particularly police and firefighters, had benefits based on the final-year salary, a

Table 1. Percent of workers participating in pension plans with minimum age and associated service requirements for normal retirement,[1] medium and large firms in private industry and State and local governments

Age and service requirement [2]	Private industry, 1986	State and local governments, 1987			
	All workers	All workers	Regular workers[3]	Teachers	Police and firefighters
Total	100	100	100	100	100
No age requirement	13	38	35	45	36
Service requirement:					
Less than 30 years	0	4	3	2	23
30 years	13	26	26	29	11
More than 30 years	(4)	8	5	13	1
Less than age 55	(4)	1	(4)	0	23
Service requirement:					
None	0	(4)	0	0	2
Less than 20 years	0	(4)	(4)	0	1
20 years or more	(4)	1	(4)	0	19
Age 55	3	22	23	18	25
Service requirement:					
None	0	2	2	0	6
Less than 30 years	2	5	6	3	15
30 years or more	1	14	14	15	3
Age 56-60	15	7	4	13	6
Service requirement:					
None	4	1	(4)	1	1
Less than 15 years	6	5	2	10	5
15 years or more	5	1	1	2	1
Age 61-62	20	11	13	7	6
Service requirement:					
None	4	(4)	(4)	0	0
Less than 10 years	2	1	1	0	1
10 years or more	13	10	12	7	5
Age 63-65	38	13	17	5	2
Service requirement:					
None	32	1	2	1	1
Less than 10 years	2	6	9	1	1
10 years or more	4	5	6	4	0
Sum of age plus service[5]	11	8	8	11	3
Equals 85 or less	7	2	3	2	1
Equals more than 85	4	5	4	9	1

[1]Normal retirement is the point at which the worker could retire and immediately receive all accrued benefits by virtue of service and earnings, without reduction due to age.

[2]If a plan had alternative age and service requirements, the earliest age and associated service were tabulated; if one alternative did not specify an age, that requirement was tabulated.

[3]All employees except teachers and police and firefighters.

[4]Less than 0.5 percent.

[5]In some plans, participants must also satisfy a minimum age or service requirement.

NOTE: Because of rounding, sums of individual items may not equal totals.

provision not found in the private sector. The following tabulation shows the percent of private industry and State and local government workers under terminal earnings formulas, by the period upon which the formula is based:

	Terminal earnings based on—			
	Final-year pay	*3-year average pay*	*5-year average pay*	*Other period**
Private industry, 1986:				
Total workers	0	13	84	3
State and local governments, 1987:				
Total workers	4	65	19	12
Regular workers	4	64	19	13
Teachers	1	68	21	10
Police and firefighters	13	63	13	12

* Included the final 2, 3, 4, 10, or 15 years of service, or periods not immediately prior to retirement.

Benefit ceilings. Most plans had some type of ceiling on benefits. Ceilings usually were either a limit on the years of credited service used in the benefit formula (for example, a ceiling of 30 years of service in computing benefits) or a percentage of average annual career or terminal earnings (a benefit of, say, 60 percent of earnings). The following tabulation shows the percent of private industry and public sector workers under plans with and without ceilings on maximum benefits:

	Subject to ceiling			
	Total	*Limit on years of credited service*	*Other ceiling*	*No ceiling**
Private industry, 1986:				
Total workers	41	36	7	59
State and local governments, 1987:				
Total workers	48	23	28	52
Regular workers	46	19	29	54
Teachers	48	26	22	52
Police and firefighters	71	39	41	29

* The benefit yielded by the formula is limited to either a percent of terminal or career earnings that is often coordinated with primary Social Security payments, or to a flat dollar amount.

(Sums of individual items in the preceding tabulation may not equal the total because more than one benefit formula within a plan may have a maximum benefit provision. Also, some benefit formulas contain a limit on years of credited service and another maximum provision.)

