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United States General Accounting Office $\mathit{128806}$

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Report to the Chairman, Subcommittee on Civil Service, Post Office, and General Services, Committee on Governmental Affairs, United States Senate

January 1986

RETIREMENT BENEFITS

Modification of Civil Service Retirement Benefits for Part-Time Work

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GAO

United States
General Accounting Office
Washington, D.C. 20548

Program Evaluation and
Methodology Division

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January 9, 1986

The Honorable Ted Stevens
Chairman, Subcommittee on Civil Service,
    Post Office, and General Services
Committee on Governmental Affairs
United States Senate

Dear Mr. Chairman:

In this report, we present a matter for consideration by the Congress in regard to the rules for calculating civil service retirement benefits for federal employees. We developed the possible modification, after reviewing the existing formula, as part of a series of studies of retirement issues.

As we discussed with your office, the current retirement rules permit disproportionately generous benefits for career part-time employees who switch to a full-time schedule in the last few years of their careers. The rules may also act as financial disincentives to employees who want to reduce their work hours near the end of service in order to make a gradual transition into retirement. The modification is a single formula intended to remedy these two situations by changing the current rules to bring retirement benefits in line with work actually performed during a career. A similar provision has been included in S. 1527, proposing the Civil Service Pension Reform Act, which you and Senator Roth introduced on July 30, 1985, to provide a pension plan for federal employees hired after 1983. The Congress may want to consider the need to make a similar modification to the law covering employees who were hired in 1983 and earlier.

In this report, we first describe the effects of the current rules and of the modification on retirement benefits for federal employees covered under the civil service retirement system before January 1, 1984. These analyses demonstrate that under the current formula, the retirement benefits employees receive are not always in proportion to the service they give. We show how the modification would remedy this inequity. We then analyze the effect of the similar provision in S. 1527 by comparing benefits as they would be calculated with and without this modification. The Senate passed S. 1527 on November 7, 1985, as an amendment to an unrelated bill, H.R. 2672. On December 2, 1985, action by a conference committee was still pending.

To estimate the financial effect of the modification, we used simulations rather than data about actual employment patterns.[1] These simulations suggest that if the modification were to lead more employees to reduce their work schedules before retirement, its effect on costs would vary, depending on whether the employees used part-time work to reduce or to extend their careers. If employees maintain what we assume to be their current work and retirement patterns, our best estimate is that the modification would result in a saving to the government. However, since our cost analysis is a simulation, we believe that any decision to adopt the modification should seek to remedy the inequities inherent in the law rather than to achieve a financial effect that may or may not occur.

The Current Formula: Pre-1984 Employees

At present, retirement benefits for federal employees covered by the civil service retirement system (employees hired before January 1, 1984) are based on the highest average salary earned during any 3 consecutive years of service, the "high-3." The annuity is computed by using the following formula:

1. Multiply 1-1/2 percent of the "high-3" average pay by 5 years of service.

2. Add 1-3/4 percent of the "high-3" average pay multiplied by the years of service between 5 and 10.

3. Add 2 percent of the "high-3" average pay multiplied by all service over 10 years.

Table I.1 in appendix I illustrates retirement benefits when this formula is applied to 18 hypothetical employees representing a variety of specific work patterns. In each case, we assumed that the employee started work at age 25 at a yearly salary of $10,000 based on full-time employment. (The salary was reduced proportionately for any year in which an employee worked part-time.) To account for comparability increases, step increases, and promotions, we increased the salary rate 7 percent annually for the first 10 years, 6 percent for the next 10 years, and 5 percent for each remaining year until retirement. We increased benefits annually after retirement by a cost-of-living adjustment of 5 percent.

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[1]We did not obtain actual employment data, because the effort was beyond the scope of our work and unnecessary in demonstrating the condition we identified under the current formula.

The examples do not consider variations in benefits from sick leave, survivor benefits, or credit for military service. All employees are assumed to have entered the system before January 1, 1984. Appendix II explains why we chose these particular assumptions.

The "present law" columns in table I.1 illustrate two major effects of the current formula. The first major effect is that in some circumstances, the formula provides the same initial benefits to two employees whose total hours of service differ. Cases in point are employees 9 and 12. Although both have 35 years of credited service according to the current formula, employee 9 worked full-time throughout this period while employee 12 worked half-time for all but the last 3 years of service. Since a year of full-time service equals 2,080 hours, employee 9 has 72,800 hours of service but employee 12 has only 39,520 hours. Even so, both employees received an initial retirement benefit of $43,221. Another example is seen by comparing employee 1, who has 30 full-time years, or 62,400 hours, of service, to employee 4, who also has 30 years but only 34,320 hours of service. The initial benefit for each employee is $28,753.

These situations occur because of the way service is credited in the benefit formula. When an employee serves part-time in a prearranged, regularly scheduled tour of duty of 16 hours a week or more, full credit is allowed for all time elapsing between the date of appointment and the date of separation. Work can be scheduled for a portion of each day or for only a few days each week. For example, the same "year of service credit" would be earned in a 12-month period by an employee who worked half-time, one who worked three-quarter time, and one who worked full-time. (However, part-time employees without a prearranged, regularly scheduled tour of duty are generally excluded from the civil service retirement system by regulation or, if they are included, receive retirement credit only for days actually worked.)

