

GAO

April 1997

FEDERAL RETIREMENT

Federal and Private Sector Retirement Program Benefits Vary



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19970626 071



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

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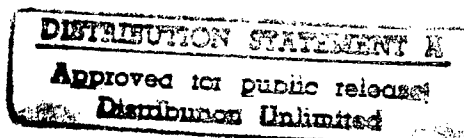
B-271057

April 7, 1997

The Honorable Ted Stevens
Chairman, Committee on Appropriations
United States Senate

The Honorable Fred Thompson
Chairman, Committee on Governmental Affairs
United States Senate

The Honorable John L. Mica
Chairman, Subcommittee on Civil Service
Committee on Government Reform and Oversight
House of Representatives



This report is in response to requests by the Chairmen of the former Senate Subcommittee on Post Office and Civil Service and the House Subcommittee on Civil Service that we make a series of analyses of federal and nonfederal retirement programs. As part of the requests, we were asked to (1) update the reports on nonfederal retirement programs we completed for Congress when the Federal Employees Retirement System (FERS) was being designed and (2) compare current nonfederal programs with FERS and the Civil Service Retirement System (CSRS). As agreed with the Subcommittees, this report provides comparative information on the features and benefit levels of retirement programs offered by primarily large private sector employers, FERS, and CSRS. We are not making any recommendations in this report.

As agreed with your representatives, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time, we will send copies of this report to (1) the Ranking Minority Members of the Senate Committees on Appropriations and Governmental Affairs and of the House Subcommittee on Civil Service, (2) other appropriate congressional committees, (3) the Director of the Office of Personnel Management, (4) the Executive Director of the Federal Retirement Thrift Investment Board, and (5) other interested parties. We will also make copies available to others on request.

Major contributors to this report were Robert E. Shelton, Assistant Director, and Laura G. Shumway, Senior Evaluator. Please contact me at (202) 512-8676 if you or your staff have any questions concerning this report.

L. Nye Stevens
Director, Federal Management and
Workforce Issues

Executive Summary

Purpose

Over the years, considerable debate has occurred over how retirement programs for federal employees compare with the programs available to other employees in the United States. The Chairmen of the former Senate Subcommittee on Post Office and Civil Service and the House Subcommittee on Civil Service asked GAO to compare the features and benefit levels of the federal government's two largest retirement programs for its civilian employees—the Federal Employees Retirement System (FERS) and the Civil Service Retirement System (CSRS)—with those of private sector retirement programs.

Background

Thousands of private sector retirement programs exist, covering millions of employees. According to the Bureau of Labor Statistics, over 75 percent of the full-time employees in private establishments with 100 or more employees and about one-half of the full-time employees in private establishments with 99 or fewer employees are covered by at least one retirement program to which their employers contribute in addition to the Social Security program. The remaining employees are covered by Social Security, but not by retirement programs to which their employers contribute.

The designs of private sector retirement programs vary greatly, although all have the Social Security program as their base. Some employers' programs have both defined benefit and defined contribution plans. Defined benefit plans specify formulas for computing benefit amounts payable at retirement typically based on an employee's age, length of plan participation, and salary history. In contrast, defined contribution plans specify amounts that the employer (and employees, if required) will contribute to the plan. The accumulated contributions, plus investment earnings, constitute the source of employee retirement benefits from a defined contribution plan. Also, some employers' programs have defined benefit plans only, and others have defined contribution plans only in addition to Social Security.

Together, FERS and CSRS covered about 2.8 million federal employees at the beginning of fiscal year 1995. The design of FERS consists of three parts—Social Security; a defined benefit plan; and a defined contribution plan, the Thrift Savings Plan (TSP), to which the federal government and most of its employees contribute. CSRS is a stand-alone defined benefit plan. Employees in CSRS may contribute to the FERS defined contribution plan, but the government does not make any contributions to their accounts. Employees in CSRS are not covered by Social Security through

their federal employment. In general, FERS covers employees who first entered federal service after 1983, and CSRS covers employees who entered earlier.

GAO and the Congressional Budget Office (CBO) contracted at different times with Watson Wyatt Worldwide, a company that collects benefits data from a wide range of employers, to obtain information on the features and benefit levels of the private sector retirement programs included in this report. Watson Wyatt provided this information to GAO and CBO from its 1993 COMPARISON database, which was the latest database available at the time the GAO contract was awarded. The database contained information on the retirement programs of primarily large private sector employers. About one-half of these employers were Watson Wyatt clients; the remainder were from a survey of U.S. employers included in Fortune magazine's list of 1,000 top employers. Therefore, the features and benefit levels developed from the database could not be generalized to the private sector as a whole.

The database described the features of 661 employers' retirement programs. Of these programs, sufficient information was available to allow the contractor to determine the benefit amounts provided by 435 employers' programs. Of the 435 employers, 61 percent had 2,500 or more employees, and 37 percent had fewer than 2,500 employees. The remaining 2 percent of the employers did not provide size information. About 70 percent of the 435 employers provided both defined benefit and defined contribution plans, about 24 percent of the employers had defined contribution plans only, and about 6 percent had defined benefit plans only.

To see how employees with varying ages and years of service would fare under FERS, CSRS, and private sector retirement programs, the contractor calculated the benefit amounts potentially available to five illustrative employees at three different salary levels. In making these calculations, the contractor included the benefit amounts from the defined benefit and defined contribution plans to which employers made contributions as well as the amounts from Social Security. For private sector employers, the contractor made and then averaged separate calculations for each of the 435 private sector retirement programs. Because defined contribution plan benefits accumulate as individual account balances, the contractor converted these balances to annuities so they could be compared with the benefits provided by defined benefit plans. Also the benefit amounts calculated were based on a single set of assumptions about salary

histories, return on investments, the conversion of defined contribution plan amounts, and the rate of inflation after retirement.

GAO believes the assumptions used are reasonable because they either were those used by the Office of Personnel Management (OPM) in its latest actuarial valuations, were based on standards used in the benefits field, or were necessary to provide a common basis of comparison. However, different assumptions would change the relative magnitude of results between programs and the absolute magnitude over all programs. By varying the assumptions, it could also be possible in some circumstances to change the relative rankings between programs. For example, if the salary histories included other types of compensation in addition to base pay, the private sector benefit amounts could have been greater because at least one-half of the 435 private sector retirement programs would include overtime, bonuses, and commissions in their benefit calculations. Also, if the rate of salary growth in the last years of employees' careers had been greater, the benefit amounts from FERS, CSRS, and the private sector programs could have been smaller. However, because FERS and CSRS use the average of the highest 3 years' salaries in their benefit calculations and about one-half of the 435 private sector programs use the highest 5 years' salaries, the benefit amounts from FERS and CSRS would not decrease as much as the private sector amounts.

Results in Brief

The results of GAO's review revealed that there is no clear, bottom-line answer to the question of whether FERS and CSRS offer greater benefits, or smaller benefits, than private sector retirement programs. The benefits available from FERS and CSRS can be smaller, similar, or greater than the average of the programs in the contractor's private sector employer database, depending on a number of factors and how these factors interact with the retirement programs' designs. Chief among these factors are (1) the ages at which employees retire and at which programs provide unreduced benefits, (2) the extent to which employees and employers contribute to the defined contribution plans that are integral components of FERS and most private sector programs, and (3) the impact of cost-of-living adjustment practices on benefit amounts over the long term (see ch. 2). In fact, FERS and CSRS can provide quite different benefit amounts because of their different designs. As a rule, greater benefits are available from FERS than from CSRS, but FERS employees must contribute higher percentages of their salaries to receive the greater benefit amounts.

Principal Findings

Comparative Benefits Depend Greatly on the Ages at Which Employees Retire

One factor that exerts a major influence on the comparative benefit amounts available from FERS, CSRS, and private sector programs is the age at which employees retire. Both federal programs and virtually all of the private sector programs in the contractor's database allow employees to retire as early as age 55. However, FERS and CSRS were designed to provide unreduced benefits at age 55 to employees who serve at least a 30-year career in the federal service. In contrast, few of the private sector programs provide unreduced benefits at age 55, regardless of length of service. Because the private sector defined benefit plans generally impose reductions in accrued benefits for employees who elect to retire at age 55, greater benefits are generally available under the federal programs at age 55 with 30 years of service than the average of the benefits available under the private sector programs in the database.