The overall incidence of ceilings was somewhat greater in State and local governments than in private industry. Although limits expressed as caps on years of credited service were more common in the private sector, they were more than offset by the higher incidence of percent-of-earnings limits in the public sector. Police and firefighters were most likely to have limits in their plans for two reasons: because of the physical demands required in this type of work, employers may want to encourage an earlier retirement; and, because the employee will have a shorter career service with less time to accrue benefits towards retirement, a higher formula per year generally applies. A police officer or firefighter who continued to work past the normal retirement age could possibly accrue more than 100 percent of preretirement income. Maximums may also be influenced by an employer's policy on career service and retirement.

Social Security integration. An integral part of most workers' retirement income is provided through Old Age, Survivors, Disability, and Health Insurance, or Social Security. In the 1987 survey, 73 percent of the State and local government workers in defined benefit pension plans were covered by Social Security. The highest coverage occurred among regular employees (78 percent) and the lowest, among police and firefighters (61 percent).[7] In contrast, virtually all workers in the private sector were covered by Social Security.[8] Consequently, retirement plans for State and local governments not participating in the Social Security system must provide more liberal pensions if they are to match the combination of pension and Social Security benefits provided elsewhere.

A common practice of employers is to formally coordinate pension payments with Social Security benefits. Such "integration" reduces employer costs by explicitly taking account of Social Security payments when determining pension benefits.[9] The incidence of integration was much higher in private plans than public plans: In private industry, 62 percent of defined benefit pension plan participants were in plans that were integrated with Social Security while the rates in the public sector were 21 percent for regular employees, 13 percent for teachers, and 7 percent for police and firefighters. Even when those public workers covered by Social Security were considered, only 1 of 4 was in a plan with an integrated formula.

Normal and early retirement

To be eligible for "normal" retirement (that is, to receive a pension not reduced because of age), pension plans almost always require employees to have attained a certain age, served with the employer for a specified number of years, or have a minimum combination of age and years of service. Age and service requirements for normal retirement differed considerably between the public sector and private industry. (See table 1.) The most striking difference was in the frequency of plans without age requirements: 38 percent of the public sector pension

participants could retire at any age after satisfying a service requirement, while only 13 percent of those in private industry had such a provision. For both groups, 30 years was the most common service requirement for retirement without regard to age.

Police and firefighters had much earlier normal retirement ages than did other public sector workers: 23 percent could retire at specified ages under 55, most commonly age 50. Most, however, had to have 20 or more years of service. Twenty-three percent of regular employees and 25 percent of police and firefighters could first retire at age 55; only 3 percent of private workers could retire at this age.

Private sector workers who participate in pension plans were commonly required to reach age 62 or 65 before qualifying for normal retirement benefits. About 6 of 10 private sector workers had an age requirement greater than 60, compared with 1 of 4 public sector workers. Age 65 was by far the most commonly designated retirement age in private industry. The majority of private industry workers, however, were not subject to a service requirement at that age.

Retirement before the normal retirement age, but with a benefit reduction ("early" retirement), was available to 98 percent of the private sector workers; in the public sector, 91 percent of regular workers, 94 percent of teachers, and 56 percent of police and firefighters had such a feature in their pension plans. (See table 2.) The lower percentage for police and firefighters is attributable to this group's relatively early age requirements for normal retirement. As with normal retirement, a much higher percentage of public sector workers were eligible to retire early after satisfying a service requirement, regardless of age.

Replacement rates

A convenient way to compare the combined effects of provisions of a number of pension plans is to calculate the benefits that would be available to employees retiring after specified lengths of service and with given earnings histories. These benefits, expressed as percent of earnings in the last year of work, are referred to as "replacement rates."[10]

This discussion of replacement rates is limited to defined pension plans. Defined contribution plans could not be included because they do not contain explicit formulas for calculating benefits. Yet defined contribution plans often contribute significantly to retirement income, particularly in private industry.[11] If *all* retirement benefits were compared here, the disparity between private industry and the public sector would be noticeably reduced.