When cost-of-living increases are added to the initial benefit, an employee can receive an even higher retirement benefit than another who has more hours of service. For example, employee 5 (in table I.1), who worked full-time for 32 years, received an initial benefit of $33,954, which will increase to $39,306 at the beginning of year 36, after 3 years of 5-percent cost-of-living adjustments. In comparison, employee 12, who worked half-time for 32 years and full-time for 3 years, will receive a benefit of $43,221 in the 36th year. During this 36-year period, employee 12 will have earned an initial $43,221 benefit with only 39,520 hours of service, compared to the 66,560 hours of

employee 5, whose retirement annuity is $3,915 less ($43,221 minus $39,306).

The second major effect of the formula is its disincentive to employees who want to work fewer hours per week during the last few years of their careers. Employee 15 worked full-time for 30 years and then reduced the number of hours worked per week by 4 hours in the 31st year, 4 more hours in the 32nd year, and 4 additional hours each successive year until the 35th year, in which the employee worked 20 hours per week. This employee's initial benefit of $34,314, received in year 36, is based on the 3 years of salary earned during the 29th through 31st years of employment and, therefore, does not reflect the general 5-percent annual salary increases for the 32nd through 35th years. If this same employee had retired at the end of year 30, the $36,697 benefit for year 36 would have reflected 5 years of annual cost-of-living increases (years 31-35; see employee 1), a benefit that is almost 7 percent higher than the benefit that followed part-time work during the last 5 of 35 years of employment. In effect, the cost-of-living increases the employee is missing have a greater effect on the retirement benefit than the credits the employee got by working 5 years more. The numbers in this comparison are influenced by the economic assumptions we have chosen (salary scale and cost-of-living increases), but the same relative results would occur under other reasonable sets of assumptions.

The Modification

To address the two problems described above, we considered the modification of the benefit formula that follows:

1. Using the current formula, calculate the retirement benefit as though the employee had worked full-time during all years of service.

2. Then calculate the percentage of full-time hours worked during each year of service and find the average percentage for all years.

3. Calculate the basic annuity by multiplying the full-time benefit by this average percentage.

A provision with a similar formula has been included in S. 1527 (sec. 8413(c)). We believe that a modification along these lines could also be applied to the formula for pre-1984 entrants. Table I.2 in appendix I provides an example of how the modified formula would work.

The modification is consistent with a recommendation we made in 1979, after studying compensation for part-time employees.[2] It is also very similar to a method currently specified by the Veterans Administration (VA) Health Care Amendments of 1980, Public Law 96-330, for computing retirement benefits for civil service employees in the VA Department of Medicine and Surgery. This related work, as well as other approaches we considered when planning the current analysis, is described in appendix II.

The Effects of the Modification on Pre-1984 Employees

The modification would have two major effects. First, compared to present law, it would decrease benefits for workers with a period of part-time service followed by a period of full-time service. This happens because benefits for these workers would no longer be the same as benefits for employees who always work full-time; instead, the benefits would be prorated. The percentage of the decrease would be equal to 100 minus the average percentage of time worked throughout the career. This effect is illustrated by the careers of employees 4, 7, 11, and 12 in table I.1. Employee 4, for example, worked half-time for 27 years and followed this with a 3-year period of full-time work, therefore averaging 55 percent of full-time during the 30-year career. This employee's annuity would be 45 percent less (100 minus 55) than under the current formula. Employee 7 followed 16 years of half-time employment with 16 years of full-time employment, therefore working 75 percent of the time during the 32-year career. This employee's annuity would be 25 percent less than under the current formula and would equal the benefit of an employee working 16 years full-time and then 16 years half-time (employee 8), if all other facets of their work histories were the same.

The second effect is the converse of the first: the modification would yield higher benefits than under present law for workers with a period of full-time service followed by a period of part-time service. This effect is exemplified with employees 13-15 and 18, each representing a pattern of transition into retirement in which a relatively long period of full-time employment is followed by a much shorter period of part-time employment. The modification would also increase benefits for other full-time followed by part-time work patterns, as illustrated by employee 8. This effect occurs because the employees' "high-3" years

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[2]Part-time and Other Federal Employment Compensation and Personnel Management Reforms Needed, FPCD-78-19 (Washington, D.C.: June 5, 1979).

would fall at the end of their careers rather than earlier, as they do now.[3]

The Estimated Overall Financial Effects of the Modification

As we have just shown, the modification would decrease benefits for some employees (part-time employees who switch to full-time employment) and increase benefits for others (full-time employees who switch to part-time). But what would its <u>overall</u> financial effect be on the civil service retirement system? To answer this question with certainty, we would need information about current work patterns and we would also need to know how these work patterns might change in the future. However, the Office of Personnel Management (OPM) does not have the necessary data on employee work patterns, such as the aggregate numbers of full-time employees who switch to part-time and vice versa.