Benefits available from FERS could be 65 percent of an employee's final salary at age 55 with 30 years of service; CSRS benefits would be 53 percent of final salary, which is also the equivalent of 56.25 percent of the average of the highest 3 years' salaries. Benefits available from the private sector programs in the database averaged 19 percent of an employee's final salary at age 55 with 30 years of service for programs with defined benefit plans only, 26 percent for programs with defined contribution plans only, and 45 percent for programs with both defined benefit and defined contribution plans. Benefits available from FERS at age 55 are greater than benefits available from CSRS primarily because the FERS defined benefit plan adds a "Social Security supplement" to the benefits paid to employees who retire before age 62. (See fig. 2.1.)

Although FERS and CSRS provide unreduced retirement benefits to employees who retire at age 55 with 30 years of service, federal employees, on average, have been considerably older than age 55 when they retired. According to OPM, in 1995 employees who retired under CSRS averaged about age 62 with 30 years of service, and employees who retired under FERS averaged about age 63 with 14 years of service. The contractor's database did not include information on the ages at which employees choose to retire in the private sector programs.

The relative benefit amounts available to federal and private sector employees who elect to wait to retire at age 62 or older, or who are not

eligible to retire at earlier ages, change considerably from the age 55 comparisons. When employees retire at age 62 or older with 30 years of service, which is the actual average for employees who retired under CSRS in 1995, the relative benefit amounts available from CSRS are generally comparable to those available from private sector programs that include defined benefit or defined contribution plans only. However, the CSRS benefit amounts available with 30 years of service are smaller than those available from FERS and the average of the private sector programs that include both defined benefit and defined contribution plans. The benefits available from CSRS for employees who retire with 30 years of service are about 53 percent of final salary.

Regardless of program design, the average benefits available at retirement from the private sector programs in the contractor's database were greater than CSRS benefits for employees who retired at age 62 or older with 20 years of service. For example, CSRS benefits for employees who retired at age 62 with 20 years of service were 36 percent of an employee's final salary, while the benefits available from private sector programs averaged 63 percent for programs with both defined benefit and defined contribution plans, 43 percent for programs with defined contribution plans only, and 40 percent for programs with defined benefit plans only. This is the case because Social Security benefits are available to private sector retirees at age 62, while CSRS retirees receive no Social Security benefits from their federal employment. (See figs. 2.2 through 2.5.)

Benefits available from FERS for employees who retire at age 62 or older are generally comparable to the average benefits available from private sector programs that include both defined benefit and defined contribution plans—as did about 70 percent of the employers in the contractor's database. The FERS benefits are greater than the average benefits from private sector programs that include defined benefit or defined contribution plans only. The benefits available from FERS for employees who retire at age 62 with 20 years of service are about 66 percent of an employee's final salary, and the benefits available from FERS for those employees who retire at age 62 with 30 years of service are about 81 percent. (See figs. 2.2 through 2.5.)

Benefit Amounts Vary by How Much Employees Contribute to Defined Contribution Plans

A second factor that has a major influence on benefit amounts actually paid by FERS and the private sector programs that include defined contribution plans is the amounts employees elect to contribute to defined contribution plans during their working years. The FERS defined

contribution plan and most private sector defined contribution plans provide for employer-matching of some portion of employee contributions. Therefore, employees who contribute the amounts necessary to receive maximum employer contributions will receive greater benefits at retirement than employees who elect not to contribute to the defined contribution plan or who contribute smaller amounts to the plan. GAO estimates that the average retirement benefits from the TSP component of FERS and the defined contribution plan component of private sector programs in the contractor's database could be 10 times higher for employees who contribute enough to receive maximum employer contributions throughout their careers than the benefits earned by employees who make no contributions to their defined contribution plans (see table 2.1). For example, employees who retire under FERS at age 62 with 30 years of service and who contributed enough throughout their careers to receive the maximum employer contributions to the FERS defined contribution plan would receive about 80 percent of their final salaries at retirement—30 percent would be from the defined contribution plan, 31 percent from the defined benefit plan, and 19 percent from Social Security. If those same employees made no contributions to the FERS defined contribution plan, they would receive about 53 percent of final salary at retirement—3 percent would be from the defined contribution plan, 31 percent from the defined benefit plan, and 19 percent from Social Security (see fig. 2.14).

CSRS requires most employees to contribute 7 percent of their salaries toward program costs. In contrast, employees in FERS generally are required to contribute 0.8 percent of their salaries to the defined benefit portion of the program, and over 90 percent of the private sector defined benefit plans in the contractor's database required no employee contributions. However, FERS participants and private sector employees are required to contribute 6.2 percent of their salaries to Social Security, up to the Social Security salary ceiling, which tends to make these employees' total required contributions to Social Security and defined benefit plans generally comparable to the amounts most employees contribute under CSRS. In addition, for employees to receive maximum employer contributions to their defined contribution plans, FERS employees would need to contribute 5 percent of their salaries and the private sector employees covered by programs in the contractor's database would need to, on average, contribute 6 percent of their salaries to receive maximum employer contributions to their defined contribution plans. Accordingly, FERS and private sector employees in programs that include both defined benefit and defined contribution plans must generally

contribute higher amounts to receive maximum employer contributions to their retirement benefits than do CSRS employees.

Cost-of-Living Adjustment Practices Cause Differences in Long-term Benefit Amounts

The third and final factor GAO examined that exerts a major influence on the benefit amounts available to employees during their retirement under federal and private sector retirement programs is cost-of-living adjustment practices. Significant differences exist within and among the federal and private sector programs regarding the adjustment practices. Social Security benefits, which are part of the retirement programs for FERS and private sector employees, are adjusted annually by the full increase in the Consumer Price Index (CPI). This adjustment practice can provide greater increases in benefits than the adjustment practices applicable to the FERS defined benefit plan and private sector defined benefit plans, on average. The CSRS statute requires benefit adjustments to maintain retirees' purchasing power in the same manner as Social Security. However, limitations on CSRS benefit adjustments over a 10-year period in the 1980s and 1990s caused the adjustments actually given retirees to cover about 80 percent of the increase in the CPI during this same period. By their nature, the FERS and private sector defined contribution plan benefits are not subject to cost-of-living adjustments.

In private sector programs, wide variation exists in how cost-of-living adjustments are provided. According to the contractor, available cost-of-living adjustment information for private sector defined benefit plans indicates that retirees have not received adjustments that cover the full increase in the CPI. Retirees covered by the retirement programs of the 50 largest employers in the contractor's database, on average, received adjustments that offset less than 20 percent of the price increase over 20 years of retirement. Nevertheless, the total benefits available from FERS and the average of the private sector programs that have both defined benefit and defined contribution plans continued to exceed the benefit amounts paid from CSRS 20 years after employees retired at age 62 or older with 20 years of service, even though full CSRS adjustments were made over the 20 years.

For example, with retirement at age 62 with 20 years of service, the private sector employees covered by programs in the contractor's database with both defined benefit and defined contribution plans began retirement with benefits that were 27 percent of final salary higher than the CSRS benefits and that continued to be higher 20 years later by 3 percent of final salary. The benefits available from FERS also continued to be higher than CSRS 20

years later by about 9 percent. With retirement at age 65 with 20 years of service, the private sector retiree began retirement with benefits that were 35 percent of final salary higher than CSRS benefits and that continued to exceed CSRS by 8 percent of final salary after 20 years. The total benefits available after 20 years of retirement for FERS employees who retired at age 65 with 20 years of service were higher by about 8 percent of final salary than the benefits available to their private sector counterparts who were covered by programs in the database with both defined benefit and defined contribution plans. (See figs. 2.17 and 2.18.)

For employees who retired at age 62 or older with 30 years of service, the benefits available at retirement were higher under FERS and the private sector programs that include both defined benefit and defined contribution plans than the benefits available under CSRS. However, the following data show that this higher benefit level was not maintained after 10 and 20 years of retirement:

- Ten years after employees retired at age 62 with 30 years of service, FERS benefits continued to exceed CSRS benefits by about 14 percent of final salary, while the benefits available from the private sector programs in the database were similar to the CSRS benefits.
- Twenty years after employees retired at age 62 with 30 years of service, the benefits available from FERS and CSRS were similar, but both FERS and CSRS benefits exceeded the benefits available from the private sector programs with both defined benefit and defined contribution plans by about 10 percent of final salary.
- Twenty years after employees retired at age 65 with 30 years of service, the benefits available from CSRS and the private sector programs with both defined benefit and defined contribution plans were similar at about 50 percent of final salary, but FERS continued to exceed them at about 60 percent. (See figs. 2.19 and 2.20.)