Replacement rates for several earnings and service assumptions were calculated using the benefit formula in each plan that would yield the greatest annuity for the specified assumptions. The calculations assume normal retirement at age 65 (therefore no benefit reductions were made for early retirement) and do not reflect an annuity reduction to pay for survivor benefits.[12] It should be noted that about 9 of 10 public sector workers and 2 of 3 private industry workers were in plans that permitted retirement with full benefits at ages earlier than 65. Replacement rates from pension plans at ages 62–65 would be affected only slightly by reduced Social Security benefits. Under age 62, only the rates from the pension plan alone are relevant (given that Social Security benefits are generally first available at age 62).

Table 3 shows the replacement rates resulting from combined pension and Social Security benefits and from pension benefits only for private and public workers, by final-year earnings and years of service.

On average, combined pension and Social Security benefits for private industry and State and local government retirees with 20 years of service and final-year earnings of $25,000 replaced 43.2 percent and 67.8 percent, respectively, of preretirement income. Replacement rates were highest for police and firefighters. At each combination of earnings and service, public sector workers had higher average replacement rates than did their counterparts in the private sector.

Higher average replacement rates in the public sector stem partly from a lower incidence of Social Security integration, which reduces the benefit payable from a pension plan. Also, as noted earlier, terminal earnings formulas, more common in the public sector, result in more liberal replacement rates because more emphasis is put on the higher earnings typical in the last years of an individual's career. This tendency is accentuated by the frequent use of a 3-year average (and at times a final-year pay definition) in public sector terminal earnings formulas, as opposed to the 5-year average that is typical in terminal earnings formulas of private employers.

Table 3 also shows the replacement rates for public sector workers not covered by Social Security. Within the public sector, as would be expected, average pension plan replacement rates are higher for jurisdictions without Social Security coverage than for those covered by Social Security. However, the total benefit (pension plus Social Security) is higher when workers are covered by both sources of retirement income, rather than when workers are covered only by a pension plan.

At 40 years of service, replacement rates for each of the public sector groups exceeded 75 percent. According to the President's Commission on Pension Policy, this was more than sufficient to maintain preretirement standards of living, considering changes in income tax rates at age 65 and modified saving and consumption patterns.[13]

Replacement rates resulting from pensions and Social Security benefits and from pensions only for police and firefighters increased less than those for other public sec-

Table 2. Percent of workers participating in a pension plan with minimum age and associated service requirements for early retirement,[1] medium and large firms in private industry and State and local governments

Age and service requirement [2]	Private industry, 1986	State and local governments, 1987			
	All workers	All workers	Regular workers [3]	Teachers	Police and firefighters
Total	100	100	100	100	100
Participants in plans permitting early retirement	98	90	91	94	56
No age requirement	5	22	21	27	12
Service requirement:					
Less than 20 years	1	3	2	4	1
20 years or more	5	19	19	22	12
Less than age 50	1	1	([4])	([4])	7
Service requirement:					
None	0	0	0	0	0
Less than 20 years	1	([4])	([4])	([4])	2
20 years or more	0	1	0	0	6
Age 50	10	16	17	16	16
Service requirement:					
None	([4])	([4])	0	0	2
Less than 15 years	6	7	9	2	8
15 years or more	3	9	8	14	6
Age 51 - 52	0	([4])	([4])	0	0
Service requirement:					
20 years	0	([4])	([4])	0	0
Age 55	66	39	40	40	16
Service requirement:					
None	10	10	10	9	5
Less than 10 years	3	8	10	6	6
10 years or more	52	20	20	25	4
Age 56 - 59	1	5	5	5	2
Service requirement:					
Less than 10 years	0	([4])	([4])	0	0
10 years or more	1	5	5	5	2
Age 60	7	5	6	5	2
Service requirement:					
None	([4])	1	1	1	([4])
Less than 10 years	([4])	4	([4])	0	0
10 years or more	6	([4])	4	3	1
Age 62	([4])	1	1	0	0
Service requirement:					
10 years	([4])	1	1	0	0
Sum of age plus service[5]	9	1	1	1	0
Equals less than 75	2	([4])	([4])	0	0
Equals 75 or more	7	1	1	1	0
Participants in plans without early retirement	2	10	9	6	44

[1] Early retirement is the point at which a worker could retire and immediately receive accrued benefits based on service and earnings, but benefits are reduced for each year prior to normal retirement age.