Without this information, we tried to estimate the financial effect of the modification by means of two simulations. In the first, we considered the cost consequences if what we assume to be current work patterns were to remain the same. In the second, we considered what would happen if "phased retirement," or a reduction in service in the years before retirement, were to become more common.

Current Patterns

Considering the incentives provided by the current formula, it may not be uncommon for part-time employees to switch to full-time employment in the last 3 years before retirement. To the extent that they do, our modification would result in a saving to the system. (If none do, there would, of course, be no savings.) We doubt that, conversely, many full-time employees switch to part-time employment before they retire. To the extent that they do, the modification would result in increased costs to the system. Because of these incentives and disincentives in the current formula, we believe it likely that the net effect of the modification, under what we assume to be current work patterns, would be a saving for the system (although we did not make an analysis).

Phased Retirement

We believe that the number of employees who phase into their retirement is currently small but that the financial incentives in the proposed modification might make the practice more common. Employees might phase into their retirement by switching to part-time employment

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[3]The modification would not change benefits for employees who work full-time or the same number of part-time hours throughout their careers (employees 1-3, 5-6, 9, 10, 16, and 17).

toward the end of a career whose length they have planned or, conversely, they might use part-time work to extend their careers. We estimated the financial effect of these patterns.

We did this analysis by comparing retirement costs for four hypothetical groups of 10 employees each. We thus tried to cover the major types of phased retirement patterns that we thought might occur in response to the modification. The "nonphasers," a comparison group, were intended to simulate retirement costs for employees who do not phase their retirement at all. As shown in table I.3, each of the 10 employees in this first group works full-time up to age 55. Then, they retire, one each year through age 59, the last 5 retiring at age 60.

The second group, the "phasers," was used to simulate retirement costs for employees who phase their retirement but as a group give the same number of years of service as employees who do not phase their retirement. The phasers work part-time between ages 55 and 60. All 10 reduce their schedules to 90 percent of full-time at age 55, 80 percent at age 56, 70 percent at age 57, 60 percent at age 58, and 50 percent at age 59. All then retire at age 60. Note that the phasers and nonphasers work exactly the same number of staff years in any given year; the members of both groups work a total of 335 full-time-equivalent years during their careers.

The third group, the "early phasers," was used to simulate costs for employees who use phased retirement to retire early. Employees in this group begin reducing their hours at age 50, or during the 26th year of service. All retire by age 55, during the 30th year of service. In the aggregate, this group gives 50 fewer years of service than the nonphasers. People in this group would meet the age and service requirements for normal retirement at age 55 because a part-time year would count fully toward retirement eligibility under the proposed modification, as it does under current law.

The fourth group, the "late phasers," was used to simulate retirement costs for employees who use phased retirement to extend their careers. Late phasers begin the pattern of reduced hours at age 60, or after 35 years of service, and retire completely at age 65, during the 40th year. As an aggregate, this group thus gives 50 more full-time-equivalent years of service than the nonphasers.

Taking the modification into account, we calculated the "normal cost percentage" for each of these four groups. This number shows the percentage of each salary payment that would have to be contributed to an interest-earning trust fund during the working years to pay benefits for the life of each employee after retirement. For example, a normal cost percentage of 22 would mean that for each dollar of salary paid, 22 cents would be contributed to the interest-earning trust each year until the employee retires. Our calculation is simplified in that it does not account for terminations, disabilities before retirement, deaths, or dependents' benefits after an employee's retirement or death. As in the previous analyses, we assumed that employees started working at age 25 with a full-time salary of $10,000, which we increased 7 percent annually for the first 10 years, 6 percent the next 10 years, and then 5 percent until retirement. Appendix II gives more details about our method.

The results of our analyses are shown in table I.4. Three major findings are important:

1. Retirement costs to the government will be <u>reduced</u> for employees who phase their retirement without, in the aggregate, either increasing or decreasing their years of service.

2. Retirement costs to the government will be <u>increased</u> for employees who use phased retirement to reduce their total years of service.

3. Retirement costs to the government will be <u>substantially reduced</u> for employees who use the proposed modification to increase their total years of service.

The first finding is seen by comparing the figures for phasers and nonphasers in table I.4. For both men and women, the reduction in the normal cost percentage is equal to about 2 cents for every dollar of salary paid. The figures for men go from 22 to about 20 percent; for women, the reduction is from 27 to about 25 percent. This happens because, even though the phased-retirement group eventually gets a larger benefit than the others, its members do not receive their benefits until age 60, whereas half of the nonphasers receive benefits before this age (see table I.3). The delay in starting benefits reduces the amount that must be contributed each year to pay for them.

Another way of evaluating these estimated savings is to ask, How many years would the retirement of full-time employees have to be delayed to

achieve savings equivalent to the savings that we estimate would be gained by phased retirement? As shown in table I.5, the normal cost for men and women who do not phase their retirement is reduced, on the average, by about 1 percent (or about 1 cent for each salary dollar) for each year that retirement age is increased. Therefore, the reduction in cost for phased retirement is equivalent to increasing the retirement age by about 1-3/4 years for both men and women. (The figures for men are 22.0 percent minus 20.3 percent divided by 1 percent, or 1.7. For women, the figures are 27.0 percent minus 25.2 percent divided by 1 percent, or 1.8.)