For employees who retired before age 62, benefits available from FERS were again higher by nearly 10 percent of final salary than the average benefits available from private sector programs with defined benefit and defined contribution plans after 10 and 20 years of retirement, but these benefits were about 4 percent of final salary lower than the fully adjusted CSRS benefits by the 20-year point. However, if the limitations imposed on CSRS adjustments during much of the 1980s and 1990s continue to be made in the future, CSRS benefits for pre-age 62 retirees after 20 years of retirement (1) would be lower than benefits available from FERS by 4 percent of final salary and (2) would exceed by 6 percent of final salary

the average benefits available from private sector programs with defined benefit and defined contribution plans. (See fig. 2.16.)

Recommendations

GAO is not making any recommendations in this report.

Agency and Contractor Comments and GAO's Evaluation

Watson Wyatt Worldwide and the Federal Retirement Thrift Investment Board (the Thrift Board) provided oral comments on the draft of this report, and OPM provided written comments. The Watson Wyatt official said that GAO's use and interpretations of their database and analyses were accurate and appropriate. The officials of Watson Wyatt, the Thrift Board, and OPM agreed with GAO's conclusion that there is no definitive answer to the question of whether federal retirement programs offer greater or smaller benefits than private sector programs. The Thrift Board and OPM officials noted that it is very difficult to compare varied federal and private sector retirement programs. They said, and GAO agrees, that GAO's analyses and conclusions are dependent on (1) the database used; (2) the age and service characteristics of the illustrative employees; and (3) the assumptions made about salary histories, return on investments, the conversion of defined contribution plan amounts at retirement to annuities, and the rate of inflation.

GAO believes that the database and illustrative employees used and the assumptions made are reasonable because they either were those used by OPM in its latest actuarial valuations, were based on standards used in the benefits field, or were necessary to provide a common basis of comparison. GAO made minor modifications to this report to clarify that the use of different databases, illustrative employees, and assumptions would have changed the relative magnitude of benefits available among retirement programs as well as the levels of benefits provided by all programs. Using such data could possibly, in some circumstances, change the relative rankings between programs. However, while GAO believes that no one database or set of assumptions could fully capture the range of private sector programs and employees' experiences, it also believes that using different databases and assumptions would not have changed GAO's conclusion that no definitive answer exists to the question of whether federal programs offer greater or smaller benefits than private sector programs.

OPM also commented that the GAO analyses and conclusions might be better understood if additional information on the database, illustrative

employees, and the assumptions were provided in the report (i.e., the executive summary and chapter 1 of the report). GAO agreed that additional information would help the reader understand its analyses and conclusions and provided more details in the executive summary and the objective, scope, and methodology section of chapter 1.

Officials of Watson Wyatt and the Thrift Board provided editorial and technical comments that GAO incorporated in the report as appropriate.

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Abbreviations

BLS	Bureau of Labor Statistics
CBO	Congressional Budget Office
COLA	cost-of-living adjustment
CPI	Consumer Price Index
CSRS	Civil Service Retirement System
DB	defined benefit
DC	defined contribution
FERS	Federal Employees Retirement System
IRS	Internal Revenue Service
MRA	minimum optional retirement age
OPM	Office of Personnel Management
TSP	Thrift Savings Plan

Introduction

Background

Thousands of private sector retirement programs exist, and they cover millions of employees. According to information available from the Bureau of Labor Statistics (BLS), in 1992, 16.1 million full-time employees (47 percent) in small private establishments with 99 or fewer employees were covered by at least one retirement program to which their employers contributed. BLS also reported that, in 1993, 22.4 million full-time employees (78 percent) in medium and large private establishments with 100 or more employees were covered by retirement programs.¹ The remaining employees are covered by Social Security, but not by retirement programs to which their employers contribute.

The designs of private sector retirement programs and their individual plans vary greatly. All programs include Social Security, while some also include defined benefit (DB) plans only, some include defined contribution (DC) plans only, and others include a combination or variation of DB and DC plans.

DB plans specify formulas for computing benefit amounts that are payable at retirement and are typically based on an employee's age, length of plan participation, and salary history. In contrast, DC plans specify amounts the employer (and employees, if required) will contribute to the plan. The accumulated contributions, plus investment earnings, constitute the source of retirement benefits from a DC plan. In summary, a DB plan specifies benefit amounts, and a DC plan specifies contribution amounts.

The Federal Employees Retirement System (FERS) and the Civil Service Retirement System (CSRS) are the two largest retirement programs for federal civilian employees. Together, they covered about 2.8 million employees at the beginning of fiscal year 1995.² Several other retirement

¹See U.S. Department of Labor, Bureau of Labor Statistics, Employee Benefits in Medium and Large Private Establishments, 1993, Bulletin 2456 (November 1994) and Employee Benefits in Small Private Establishments, 1992, Bulletin 2441 (May 1994). According to BLS, the results presented in these bulletins are representative of employees in private nonagricultural industries (i.e., employees with public sector establishments, farms, and private households and the self-employed are excluded). Also, adjustments were not made to the results for some types of missing data. For example, if data had been supplied for all sampled occupations included in Bulletin 2456, the results would represent 39.4 million full- and part-time employees instead of the 34.3 million actually represented; and in Bulletin 2441, the results would represent 47.9 million employees instead of the 44.1 million actually represented. BLS did not publish in either bulletin the percentages of part-time employees who were covered by retirement programs.

²See United States Office of Personnel Management, Annual Report of the Civil Service Retirement and Disability Fund for Fiscal Year 1995 (May 1996).

programs for specific groups of federal civilian employees exist, but these programs are much smaller than FERS and CSRS.³

CSRS was established in 1920 and is a DB plan that predates the Social Security system by several years. When the Social Security system was established, Congress decided that employees in CSRS would not be covered by Social Security through their federal employment. CSRS provides employees the option to retire with unreduced benefits at age 55 with 30 years of service, at age 60 with 20 years of service, and at age 62 with 5 years of service.

At the beginning of fiscal year 1995, CSRS covered about 1.4 million employees and, during that year, paid annuities of almost \$38 billion to about 2.3 million retired employees and survivor annuitants.⁴ CSRS was closed to new entrants after December 31, 1983. When all covered employees and annuitants are deceased, the program will end. According to OPM actuaries, the program is projected to end about 2070.

FERS was implemented in 1987 and generally covers those employees who first entered federal service after 1983. The primary impetus for the new program was the Social Security Amendments of 1983, which required all federal employees hired after December 1983 to be covered by Social Security.⁵ FERS is a three-part retirement program and includes the following: (1) Social Security, (2) a DB plan, and (3) a DC plan—the Thrift Savings Plan (TSP)—to which the government and most employees

³See *Public Pensions: Summary of Federal Pension Plan Data* (GAO/AIMD-96-6, Feb. 16, 1996). For example, the Foreign Service has two retirement programs—the CSRS-like Foreign Service Retirement and Disability System and the FERS-like Foreign Service Pension System. These two programs covered about 12,000 employees in 1993. Another retirement program is the Judicial Retirement System, which covered just over 700 employees in 1993.

⁴Another 26,000 former employees were covered by CSRS and will be eligible to receive benefits in the future.

⁵CSRS was closed to new entrants after December 31, 1983. Most new federal employees hired after that date, or employees who were rehired and had a break in CSRS coverage of more than 1 year, have mandatory Social Security coverage. On January 1, 1987, the new FERS started and most federal employees were covered by either CSRS or FERS. However, Congress, in the FERS legislation, created the CSRS Offset plan. Typically, the Offset plan covers employees who (1) had a break in service that exceeded 1 year and ended after 1983 and (2) had 5 years of creditable civilian service on January 1, 1987. The Offset plan also covers employees hired before January 1, 1984, who acquired CSRS coverage for the first time after that date, and who had at least 5 years of creditable service by January 1, 1987. Employees in the Offset plan are covered by both CSRS and Social Security. The amounts they pay to CSRS are reduced, or offset, by the Social Security taxes they pay. When these employees retire, their CSRS benefits will be calculated under the same rules as other CSRS retirees. However, when the retirees in the Offset plan become eligible for Social Security benefits, their CSRS benefits will be offset by the portion of their Social Security benefits earned during the years they were covered by both CSRS and Social Security. At the beginning of fiscal year 1995, about 74,000 of the 1.4 million CSRS-covered employees were in the Offset plan.

contribute. In FERS, the minimum optional retirement age (MRA) has been increased from the CSRS' age 55 to age 57 for FERS employees born after 1969.⁶ FERS provides employees with the option to retire with unreduced benefits at their MRA with 30 years of service, at age 60 with 20 years of service, and at age 62 with 5 years of service. FERS continued the CSRS objective of encouraging employees to spend their working careers in federal service by making unreduced benefits available at the MRA only to employees who serve 30 or more years with the government. FERS has another provision that is intended to serve as an incentive for employees to extend their careers beyond the MRA. This provision allows FERS employees who retire at age 62 or older and who have completed at least 20 years of service to receive retirement benefits calculated at a formula that provides a 10-percent greater benefit amount than the formula applied to employees who retire before age 62. However, FERS also provides employees the option to retire with reduced benefits at their MRA with 10 years of service. This provision is not available to employees covered by CSRS.