[2] If a plan had alternative age and service requirements, the earliest age and associated service were tabulated; if one alternative did not specify an age, that requirement was tabulated.

[3] All employees except teachers and police and firefighters.

[4] Less than 0.5 percent.

[5] In some plans, participants must also satisfy a minimum age or service requirement.

NOTE: Because of rounding, sums of individual items may not equal totals.

tor groups after 30 years of service. This reflects the fact that police and firefighters have a higher incidence of pension plan formulas with ceilings on years of credited service.

Using replacement rates, one can examine how benefits vary as earnings of retirees rise. Pension replacement rates declined as earnings increased in the private sector, but changed little in government. This pattern mirrors the greater prevalence in private industry of flat dollar amount formulas which provide an annuity that is constant over a range of earnings. Replacement rates for combined pension and Social Security benefits show declining percentage returns as earnings rise in both the public sector and in private industry. This is the result of the Social Security benefit formula, which is more favorable to employees at low earnings levels.

Employee contributions

Some of the disparity between benefits under private and public plans may be explained by the greater emphasis in government on employee contributions to meet the cost of benefits. Employee contributions for defined benefit pension plans were rare in private industry, but were required in most plans in the public sector. The following tabulation shows the percent of private industry and State and local government workers required to contribute to

defined benefit pension plans:

	Percent
Private industry, 1986:	
All workers	6
State and local government, 1987:	
All workers	78
Regular workers	76
Teachers	82
Police and firefighters	82

Even when contributions were required in private industry, they were considerably lower than those required in State and local governments. Private plans most often required employees to contribute 2 percent of earnings; government plans commonly required 6 percent and, in some cases, more. For instance, in plans covering police and firefighters, employee contribution rates of 8–12 percent of earnings were common. Some plans even required employees to join a plan and make contributions to it, in effect, making contributions a condition of employment.

Postretirement annuity increases

A fixed pension can rapidly lose most of its purchasing power during periods of even moderate inflation.[14] Postretirement annuity adjustments offer some protection. The adjustments fall into two categories: automatic cost-of-living adjustments (COLA's) and ad hoc increases.

A COLA can be based on changes in a price index, such as the Bureau of Labor Statistics Consumer Price Index (CPI), or a flat increase each year. The COLA tied to the CPI is usually subject to a maximum annual increase. For example, if the maximum COLA is 3 percent and the CPI increases 5 percent in a given year, the retiree's benefit would only increase 3 percent. Ad hoc increases are not formally built into the pension plan and are not tied to the CPI—they are discretionary on the part of the employer and are given periodically to help buffer the effects of inflation, particularly for retirees without COLA protection.

There are dramatic differences between private industry and the public sector in the incidence of postretirement

Table 3. Average replacement rates[1] for specified final earnings and years of service for defined benefit pension plans[2] in private industry and State and local governments
[In percent]

Coverage	Final earnings with 20 years[3]			Final earnings with 30 years[3]			Final earnings with 40 years[3]		
	$15,000	$25,000	$35,000	$15,000	$25,000	$35,000	$15,000	$25,000	$35,000
With Social Security coverage									
Private industry, 1986:									
Total workers with—									
Pensions only	21.6	18.9	19.1	31.5	27.6	27.4	39.9	34.4	33.7
Pensions and Social Security[4]	64.2	53.2	44.8	74.1	69.1	53.2	82.5	68.8	59.5
State and local governments, 1987:									
Total workers with—									
Pensions only	32.3	32.5	32.7	47.7	48.2	48.6	61.2	61.8	62.3
Pensions and Social Security[4]	75.2	67.8	59.3	90.7	83.5	75.3	104.1	97.0	88.9
Regular workers[5] with—									
Pensions only	32.0	32.3	32.5	47.5	48.2	48.6	61.1	62.0	62.3
Pensions and Social Security[4]	74.9	67.5	59.1	90.5	83.4	75.3	104.1	97.2	89.2
Teachers with—									
Pensions only	31.8	31.7	31.7	46.8	47.0	47.3	60.5	60.6	60.1
Pensions and Social Security[4]	74.7	67.0	58.3	89.8	82.2	73.9	103.5	95.9	87.6
Police and firefighters with—									
Pensions only	39.1	39.2	39.2	54.4	54.6	54.8	64.5	64.6	64.8
Pensions and Social Security	82.1	74.4	65.9	97.4	89.9	81.4	107.5	99.9	91.4
Without Social Security coverage									
State and local governments, 1987:									
Total workers	41.6	41.5	41.5	61.6	61.6	61.6	77.6	77.6	77.6
Regular workers[5]	42.1	42.0	42.0	62.6	62.5	62.5	78.7	78.7	78.8
Teachers	39.4	39.3	39.3	58.7	58.8	58.7	75.9	76.0	76.0
Police and firefighters	47.2	47.2	47.2	67.7	67.7	67.7	76.6	76.6	76.5