The second finding, an increase in retirement costs for employees who use phased retirement to cut their years of service, is seen by comparing the figures for the early and nonphaser groups. For both men and women, the increase in costs is equivalent to about 3 percent of each salary dollar.

The third finding, a substantial decrease in retirement costs for employees who use phased retirement to increase their years of service, is seen by comparing the figures for the nonphaser and late-phaser groups. The difference in normal cost percentages for these groups is almost 7 percent of the salary dollar for both men and women.

Our estimates apply not to the total system but only to groups of employees who phase their retirement. However, we do not know how many federal employees would follow the phased-retirement patterns illustrated in our analysis or any other phased-retirement patterns such as those illustrated in table I.1. Therefore, we cannot estimate the total effect that an increase in phased retirement would have on the civil service retirement system.

The Effects of the Provision in S. 1527

The Civil Service Pension Reform Act as proposed in S. 1527 would provide a pension for federal employees hired on or after January 1, 1984. The bill provides for a two-part benefit in addition to the benefit these employees will receive from Social Security. One part would be derived from funds in a thrift plan to which an employee and the employing agency would contribute. The second part would be a defined-benefit plan funded not by employees' contributions but entirely by the employing agencies. The formula for computing the defined benefit would be years of service times 1 percent times the average continuous 5-year-high salary. For an employee with at least 30 years of service, the benefit would be reduced by 1/6 of 1 percent for each month the employee is

younger than 62 on the date of separation. (For employees with less service, the reduction would be 5/12 of 1 percent.)

The bill provides for prorating benefits for part-time employees, basing them on years of service and using the annual full-time salary rate as the basic rate of pay in the formula. This provision is, therefore, essentially the same as the modification we have described. We illustrate its effect by comparing benefits as they would be calculated with the defined-benefit formula in S. 1527 with and without the modification. Displayed in table I.6, the results are similar to those we described earlier. Benefits would increase for employees with a period of full-time employment followed by a period of part-time employment (employees 8, 13-15, and 18). Conversely, benefits would decrease for employees with a period of part-time employment followed by full-time employment (employees 4, 7, 11, and 12). Benefits for employees who work either full-time or the same part-time percentage throughout their careers would not be affected (employees 1-3, 5, 6, 9, 10, 16, and 17).

Table I.7 shows the financial effect of the provision by allowing comparisons of the normal cost percentages for the four hypothetical groups of employees. The results are similar to those reported in table I.4 for employees hired before 1984. An increase in phased retirement would result in savings for employees who time the switch to part-time work so that, as a group, their years of service either remain the same (phasers) or increase (late phasers). Costs would go up for employees who reduce their years of service by changing to a part-time schedule relatively early (early phasers).

A Matter for Consideration: Implementing the Modification

We endorse the provisions in S. 1527 to implement the modification for federal employees hired on or after January 1, 1984. Since this proposed legislation does not cover the large majority of federal employees, the Congress may want to consider the need to make a similar modification to the law covering employees who were hired before 1984 (5 U.S.C. 8331). There are many ways that such a modification could be implemented for more senior employees, ranging from immediate applicability to all employees to various phase-in provisions. In this regard, on November 14, 1985, the Senate passed H.R. 3128, which had been amended by the Senate to contain a similar modification with a phase-in provision.
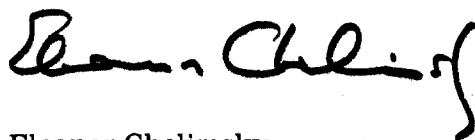
Agency Comments and Our Response

OPM commented on a draft of this report. It agreed with us that changes should be made in the method used to calculate the retirement benefit for employees who have worked part-time during a portion of their careers. OPM reports that it has developed and is seeking the administration's clearance of a legislative proposal similar to our proposed modification. The letter from OPM is printed in appendix III.

Report Distribution

We are sending copies of this report to interested congressional committees, to the Office of Personnel Management, and to members of the federal employee union and pension communities. Copies will be made available to others who request them.

Sincerely yours,

Eleanor Chelimsky
Director

Illustrations and Analyses

Table I.1: Annual Retirement Benefits for Employees Hired Before 1984 Under Present Law and With the Modification

| | | | Benefit for 30-year employee | | | | |
| | | | Present law | | Modification | | |
Employee	Schedule	Hours of service	Initial	After 5 years[a]	Initial	After 5 years[a]	Percent change
1	Full-time	62,400	$28,753	$36,697	$28,753	$36,697	0
2	Half-time	31,200	14,376	18,348	14,376	18,348	0
3	80% of full-time	49,920	23,002	29,357	23,002	29,357	0
4	Half-time 27 years, full-time 3	34,320	28,753	36,697	15,814	20,183	−45

| | | | Benefit for 32-year employee | | | | |
| | | | Present law | | Modification | | |
			Initial	After 3 years[b]	Initial	After 3 years[b]	
5	Full-time	66,560	$33,954	$39,306	$33,954	$39,306	0
6	Half-time	33,280	16,977	19,653	16,977	19,653	0
7	Half-time 16 years, full-time 16	49,920	33,954	39,306	25,465	29,479	−25
8	Full-time 16 years, half-time 16	49,920	16,977	19,653	25,465	29,479	+50