At the beginning of fiscal year 1995, FERS covered about 1.4 million employees and, during that year, paid annuities of about \$474 million to 48,000 retired employees and survivor annuitants.⁷ (See app. I for additional details on CSRS and FERS participants.)

The government automatically contributes an amount equal to 1 percent of salary each pay period to the TSP for each FERS-covered employee whether or not the employee contributes to the TSP. In addition, FERS employees may contribute up to 10 percent of their salaries and receive government-matching contributions on the first 5 percent.⁸ CSRS-covered employees may also contribute up to 5 percent of their salaries to the TSP, but the government does not make matching contributions for them.⁹

⁶The FERS MRA is age 55 for employees born before January 1, 1948. The MRA gradually increases until it reaches age 57 for employees born after December 31, 1969.

⁷Another 89,000 former employees were covered by FERS and will be eligible to receive benefits in the future.

⁸The government will make matching contributions to the TSP accounts of FERS-covered employees in the following manner: on the first 3 percent of salary that an employee contributes, the government contributes \$1.00 for each \$1.00 the employee contributes; on the next 2 percent of salary, the government contributes \$0.50 for each \$1.00 the employee contributes; and on the next 5 percent of salary, the government contributes nothing.

⁹The contributions of FERS and CSRS employees to the TSP are limited by the Internal Revenue Service (IRS). The IRS limit was \$9,500 in 1997.

Employees in FERS and the private sector paid 6.2 percent of their salaries to the Social Security system (excluding Medicare) on earnings of up to \$65,400 in 1997. FERS-covered employees receive the same Social Security benefits as private sector employees. Social Security benefits payable at retirement are designed to replace a higher proportion of earnings for lower-paid employees than for higher-paid employees (see table II.4).

Objective, Scope, and Methodology

In response to the requests of the Chairmen of the former Senate Subcommittee on Post Office and Civil Service and the House Subcommittee on Civil Service, our objective in preparing this report was to compare FERS, CSRS, and private sector retirement programs. These retirement programs can be compared in a number of ways. One possible way is to compare the average benefit amounts different programs paid to their retirees in a given year. In this method, the “typical” benefits paid by each program would be presumed to be indicative of the relative benefits offered by the programs. However, such a comparison approach would ignore differences in ages, salary levels, years of service, and other factors that cause benefit amounts to differ for individual retirees under the programs. Another possible comparison method is to compare program features, such as age and service requirements for retirement eligibility, benefit calculation formulas, salary amounts used in the benefit calculations, and how pension plan benefits are integrated with Social Security benefits. This method would provide useful information on how the various programs are designed, but it would not compare the actual benefit amounts available under the programs.

Although a number of other comparison methods exist, the method we used in this report was to determine the benefit amounts federal and private sector programs would pay to employees who retire at the same ages with the same years of service and salary histories. In using this method, we avoided the benefit differences that could be caused by variances in individual employees’ circumstances. Also, this method allowed us to (1) compare federal retirement benefits with the average benefits available under private sector programs for employees in the same circumstances and (2) provide a measure of the extent to which differences in the features of federal and private sector retirement programs cause differences in the relative benefit amounts available from the programs. However, this method does not consider what portions of the benefits are financed by the employee and the employer.

We and the Congressional Budget Office (CBO) contracted, at different times, with Watson Wyatt Worldwide, a company that collects benefits data from a wide range of employers, to obtain the information on the features and benefit levels of private sector retirement programs included in this report. Watson Wyatt provided this information from its 1993 COMPARISON database, which was the latest database available at the time our contract was awarded. The database contained information on the retirement programs of primarily large private sector employers and that, by design, excluded employers who had no retirement programs other than Social Security. About one-half of the employers were Watson Wyatt clients; the remainder were from a survey of U.S. employers included in Fortune magazine's list of 1,000 top employers. Therefore, the features and benefit levels developed from the database could not be generalized to the private sector as a whole.

The database described the features of 661 employers' retirement programs. Of these programs, sufficient information was available to allow the contractor to determine the benefit amounts provided by 435 employers' programs. Of the 435 employers, 61 percent had 2,500 or more employees. Another 22 percent had 1,000 to 2,499 employees; about 15 percent had 999 or fewer employees. The remaining 2 percent of the employers did not provide size information. About 70 percent of the 435 employers provided both defined benefit and defined contribution plans, whereas about 24 percent of the employers had defined contribution plans only and about 6 percent had defined benefit plans only. Appendix I contains more detailed information on the sizes and program designs of the employers in the contractor's database as well as information on the industries and geographical areas that the employers represented.

To show how employees with varying ages and years of service would fare under FERS, CSRS, and private sector retirement programs, we asked the contractor to calculate the benefit amounts potentially available to three illustrative employees (i.e., age 55 with 30 years of service, age 62 with 20 years of service, and age 65 with 20 years of service) at three different final salary levels (i.e., \$25,000, \$40,000, and \$60,000). (See app. II for the salary histories and the actual dollar amounts used to calculate the benefit amounts.)

Because of limited contract funds, we were limited to three illustrative employees. We chose the specific ages and years of service in the following manner: (1) age 55 with 30 years of service since that is the

earliest age at which general employees in CSRS can choose to retire,¹⁰ (2) age 62 with 20 years of service since reduced Social Security retirement benefits are first available at that age, and (3) age 65 with 20 years of service since full Social Security benefits are available at this age. We chose 20 years of service to reflect the shortening of federal careers that may occur under FERS.¹¹

Subsequently, CBO contracted with Watson Wyatt to obtain the benefit amounts potentially available to an additional two illustrative employees—age 62 with 30 years of service and age 65 with 30 years of service. CBO chose age 62 with 30 years of service since that was the average for employees who retired under CSRS' optional retirement provisions in fiscal year 1995; they chose age 65 with 30 years of service to show the effect of the 30-year career on the age 65 comparisons. The results provided under the CBO contract were based on the same methodology and the same assumptions as the results provided under our contract.¹² We did not independently verify the accuracy of the Watson Wyatt database or the benefit amounts calculated. However, the results from its database and calculations were consistent with results we reported in 1985 and with results reported more recently by others in the benefits field.¹³ Also, Watson Wyatt's calculations for FERS and CSRS were consistent with FERS and CSRS calculations we had made.

The benefit amounts in this report are expressed as "replacement rates." A replacement rate is the annual retirement benefit amount divided by an employee's salary amount in the final year of employment. For example, an employee who earned \$40,000 in the final year of his or her employment and received retirement benefits of \$20,000 a year would have a replacement rate of 50 percent.

¹⁰For this report, we assumed the FERS MRA was age 55, regardless of date of birth, to simplify the comparisons with CSRS and private sector programs.

¹¹We did not choose age 55 with 20 years of service because neither FERS nor CSRS provide unreduced retirement benefits at this age with 20 years of service. However, FERS does provide reduced benefits for employees who retire at their MRA (age 55 to 57) with 10 years of service. CSRS does not have a similar provision. In the contractor's database, about two-thirds of the private sector retirement programs with DB plans provided reduced benefits for employees who retired at age 55 or younger with 10 or less years of service.

¹²The contractor provided the results requested under our contract in October 1995 and the results requested under the CBO contract in January 1997. The contractor used the same 435 employers in the benefit calculations under both contracts. However, some employer values under the CBO contract changed because the contractor had received updates on plan design since our contract. The effect of these changes on the benefit calculations was very small. For example, in programs with both DB and DC plans, the average of the benefit amounts available from the DB plan portion changed from 23.4 percent of final salary in October 1995 to 23.0 percent in January 1997 for employees who retired at age 55 with 30 years of service with a final salary of \$60,000.

¹³Benefit Levels of Nonfederal Retirement Programs (GAO/GGD-85-30, Feb. 26, 1985).

Because the amounts of benefits employees can receive from DC plans are determined in large part by the amounts they and their employers contribute to the plans, we calculated replacement rates for benefits from the FERS and private sector DC plans using the following three levels of assumed employee contributions: (1) employees contributed amounts necessary to receive maximum employer contributions, (2) employees contributed amounts necessary to receive one-half of the maximum employer contributions available, and (3) employees made no contributions to their DC plans.