[1] Replacement rates are retirement annuity as a percent of earnings in the final year of work. The maximum pension payable to an employee, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. The benefit level was then expressed as a percent of earnings in the last year of employment. These calculations assume employees retired on January 1 of the survey year and final earnings are for the preceding year. Earnings histories, necessary for applying the pension formulas, were constructed for each final earnings level based on data provided by the Social Security Administration. For pension formulas that are integrated with Social Security and for computation of Social Security benefits, the worker is assumed to have retired at age 65 and paid into Social Security for 40 years. Computations exclude formulas based on career contributions.

[2] Supplemental pension plans are excluded.

[3] The years of service intervals represent total service with the employer. Time spent satisfying service requirements for plan participation was excluded from the calculation of replacement rates, unless the pension plan specified that such time was to be included in benefit computations.

[4] Excludes benefits for spouses and other dependents.

[5] All employees except teachers and police and firefighters.

increases: 38 percent of the participants in a pension plan in the private sector were in plans that had provided one or more increases in the 5 years preceding the survey, compared with 75 percent of plan participants in the public sector. The following tabulation shows the percent of private industry and State and local government workers in pension plans providing postretirement increases:

	With increase				
	Total	*Automatic only*	*Ad hoc only*	*Both*	*Without increase*
Private industry, 1986:					
Total workers ...	38	3	35	*	62
State and local government, 1987:					
Total workers ...	75	42	24	9	25
Regular workers	76	41	24	11	24
Teachers.......	79	47	26	6	21
Police and firefighters.......	69	46	19	4	31

*Less than 0.5 percent.

The lower proportion of participants with postretirement increases in the private sector reflects the absence of automatic increases, such as COLA provisions. Only 3 percent of all plan participants in private industry had such an arrangement, while 51 percent of State and local government workers were in plans with automatic increases. However, ad hoc increases covered about 1 of 3 workers in both sectors.

Ad hoc pension increases are either a flat increase or an increase varying by length of service or years of retirement. Flat increases were most common: they applied to three-quarters of all public sector workers in plans that had granted an ad hoc pension increase in the 5 years prior to the 1987 survey. Most often, the increase was a percent of the present benefit. Increases based on years of service or retirement were typically a percentage increase times years of service or retirement. In private industry, ad hoc increases were more evenly distributed among the three formulas.

How do the plans compare?

Public pension plans provide higher benefit levels, but they require a greater incidence and amount of employee contributions and this must be taken into account. Conversely, even though private pension plans alone yield lower benefits, private defined benefit plans are commonly supplemented by one or more defined contribution plans. Depending on who makes contributions and in what proportion, a combination of these two types of plans could yield a total retirement benefit comparable to that provided by State and local governments.

The length of retirement is another factor that most often affects the value of a pension. A State and local government worker retiring 10 years earlier than a private worker, on average, would receive a substantially greater benefit over his or her lifetime.

Moreover, the public sector has a higher incidence of COLA's. Such adjustments can make a considerable difference in the ultimate value of a pension over time.