| | | | Benefit for 35-year employee | | |
			Present law	Modification	
9	Full-time	72,800	$43,221	$43,221	0
10	Half-time	36,400	21,610	21,610	0
11	Full-time 10 years, half-time 10, full-time 15	62,400	43,221	37,046	−14
12	Half-time 32 years, full-time 3	39,520	43,221	23,463	−46
13	Full-time 32 years, half-time 3	69,680	37,336	41,369	+11
14	Full-time 30 years, half-time 5	67,600	33,864	40,134	+19
15	Full-time 30 years, 1 year each of 90%, 80%, 70%, 60%, 50%	69,680	34,314	41,369	+21

| | | | Benefit for 40-year employee | | |
			Present law	Modification	
16	Full-time	83,200	$63,488	$63,488	0
17	Half-time	41,600	31,744	31,744	0
18	Full-time 30 years, half-time 10	72,800	38,976	55,552	+43

[a]After receiving 5 annual 5-percent cost-of-living adjustments.

[b]After receiving 3 annual 5-percent cost-of-living adjustments.

Table I.2: Calculating the Initial Retirement Benefit for a Hypothetical Employee Under Present Law and With the Modification[a]

Present law	Modification
1. Calculate annuity factor for 30 years creditable service: $\quad$1.50% x 5 = 7.50% $\quad$1.75% x 5 = 8.75 $\quad$2.00% x 20 = 40.00 **Annuity factor = 56.25%**	1. Same as present law
2. Multiply average pay for "high-3" years by annuity factor to obtain initial retirement benefit: $51,116 x 56.25% = $28,753	2. Same as present law
	3. Calculate average percentage of full-time hours worked during all years of service: 27 x 0.50 (half-time) = 13.50% 3 x 1.00 (full-time) = 3.00 $\qquad\qquad\qquad\qquad\qquad$**16.50%** 16.50/30 = 0.55 = 55%
	4. Multiply annuity from step 2 by this percentage from step 3 to obtain initial retirement benefit: $28,753 x 55% = $15,814

[a]Employee 4 in table I.1, a 30-year employee hired in 1980 who works half-time 27 years and full-time 3 years, retiring in 2010 with "high-3" average pay of $51,116.

Table I.3: Retirement Patterns for Four Hypothetical Groups of Employees

Group	Age	Year of service	Number working	Number retiring	Full-time–equivalent years of service	Total full-time equivalents for all years
Nonphasers	55	30	9	1	9[a]	**335**
	56	31	8	1	8	
	57	32	7	1	7	
	58	33	6	1	6	
	59	34	5	1	5	
	60	35	0	5	0	
Phasers	55	30	10	0	9[b]	**335**
	56	31	10	0	8	
	57	32	10	0	7	
	58	33	10	0	6	
	59	34	10	0	5	
	60	35	0	10	0	
Early phasers	50	25	10	0	9[b]	**285**
	51	26	10	0	8	
	52	27	10	0	7	
	53	28	10	0	6	
	54	29	10	0	5	
	55	30	0	10	0	
	56-60	31-35	0	0	0	
Late phasers	55-59	30-34	10	0	10	**385**
	60	35	10	0	9[b]	
	61	36	10	0	8	
	62	37	10	0	7	
	63	38	10	0	6	
	64	39	10	0	5	
	65	40	0	10	0	

[a]Represents 9 employees, each working full-time.

[b]Represents 10 employees, each working 90 percent of full-time.

Table I.4: Normal Cost Percentages for Four Hypothetical Groups of Employees by Sex[a]

Group	Men	Women
Nonphasers	22.0%	27.0%
Phasers	20.3	25.2
Early phasers	25.3	30.3
Late phasers	15.4	20.2

[a]Normal cost percentages show the percentage of each salary payment that would have to be contributed to an interest-earning fund during work years to pay benefits for the life of each employee after retirement; the proposed modification was taken into account in their computation.

Table I.5: Normal Cost Percentages for Employees Retiring With 30-35 Years of Service[a]

Year of service	Men	Women
30	25.7%	30.7%
31	24.7	29.7
32	23.6	28.6
33	22.6	27.5
34	21.5	26.5
35	20.5	25.5
Average decrease per year	**1.0%**	**1.0%**

[a]Normal cost percentages are for full-time employees hired before 1984, who are not affected by the modification, and show the percentage of each salary payment that would have to be contributed to an interest-earning fund during work years to pay benefits for the life of each employee after retirement.