To examine the effects of cost-of-living adjustment practices that the retirement programs provide to restore lost purchasing power, we also calculated, in constant dollars, the replacement rates that would be available after 10 and 20 years of retirement.¹⁴

The replacement rates presented in chapter 2 of this report are for five illustrative employees at a final salary of \$40,000. Appendix III shows the results of the replacement rate analyses for these five employees if they retired at the final salaries of \$25,000, \$40,000, and \$60,000.

While the relative replacement rates available from federal and private sector retirement programs for the five illustrative employees and salary levels used in our analyses are meaningful measures of how the various programs compare, they do not necessarily represent employees' actual experiences under the programs. For example, employees in CSRS and FERS, on the average, are considerably older than age 55 when they retire. In fiscal year 1995, employees retiring under CSRS' optional retirement provisions averaged age 62 with 30 years of service. Employees retiring under FERS' optional retirement provisions averaged age 63 with 14 years of service.¹⁵ The contractor's database did not contain information on the ages at which employees choose to retire in the private sector programs.

In making the replacement-rate calculations, the contractor included the benefit amounts from the defined benefit and defined contribution plans to which employers made contributions as well as the amounts from

¹⁴Social Security, CSRS, and FERS benefits are to be adjusted annually to reflect cost-of-living increases as measured by the annual change in the Consumer Price Index (CPI). In December 1996, debate over the accuracy of the CPI expanded when the Senate Finance Committee's advisory commission concluded that the CPI is biased and overstates actual cost of living. However, among economists there is a lack of consensus regarding the size and direction of the bias in the CPI.

¹⁵Because the majority of employees covered by FERS were first hired after 1983, the average years of service for those retiring under FERS may not be an accurate indicator of the average length of service for future FERS retirees.

Social Security. For private sector employers, the contractor made and then averaged separate calculations for each of the 435 private sector retirement programs. Therefore, the replacement rates presented represent averages of the benefits available from all programs of the same design. They do not represent the actual benefits that are available from any individual employer's retirement program. Rather, some programs will provide replacement rates that are higher than the average, and other programs will provide replacement rates that are lower than the average.

The benefit amounts calculated were based on a single set of assumptions about salary histories, return on investments, the conversion of defined contribution plan amounts at retirement to annuities, and the rate of inflation after retirement. We had the contractor assume 4.5 percent annual increases in long-term inflation and the CPI and a 7-percent annual return on investments. These are the same assumptions the Office of Personnel Management (OPM) used in its latest actuarial valuation of FERS and CSRS. Because defined contribution plan benefits accumulate as individual account balances, the contractor converted these balances to life annuities using the 1983 Group Annuity Mortality table with a 3-year age setback so they could be compared with the benefits provided by defined benefit plans. We had the contractor assume that all of an employee's years of service were with the same employer who was the last employer before retirement; and that, for Social Security benefit calculations, employees had no earnings in the years before hire and after retirement.

We also had the contractor assume that the salary histories for the illustrative employees included base pay only so that they would have a common compensation structure. Although base pay is generally the only type of compensation used in FERS and CSRS to calculate benefit amounts, at least one-half of the 435 programs in the contractor's database included base pay and other types of compensation, such as overtime pay, bonuses, and commissions, in their benefit calculations. We did not include these other types of compensation in the salary histories because (1) benefit calculations for FERS and CSRS do not include them and (2) the contractor did not collect data on the amounts of compensation, by type, that are typically provided to employees covered by the programs in the database. However, had we assumed the illustrative employees had other types of compensation in addition to the base pay represented in the salary histories, the replacement rates available from FERS and CSRS would have remained the same and the averages of the replacement rates available from the private sector programs could have increased. Also, had we

assumed that the rate of salary growth in the last years of employees' careers had been greater, the replacement rates available from FERS, CSRS, and the private sector programs could have been smaller. However, because FERS and CSRS use the average of the highest 3 years' salaries in their benefit calculations, while about one-half of the 435 private sector programs use the highest 5 years' salaries, the replacement rates available from FERS and CSRS would not decrease as much as the private sector replacement rates.

We believe these assumptions are reasonable because they either were those used by OPM in its latest actuarial valuations, were based on standards used in the benefits field, or were necessary to provide a common basis of comparison. However, different assumptions would change the relative magnitude of results between programs and the absolute magnitude over all programs. It could also be possible in some circumstances to change the relative rankings between programs. For example, an assumed annual return of 9.5 percent, rather than 7.0 percent, on DC plan investments could mean that a 30-percent increase in replacement rates would be available from DC plans after 20 years of service. Over 30 years, a 9.5 percent annual return could generate a 50-percent increase in DC plan benefits.

To calculate the benefit amounts 10 and 20 years after retirement, the contractor needed estimates of the cost-of-living adjustments (COLA) provided in the DB plan portion of private sector employers' programs. Wide variation exists in how COLAs are provided. The adjustments tend to be ad hoc, and their size and frequency tend to vary by employer size. The contractor routinely tracks COLAs given by 50 large companies, but neither we nor the contractor are aware of any data sources that accurately track COLAs given by private sector DB plans, overall. In the absence of more complete data on DB plan COLAs in the private sector, we had the contractor use the 50 companies' COLA experiences to represent all private sector DB plans in calculating replacement rates available from private sector programs 10 and 20 years after retirement.

We limited the federal and private sector benefit comparisons presented in this report to the benefits available to career employees under the "optional" or "regular" retirement provisions of employers' retirement programs. Accordingly, we did not include the following in our comparisons:

- other program provisions, such as early involuntary retirement, disability retirement, or survivor benefits;
- special benefits that are available in FERS and CSRS, such as the benefits that are provided to Members of Congress and congressional staff, law enforcement officers and firefighters, and air traffic controllers;
- extra benefits that private sector programs may provide to top executives; and
- spousal or children's benefits that may be paid by Social Security in addition to benefit amounts paid to retirees.

Our findings may have been different if another private sector database had been used in the benefit comparisons because our contractor's database could not be generalized to the private sector as a whole. Over one-half of the employers in the contractor's database have 2,500 or more employees. A number of small employers are in the database, but not in proportion to their overall representation among private sector employers with retirement programs in 1993. About 99 percent of the employers with retirement programs in 1993 had fewer than 2,500 employees. Also, about 24 percent of the employers in the contractor's database had retirement programs that included DC plans only. In an earlier report, we described the retirement program designs of all U.S. private sector employers who offered pensions in 1993.¹⁶ Overall, a higher proportion (88 percent) of these employers sponsored only DC plans than the employers in the contractor's database. However, the percentage of all employers with 2,500 or more employees that sponsored both DB and DC plans increased from 1984 to 1993, and nearly one-half of the employers with 2,500 or more employees sponsored DB plans in 1993.

We did our review in Washington, D.C., from October 1995 to January 1997 in accordance with generally accepted government auditing standards. We requested comments on a draft of this report from Watson Wyatt Worldwide and the heads of OPM and the Federal Retirement Thrift Investment Board (the Thrift Board) or their designees. The Research Actuary of Watson Wyatt's Research and Information Center in Washington, D.C., and the Thrift Board's Director of External Affairs provided us with oral comments. The Director of the Office of Personnel Management provided written comments. Both the oral and written comments are presented and evaluated in the executive summary and chapter 4. The OPM comments are reprinted in appendix VI.

¹⁶Private Pensions: Most Employers That Offer Pensions Use Defined Contribution Plans (GAO/GGD-97-1, Oct. 3, 1996).

Comparative Benefit Levels Available From FERS, CSRS, and Private Sector Retirement Programs

The comparative benefit amounts available to employees in FERS and CSRS and the average benefit amounts available from the retirement programs in the contractor's private sector database can differ considerably, depending on a number of factors and how these factors interact with the retirement programs' designs. These factors include (1) the ages at which employees retire and at which programs provide unreduced benefits, (2) the extent to which employees and employers contribute to the DC plans that are integral components of FERS and most private sector programs, and (3) the impact of inflation and cost-of-living adjustments provided through the retirement programs. In general, when employees retire before age 62, the largest benefits are available from FERS and the smallest benefits are available from the private sector programs. The benefits available from CSRS fall between those available from FERS and the private sector programs.

However, the comparative benefits are quite different for employees who retire at age 62 or older. For retirees at these older ages, FERS continues to make the largest benefits available, but these benefits are just slightly more than the average for private sector programs that, like FERS, include both DB and DC plans. The benefits that are available at age 62 or older from the private sector programs that include DB or DC plans only are quite similar, but these benefits are smaller than the benefits available from FERS and the average benefits available from the private sector programs that include both DB and DC plans.