FOOTNOTES

[1]These surveys, and their scope, are described in William Wiatrowski, "Comparing employee benefits in the public and private sectors," this issue, pp. 3-8.

[2]Not all defined contribution plans are retirement plans, as some have less restrictive withdrawal requirements. As defined in the Employee Benefits Survey, retirement plans do not allow for withdrawal of employer contributions until retirement age, death, disability, separation from service, age $59\frac{1}{2}$, or hardship. (Plans with more liberal withdrawal requirements are labeled capital accumulation plans.)

[3]The gap between the private and public sector widens when capital accumulation plans are counted: coverage of all defined contribution plans was 60 percent in the private sector and 9 percent among State and local government employees.

[4]Free-standing plans were not considered in the analysis of retirement plans because none of the costs were borne by the employers. The Employee Benefits Survey focuses on plans financed entirely or partly by employers.

[5]These averages were calculated for plans in which the percentages did not vary by age, service, earnings, or earnings and service. Of all participants in plans with terminal earnings formulas, 57 percent of private participants and 72 percent of public participants were in plans specifying uniform percentages. (By public sector occupational group, the percentages were: regular workers, 71 percent; teachers, 78 percent; and police and firefighters, 65 percent.)

[6]The 3- or 5-year periods used in terminal earnings formulas are not necessarily the final years of employment. For example, most plans based on 5 years define earnings as the average of the high 5 or high consecutive 5 years during the entire career or the last 10 years of employment.

[7]The Social Security Amendments of 1983 disallowed the withdrawal of State and local governments from the Social Security system as of April 30, 1983. In addition, the Amendments allowed for the reentry of previously terminated State and local government groups.

[8]Excluded are railroad workers covered by the Railroad Retirement Act and some employees of nonprofit organizations.

[9]Although integration formulas may take many forms, they can be separated into three types: offset, pure excess, and step-rate excess. An offset formula reduces the calculated pension benefit by a portion of the primary Social Security payment, such as 1.67 percent times years of service, up to a maximum reduction of 50 percent. A pure excess formula bases benefits on earnings in excess of a specified level, often the Social Security taxable wage base. The Tax Reform Act of 1986, however, has disallowed this type of integration formula as of January 1, 1988. A step-rate excess formula applies a lower benefit accrual rate to earnings subject to Social Security taxes or below a specific dollar breakpoint. For example, a terminal earnings benefit formula may be 1 percent of final average earnings through the Social Security taxable earnings base and 1.5 percent for earnings above that amount. Social Security integration is discussed by Donald Bell and Diane Hill in "How

Social Security payments affect private pensions," *Monthly Labor Review*, May 1984, pp. 15–20.

[10]For a fuller discussion of replacement rates, see Donald G. Schmitt, "Today's pension plans: how much do they pay?" *Monthly Labor Review*, December 1985, pp. 26–33.

[11]An exception is a floor-offset plan, where payments under a defined benefit plan are reduced by the amount of payments employees receive from a defined contribution plan. Only 3 percent of private sector employees participated in floor-offset plans in 1986.

[12]Pension plans must provide an annuity arrangement which pays a surviving spouse regular income equal to at least half of the pension paid to the retiree. The plan may reduce the pensions paid to the retiree to reflect the additional cost of providing retirement benefits over two lives. This reduced pension, called the "joint-and-survivor annuity," is the normal form of pension for a married employee. Replacement rates shown in this article, as yielded by the plan's benefit formula, represent the payments made to an unmarried retiree or a retiree who has waived the joint-and-survivor annuity. For discussion of survivor benefits, see Donald Bell and Avy Graham, "Surviving spouse's benefits in private pension plans," *Monthly Labor Review*, April 1984, pp. 23–31.

[13]See *Coming of Age: Toward a National Retirement Income Policy* (President's Commission on Pension Policy, Feb. 26, 1981).

[14]The value of postretirement pension increases in private plans is discussed by Donald G. Schmitt in "Postretirement increases under private pension plans," *Monthly Labor Review*, September 1984, pp. 3–8.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC 20212.