Table I.6: Annual Retirement Benefits for Employees Hired on or After January 1, 1984, Under S. 1527 With and Without Modification

| | | | Benefit for 30-year employee | | | | |
| | | | Without | | With | | |
Employee	Schedule	Hours of service	Initial[a]	After 5 years[b]	Initial[a]	After 5 years[b]	Percent change
1	Full-time	62,400	$12,579	$16,055	$12,579	$16,055	0
2	Half-time	31,200	6,290	8,027	6,290	8,027	0
3	80% of full-time	49,920	10,064	12,844	10,064	12,844	0
4	Half-time 27 years, full-time 3	34,320	10,246	13,077	6,919	8,830	−32

| | | | Benefit for 32-year employee | | | | |
| | | | Without | | With | | |
			Initial	After 3 years[c]	Initial	After 3 years[c]	
5	Full-time	66,560	$15,481	$17,923	$15,481	$17,923	0
6	Half-time	33,280	7,741	8,960	7,741	8,960	0
7	Half-time 16 years, full-time 16	49,920	15,481	17,923	11,611	13,442	−25
8	Full-time 16 years, half-time 16	49,920	7,741	8,961	11,611	13,442	+50

| | | | Benefit for 35-Year employee | | |
			Without	With	
9	Full-time	72,800	$20,910	$20,910	0
10	Half-time	36,400	10,455	10,455	0
11	Full-time 10 years, half-time 10, full-time 15	62,400	20,910	17,922	−14
12	Half-time 32 years, full-time 3	39,520	17,030	11,351	−33
13	Full-time 32 years, half-time 3	69,680	18,062	20,014	+11
14	Full-time 30 years, half-time 5	67,600	16,382	19,416	+19
15	Full-time 30 years, 1 year each of 90%, 80%, 70%, 60%, 50%	69,680	16,889	20,013	+18

| | | | Benefit for 40-year employee | | |
			Without	With	
16	Full-time	83,200	$31,770	$31,770	0
17	Half-time	41,600	15,885	15,885	0
18	Full-time 30 years, half-time 10	72,800	19,504	27,798	+43

[a]Includes reduction for early retirement.

[b]After receiving 5 annual 5-percent cost-of-living adjustments.

[c]After receiving 3 annual 5-percent cost-of-living adjustments.

Table I.7: Normal Cost Percentages Under S. 1527 for Four Hypothetical Groups of Employees by Sex[a]

Group	Men	Women
Nonphasers	10.3%	12.7%
Phasers	9.8	12.2
Early phasers	11.1	13.2
Late phasers	7.7	10.1

[a]Normal cost percentages show the percentage of each salary payment that would have to be contributed to an interest-earning fund during work years to pay benefits for the life of each employee after retirement; the proposed modification was taken into account (as well as a reduction for early retirement) in their computation.

Methodology

This appendix describes how we developed the modification to the current civil service retirement system benefit formula that we present in this report. It also describes the decisions we made in constructing examples of the effects of the modification on individual employees and the methods we used to estimate the modification's financial effect on the civil service retirement system for various groups of employees.

Developing the Modification

Criteria We Tried to Meet

We developed the modification with two related criteria in mind. First, any revision we would suggest had to both remedy the two major problems that we discuss in the report and make as little change as possible in the rest of the retirement system. We wanted to change the benefits for employees who shift their work schedules yet maintain the current structure for employees who work full-time or the same part-time schedule throughout their careers.

Second, we wanted change resulting from the modification to be equitable. Therefore, we tried to make benefits commensurate with service. We thought that benefits should not reflect differences in the career patterns of employees who give the same total amount of service. Further, we thought a benefit should account for all service during an employee's career.

Alternatives We Considered

We developed three proposals with these criteria and our general knowledge of similar practices in the public and private sectors (discussed in the next section). In the first proposal, we counted part-time years as partial years in the benefit formula and annualized salaries for any part-time years used to calculate an employee's "high-3." Under this proposal, an employee who worked half-time for 30 years at an annualized rate of $50,000 (for an actual salary of $25,000 per year) would receive credit, in the benefit formula, for 15 years of service. This employee's "high-3" average salary would be computed at the annualized rate.

This proposal would address the two problems we were trying to solve. It would reduce benefits for part-time employees who switch to full-time employment at the end of their careers, and it would generally increase

benefits for employees who work part-time before retirement. However, it would also penalize career part-time employees. In the example immediately above, the initial benefit for the 30-year half-time employee would be only $13,125 under this proposal, compared to a benefit of $14,062 under current law and under the modification expressed in this report.

In the second proposal, we computed benefits under the present formula as though the employee always worked full-time, but then we multiplied the result by the lowest percentage of time worked in any year throughout the employee's career. The final benefit would be the higher of two amounts, the result of this calculation or the result of the method in the proposal described above.

The second method would also accomplish our two major goals vis-a-vis employees who change work patterns during their careers, and it would have the added advantage of not changing benefits for employees who work the same part-time percentage during all years of service. However, basing the retirement benefit on the lowest percentage worked during any year could reduce benefits for part-time employees who work different lengths of time each year. Further, this formula does not seem equitable in that the benefit would not be commensurate with the average service given during an entire career.

Therefore, we adopted a third proposal, the modification described in this report, in which we multiplied the benefit calculated under the assumption of full-time work by the average percentage of time worked throughout a career. This modification involves annualizing salary and prorating years of service, basing them on the actual length of time an employee works during an entire career. We believe that this proposal meets all the criteria discussed above.