CSRS benefits for employees retiring at age 62 or older with 20 years of service are smaller than FERS benefits and the average benefits available from private sector programs, regardless of program design because (1) CSRS benefits are the same for specific years of service, regardless of age, and (2) CSRS-covered employees receive no Social Security benefits from their federal employment. For employees who retire at age 62 or older with 30 years of service, CSRS benefits are still smaller than the benefits available from FERS and the private sector programs that include both DB and DC plans, but the CSRS benefits become similar to the benefits available from private sector programs with DB or DC plans only.

The level at which employees contribute to their DC plans is a significant factor in determining the benefits that are available from FERS and the private sector programs that incorporate DC plans. Considerably smaller benefits are available from such programs when employees contribute lesser amounts than are necessary to receive maximum employer contributions.

In this chapter, we present the replacement rates available from FERS, CSRS, and private sector programs for five illustrative employees who are (1) age 55 with 30 years of service, (2) age 62 with 20 years of service, (3) age 65 with 20 years of service, (4) age 62 with 30 years of service, and (5) age 65 with 30 years of service and who retire with a final salary of \$40,000. Unless otherwise indicated, the replacement rates are calculated using the assumption that employees in FERS and the private sector programs that include DC plans contributed amounts that are necessary to receive maximum employer contributions to their DC plans. However, separate replacement-rate calculations are also presented for each illustrative employee to show the effects of lower amounts of employee contributions to DC plans. The effects of cost-of-living adjustment practices on retirement program replacement rates after 10 and 20 years of retirement are also analyzed in this chapter.

Comparative Replacement Rates at Retirement

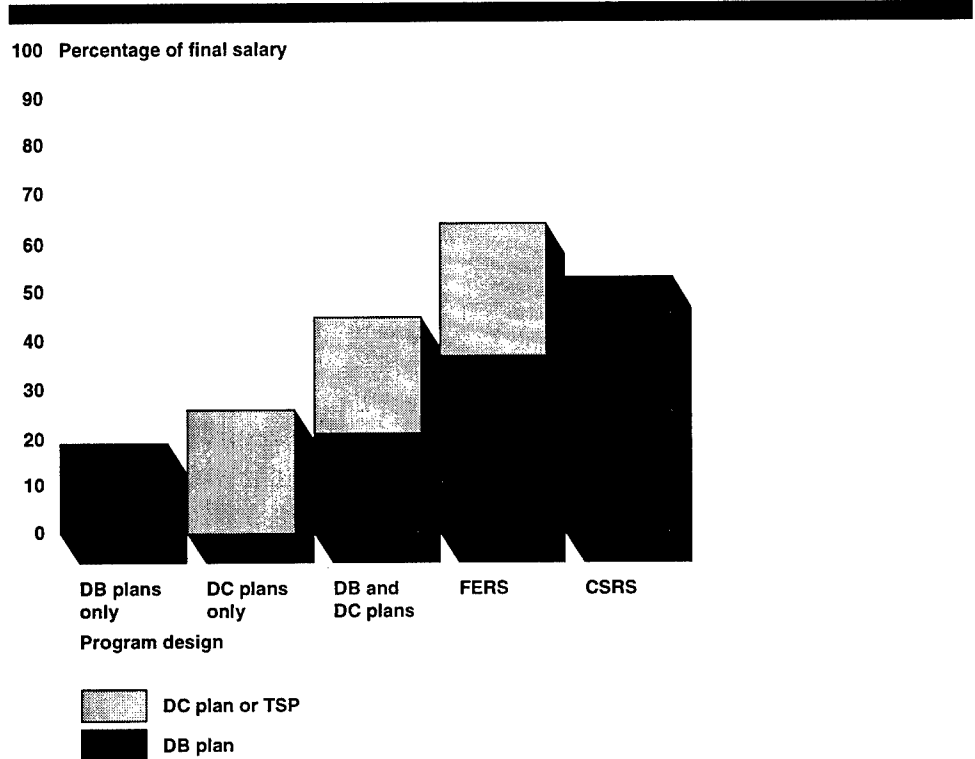
With a replacement rate of 65 percent, FERS ranks first in a comparison of available benefits for employees who retire at age 55 with 30 years of service. CSRS is second with a replacement rate of 53 percent for employees who retire at age 55 with 30 years of service, and the average of private sector programs with both DB and DC plans in the contractor's database is third with a 45-percent replacement rate. The private sector programs that have DB or DC plans only have available benefits averaging less than 30 percent of final salary. (See fig. 2.1.)

The availability of unreduced DB plan benefits in FERS and CSRS for employees retiring at age 55 with 30 years of service is an advantage over most DB plans in the private sector because private sector plans usually impose reductions in accrued benefits for employees retiring at age 55, regardless of their number of years of service. Moreover, Social Security retirement benefits are not available to private sector retirees until they reach age 62, whereas the FERS' DB plan provides an annuity supplement equal to the estimated Social Security benefits that a retiree earned while employed by the federal government and that the retiree could receive at age 62.¹

¹The FERS annuity supplement ends when the retiree reaches age 62 and his or her actual Social Security payments can begin.

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Figure 2.1: Average Replacement Rates Available for Employees Who Retire at Age 55 With 30 Years of Service and a Final Salary of \$40,000



Note 1: Social Security retirement benefits are not available at age 55. Retirees may elect to begin benefits at age 62.

Note 2: The FERS' DB plan provides an annuity supplement until the retiree reaches age 62. The supplement equals the estimated Social Security benefits that are payable at age 62 and earned while the retiree was employed by the federal government.

Note 3: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

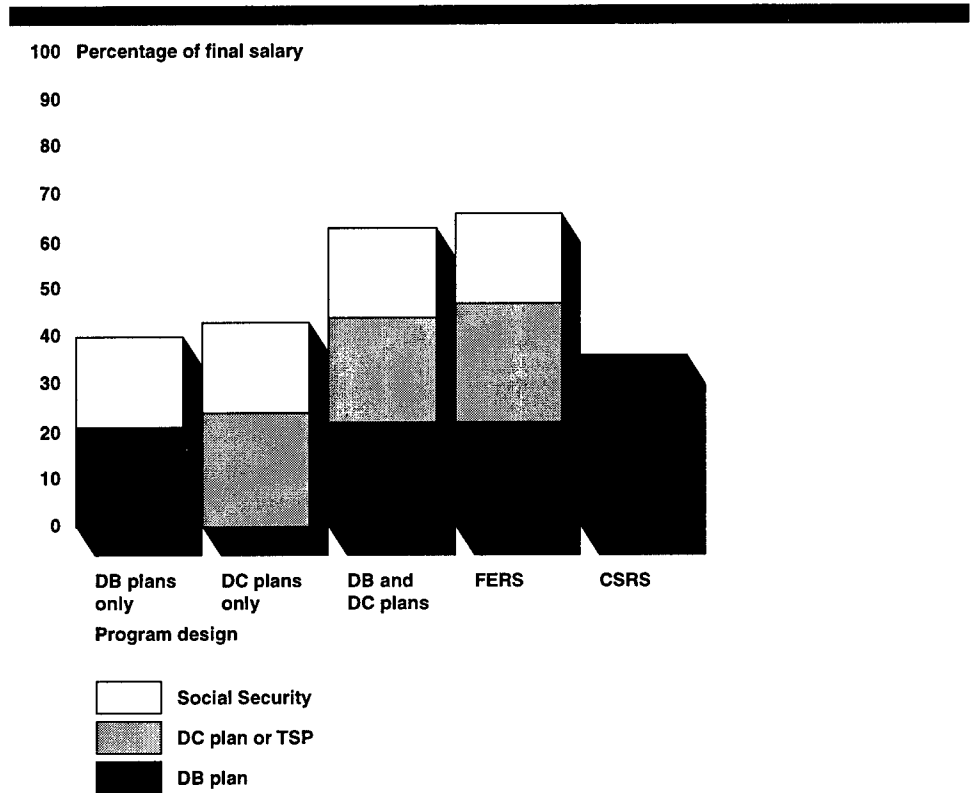
Source: Watson Wyatt Worldwide database (see table III.1).

Because Social Security retirement benefits are available to retirees in FERS and the private sector programs at age 62 or older, the relative positions of the federal and private sector programs, in terms of replacement rates, change at age 62. Specifically, when the employee retires at age 62 with 20 years of service, FERS is no longer the dominant program, and CSRS drops from the second position to the last position. The FERS replacement rate of 66 percent is higher than the 63-percent average

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replacement rate of the private sector programs with both DB and DC plans. Private sector programs that include either a DB plan or a DC plan, but not both, have available replacement rates of about 40 percent, which is higher than the CSRS rate of 36 percent. (See fig. 2.2.)

Figure 2.2: Average Replacement Rates Available for Employees Who Retire at Age 62 With 20 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.2).

When an employee retires at age 65 with 20 years of service, the relative positions of the programs, in terms of replacement rates, are the same as at age 62, but the available replacement rates for all programs, except CSRS, are higher than at age 62. At age 65, replacement rates available to employees under FERS and the average of the private sector programs with

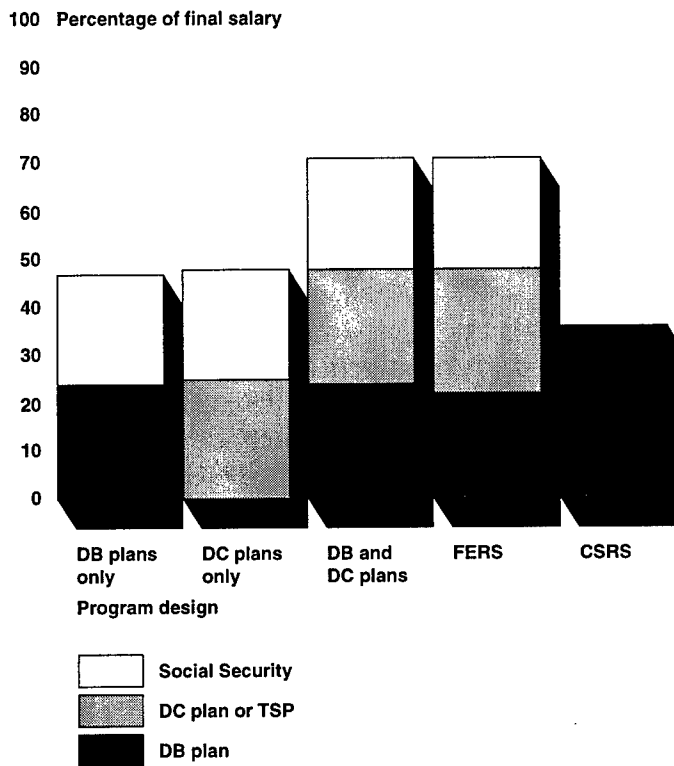
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both DB and DC plans are almost the same, 71.1 and 70.5 percent, respectively. For private sector programs with either a DB or DC plan, the average available replacement rate increases to almost 50 percent. The CSRS replacement rate remains the same at 36 percent. (See fig. 2.3.)

Several factors cause replacement rates for FERS and private sector programs, on average, to increase between the ages of 62 and 65. Social Security benefits are reduced for employees who retire before age 65. Similarly, some private sector DB plans impose reductions in accrued benefits when employees retire before age 65. Finally, DC plan benefit amounts are larger at age 65 because account balances are paid out over shorter periods when employees retire at older ages. These factors do not apply to CSRS because (1) CSRS benefit amounts are not determined by employees' ages upon retirement at age 55 or older, (2) CSRS employees are not covered by Social Security through their federal employment, and (3) CSRS employees do not receive any employer-paid DC plan benefits. Therefore, after age 55, CSRS replacement rates are the same for all employees with the same years of service, regardless of the ages at which they retire.

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Figure 2.3: Average Replacement Rates Available for Employees Who Retire at Age 65 With 20 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.3).

When an employee retires at age 62 or older with 30 years of service, the relative positions of the federal and private sector programs, in terms of replacement rates, change again. FERS and the private sector programs that include both DB and DC plans remain in the top two positions, but CSRS is no longer in the last position. The CSRS replacement rate moves just ahead of the averages of the replacement rates available from programs with DB or DC plans only. Some of the change in the CSRS position is due to the graduated accrual rates used for calculating benefit amounts under CSRS.²

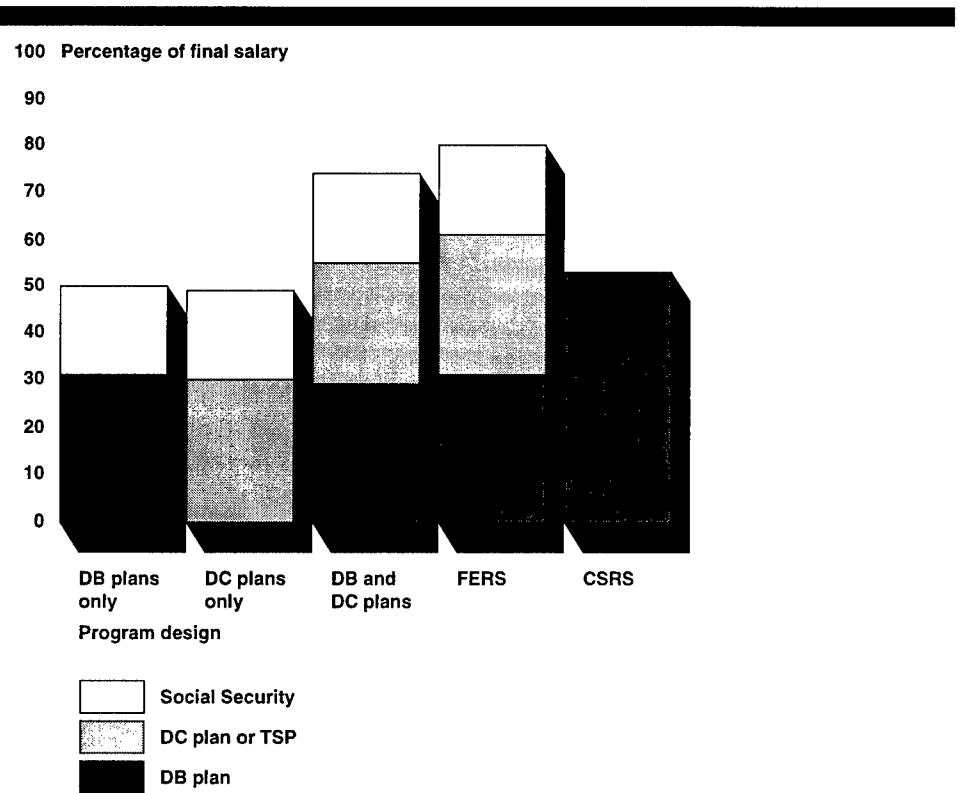
²The accrual rates used to calculate the CSRS benefit amounts for general employees are 1.5 percent for each of the first 5 years of service, 1.75 percent for each of the next 5 years, and 2 percent for each year of service over 10 years.

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For a 30-year career, 20 years are calculated at the highest rate; while for a 20-year career, only 10 years are calculated at the highest rate. Therefore, a 30-year career under CSRS yields a greater benefit than does a 20-year career.

When the employee retires at age 62 with 30 years of service, CSRS has a replacement rate of 53 percent; while the averages of the replacement rates for the DB and DC plans only programs are about 50 percent. The FERS' replacement rate and the averages of rates from the private sector programs that have both DB and DC plans are 81 and 75 percent, respectively, when the employee retires at age 62 with 30 years of service. (See fig 2.4.)

Figure 2.4: Average Replacement Rates Available for Employees Who Retire at Age 62 With 30 Years of Service and a Final Salary of \$40,000



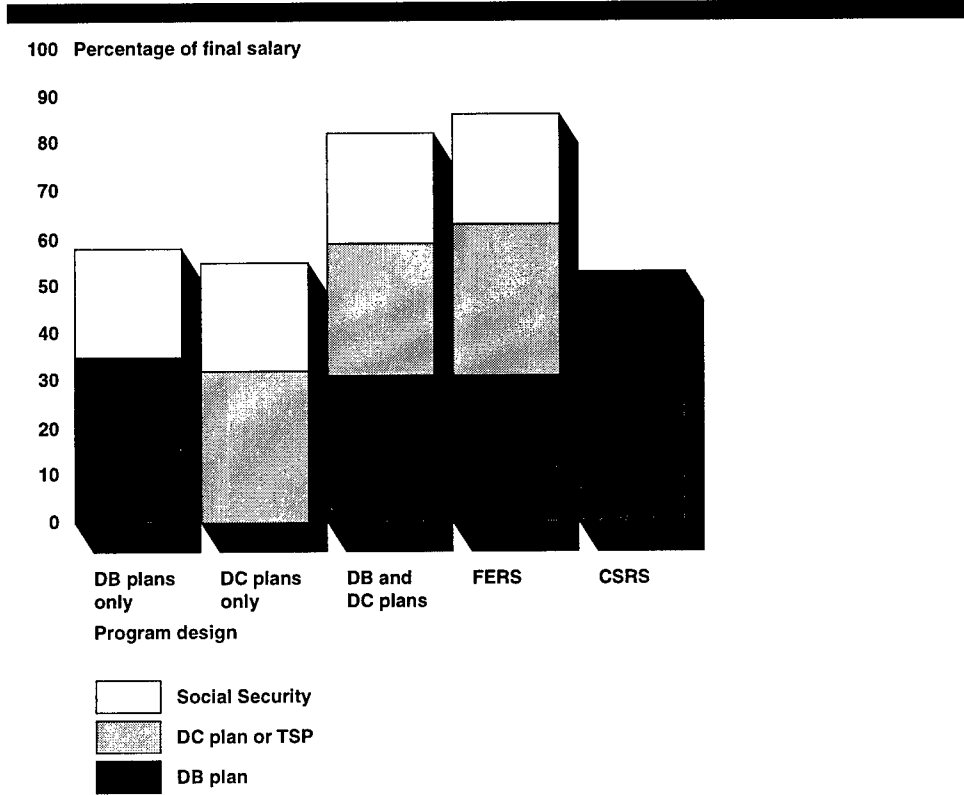
Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.4).