Comparing the Modification With Other Proposals and Practices

The issue of retirement benefits for part-time employees in general and for employees who work part-time during only a portion of their careers has received attention elsewhere. To find out about related proposals and practices that might pertain to federal or private sector employees, we interviewed pension experts at GAO, VA staff, and actuaries who work as pension consultants to private companies. We found several proposals and practices that merit summarizing.

Previous GAO Work

In 1979, we raised the issue of inequitable retirement compensation for part-time employees who convert to full-time employment a few years before retirement.[1] We noted that the Civil Service Commission recognized the potential seriousness of this problem, although data about its extent and its effect were not available; data are still not available.

In that report, we noted further that the 94th Congress considered legislation that would have required, for computing retirement benefits, that part-time workers employed 16 to 30 hours per week work 173 hours (about 1 month of full-time work) to receive credit for 1 month's service. We stated in the report that the Civil Service Commission opposed the bill because it would have reduced the annuities of some employees by more than 50 percent and because it would not have applied to part-time employees working less than 16 or more than 30 hours per week.

We concluded in the report that "employees' civil service retirement benefits could be made more commensurate with their preretirement earnings and actual service."[2] We recommended that the director of the Office of Personnel Management formulate and propose to the Congress legislation to prorate retirement benefits, as well as other benefits, for part-time workers on the basis of the time these employees work.

Veterans Administration Practices

The Veterans Administration Health Care Amendments of 1980 (Public Law 96-330), as amended in 1981 (Public Law 97-72, 38 U.S.C. 4109), established a method of computing retirement benefits for part-time employees that is essentially the same as the modification we described in this report, except that it applies only to certain VA employees and prorates only their service with a specific part of that agency. These are the employees who work in the VA Department of Medicine and Surgery, having been appointed under title 38 of the United States Code. They are covered by the law only if they retire after December 31, 1981, and only if they work part-time at any time during their careers with the Department of Medicine and Surgery.

Retirement benefits for these employees are computed by first determining the benefits they would receive if they worked full-time. That is, credit for a full year of service is given for each partial or full year of work, as under the regular civil service benefit formula, and the annuity

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[1]Part-time and Other Federal Employment Compensation and Personnel Management Reforms Needed, FPCD-78-19 (Washington, D.C.: June 5, 1979).

[2]Part-time and Other Federal Employment Compensation, p. 22.

factor is determined under this formula (5 U.S.C. 8301). Annualized salary rates are used for an employee's high-3 average pay.

Computed in this way, a benefit is then multiplied by a fraction equal to the ratio that the employee's full-time-equivalent service bears to his or her total creditable service. Any period of less than full-time service at the VA Department of Medicine and Surgery is prorated. For example, 2 years of half-time employment equal 1 year of full-time-equivalent service. Part-time service at federal offices other than the VA Department of Medicine and Surgery is not prorated. For the purposes of the computation, full-time service is defined as 80 hours of work in each biweekly pay period. Table II.1 illustrates the procedure.

Table II.1: Calculating the Initial Retirement Benefit for a Hypothetical Veterans Administration Employee[a]

Years of creditable service	Full-time-equivalent years
8 1/8 time title 38	1
6 half-time title 38	3
6 half-time Public Health Service	6
4 military	4
6 full-time title 38	6
30	20

[a]A title 38 (5 U.S.C. 8332) employee, with military and other government service, whose "high-3" salary is $50,000. The annuity factor for 30 years creditable service is 56.25 percent. The full-time annuity is 56.25% x $50,000 = $28,125, and the prorated annuity is 20/30 x $28,125 = $18,750.

Private Sector Practices

Both the civil service retirement system as it applies to employees hired before 1984 and the portion of S. 1527 that we analyzed for this report provide for "defined benefit plans." Such plans contain specific formulas that use such factors as salary, age, and years of service for computing benefits. The plans sometimes provide a flat dollar amount for each year of service, regardless of pay; more commonly, they consider both pay and years of service in the computation of benefits. The civil service system does the latter.

For information about the provisions in similar private sector plans that might pertain to part-time federal employees, we interviewed four actuaries who work as private pension plan consultants. The data we received were impressionistic; as two of the actuaries noted, there is no standard language that specifically describes in benefit plans how benefits for part-time employees are calculated. Summary studies of plan

provisions do not contain this information. This latter point was confirmed by our search of the Library of Congress computerized data base. We found no studies summarizing how benefit plans pertain to part-time employees.

We asked the four actuaries for their impressions of how provisions in private sector plans compare to the modification we describe in this report. Their opinions were divided. Two of the actuaries said that "most plans" annualize salary and give prorated credit for service years. The third actuary stated that most companies have provisions for part-time employees similar to those in the current civil service retirement system but that the companies avoid paying unfairly large benefits by not allowing part-time employees to switch to full-time employment as retirement grows near. The fourth actuary reiterated the point that there is no standard language covering part-time workers. All four actuaries did agree that salary should be annualized and service time should be prorated for the calculation of retirement benefits, as in the modification we describe.

Constructing the Examples

In this report, we illustrate the effect of the modification on individual retirement benefits with hypothetical examples. When constructing these examples, we made a number of decisions. First, we tried to cover a broad spectrum of possible work histories. We gave examples of employees working 30, 32, 35, and 40 years with a variety of part-time patterns of reduced work schedules at the beginning, middle, and end of their careers. We did this to illustrate the effects of the current law and the modification on retirement benefits in a variety of situations.

We also started each employee's career at age 25 in order to allow for eligibility for retirement at age 55 after 30 years of service. Apart from its effect on eligibility, a different starting age would not have affected the results of our analysis. S. 1527 contains a provision for a 2-percent reduction for each year an employee who has at least 30 years of service retires before reaching age 62. Since all employees in our examples had at least 30 years of service, we used this reduction in our calculations with regard to the bill.

To make it easier to examine the effects of the current law and the modification on benefits, we used the same initial salaries and salary increases for all examples. In each case, the starting salary was $10,000, and this increased annually by 7 percent for 10 years, 6 percent for the next 10 years, and 5 percent after that until retirement. The initial

retirement benefit also increased by 5 percent each year. This pattern recognizes that the rate of salary increase declines with length of service. The starting salary could have been any amount without affecting the percentage change in the retirement benefit that our modification might bring about.

Finally, when computing retirement benefits, we did not consider the effects of sick leave, disability, or dependents' or survivors' benefits. Introducing these complicating factors would have clouded the main purpose of our analysis.

Estimating the Financial Effect

We could find no information about how full-time or part-time employees change their schedules during their careers. We could have used such data in choosing examples and calculating the overall cost effect of the modification, provided that patterns of change would not be affected by the modification or would be affected in a readily estimable way. However, it is reasonable to expect that these patterns, whatever they are, would be affected substantially by the modification and in a way that we were not prepared to predict.

In the absence of empirical information, we studied the financial effect of the modification by comparing costs for four hypothetical groups of employees. We assumed that three of these groups—the phasers, early phasers, and late phasers—took advantage of the financial incentives in the modification to phase into retirement. By varying the timing of the change the groups made to part-time schedules, we were able to estimate the aggregate effects for these groups of changes made relatively early or late during employees' careers.

Our measure of cost was the "normal cost percentage." This figure is the ratio of the "present value of future benefits" for a group of new employees divided by the "present value of future salaries." The present value of future salaries (or benefits) shows the amount that must be invested now in an interest-earning fund to pay employees' salaries from now until retirement (or employees' benefits from retirement until their beneficiaries die). By expressing these two present values as a ratio, the normal cost percentage shows what percentage of each salary payment must be contributed to the interest-earning fund to pay retirement benefits. It is a useful number for examining retirement costs because it expresses these costs as a percentage of salary rather than as an absolute number, which would be different for different salary amounts.

When calculating these present values, actuaries determine the total value of salary or retirement benefits to be paid to a group. They then discount or reduce these amounts by the interest rate that they assume is being paid by the fund in which the money is invested. In our calculations, we used a 7-percent annual discount rate, which is close to the rate used in the valuation of the civil service retirement system.

To calculate the present value of retirement benefits, we used mortality rates from the 1983 group annuity mortality table published by the Committee on Annuities of the Society of Actuaries. The 1983 table is recent and is considered an appropriate source for the mortality rates of federal employees and retirees by age. These rates are lower than rates for the general U.S. population.

Our calculation of the normal cost percentage was simplified in that new employees in our examples were not subjected to all possible contingencies in a regular actuarial valuation (disability, termination, different retirement rates for different age groups, and death during employment). However, our calculations do allow us to compare the costs, for our four hypothetical groups, of the modification, the current civil service retirement system, and S. 1527 with and without its prorating provision.

Advance Comments from the Office of Personnel Management

United States
Office of
Personnel Management   Washington, D.C. 20415

In Reply Refer To   Your Reference

OCT 11 1985

Honorable Charles A. Bowsher
Comptroller General
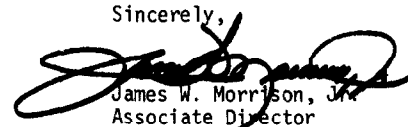U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Bowsher:

This letter is in reply to your request for review and comments
from the Office of Personnel Management on a draft report entitled
Modification of Civil Service Retirement Benefits for Part-time
Employment.

We agree with the recommendation of your report that changes should
be made in the method used to calculate the retirement benefits for
employees who have worked part-time during a portion of their careers.
OPM has developed, and is currently seeking Administration clearance
of, a legislative proposal which would accomplish the same objective
as your recommendation.

Thank you for the opportunity to comment on the draft report.

Sincerely,

James W. Morrison, Jr.
Associate Director
for Compensation
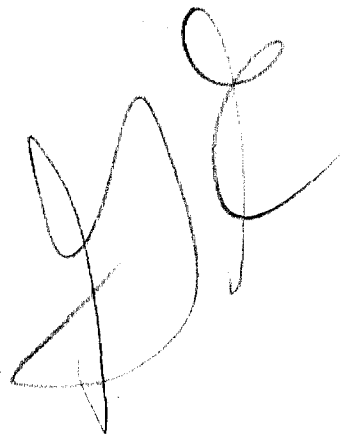
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