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At age 65 with 30 years of service, the replacement rates available to employees under CSRS and the averages of the replacement rates for the private sector programs with DB or DC plans only are within 5 percentage points of each other, ranging from 53 to 58 percent. The replacement rate for employees retiring at age 65 with 30 years of service under FERS is 87 percent, and the average of the rates for private sector programs that include both DB and DC plans is 82 percent. (See fig. 2.5.)

Figure 2.5: Average Replacement Rates Available for Employees Who Retire at Age 65 With 30 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.5).

Relationship of Employee Contributions to Retirement Program Benefits

Just as differences exist in the levels of benefits provided by various retirement programs, differences also exist among programs in the amounts employees must contribute toward program costs. In general, to receive the replacement rates discussed above, CSRS and the private sector programs that include Social Security and DB plans only require the smallest employee contributions. FERS and the private sector programs that include DC plans, regardless of whether a DB plan is also provided, require the greatest employee contributions to receive maximum employer contributions to their program benefits.

The amounts that employees contribute to the FERS and private sector DC plans are critical factors in determining the benefit amounts employees can receive from the overall retirement programs. Employees who contribute the amounts that are necessary to receive maximum employer contributions to DC plans will receive greater benefits at retirement than those employees who elect not to contribute to the DC plan or those employees who contribute smaller amounts.

Effects of Equalizing Employee Contributions to FERS, CSRS, and Private Sector Retirement Programs That Include Both DB and DC Plans

Most employees in CSRS are required to contribute 7 percent of their salaries toward program costs. Employees in FERS also generally contribute a total of 7 percent of their salaries to Social Security and the FERS' DB plan (i.e., 6.2 percent to Social Security and 0.8 percent to the DB plan). Private sector employees contribute 6.2 percent of their salaries to Social Security, but virtually all of the programs in the contractor's database with DB plans did not require employee contributions toward DB plan costs.

In the FERS' DC plan—the TSP—employees must contribute 5 percent of their salaries to receive the maximum available employer contributions to their accounts. Accordingly, to obtain the greatest available benefits from FERS, employees must contribute a total of 12 percent of their salaries. Employees in private sector programs that include DC plans must also generally contribute about 12 percent of their salaries to receive the greatest benefits available from their programs. These employees must contribute 6.2 percent of their salaries to Social Security, and, according to the contractor, typically must contribute 6 percent of their salaries to receive maximum employer contributions to their DC plans.

Employees in CSRS can, by law, contribute up to 5 percent of their salaries to the TSP with no employer-matching contributions. Therefore, CSRS employees who contribute 5 percent of their salaries to the TSP would

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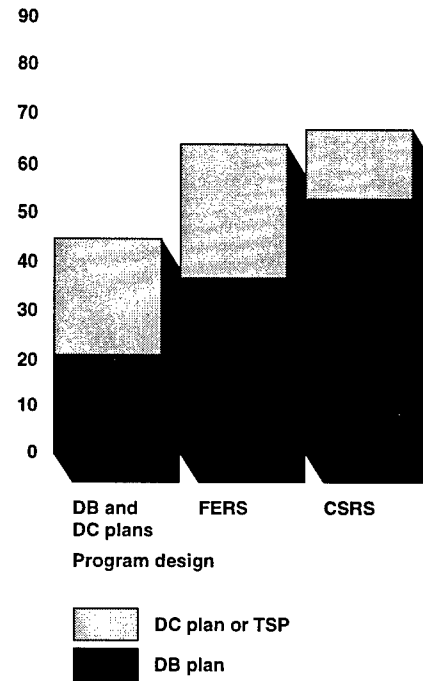
contribute a total of 12 percent of salary to their retirement program, just as the employees in FERS and private sector programs that include DC plans. To show the effects of employee contributions on replacement rates if employees in FERS, CSRS, and private sector programs that include both DB and DC plans were all to contribute approximately 12 percent of their salaries to their retirement programs, figures 2.6 through 2.10 reflect the comparative replacement rates that would be available to these employees.³ As the figures show, the replacement rate available to CSRS employees who retire at age 55 with 30 years of service would be quite similar to the FERS replacement rate, but considerably higher than the average replacement rate available from private sector programs that include both DC and DB plans. However, even with employee contributions of 12 percent of salary, the CSRS replacement rates for employees who retire at ages 62 and 65 with 20 or 30 years of service would be lower than FERS and the private sector programs that include both DB and DC plans.

³The percentage of salary contributed is exactly 12 percent for FERS and CSRS employees and averages 12.2 percent for private sector employees in programs with both DB and DC plans.

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Figure 2.6: Comparative Average Replacement Rates Available When Employees Contribute 12 Percent of Their Salaries and Retire at Age 55 With 30 Years of Service and a Final Salary of \$40,000

100 Percentage of final salary



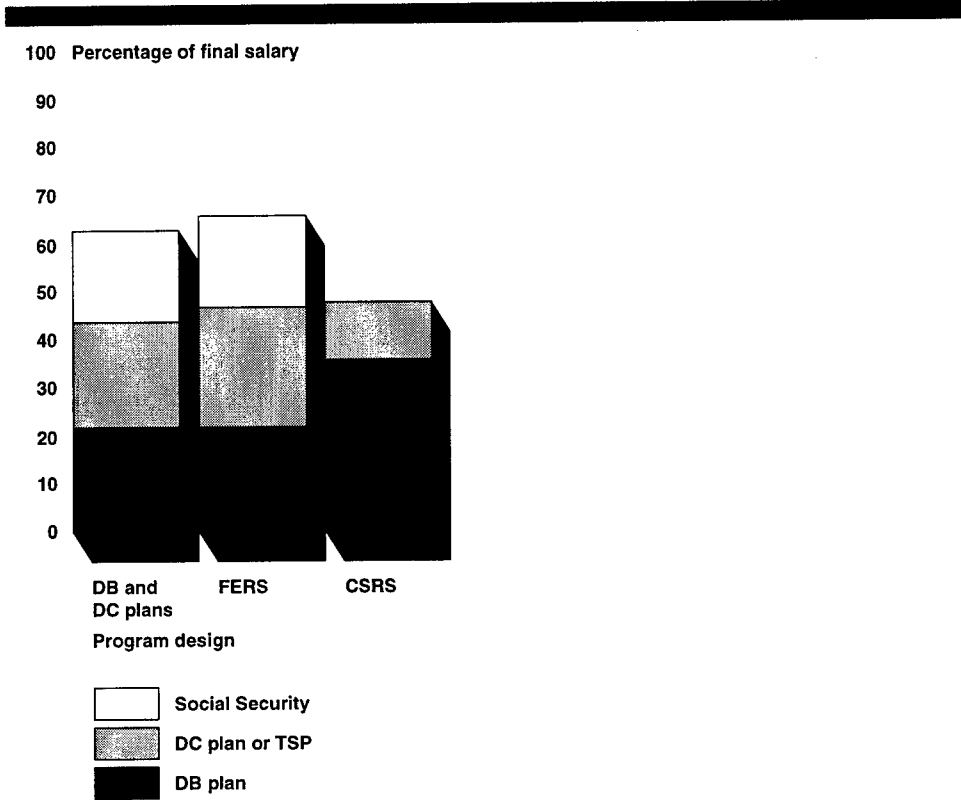
Note 1: Social Security retirement benefits are not available at age 55. Retirees may elect to begin benefits at age 62.

Note 2: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Sources: Watson Wyatt Worldwide database (see table III.1) and GAO analysis.

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Figure 2.7: Comparative Average Replacement Rates Available When Employees Contribute 12 Percent of Their Salaries and Retire at Age 62 With 20 Years of Service and a Final Salary of \$40,000

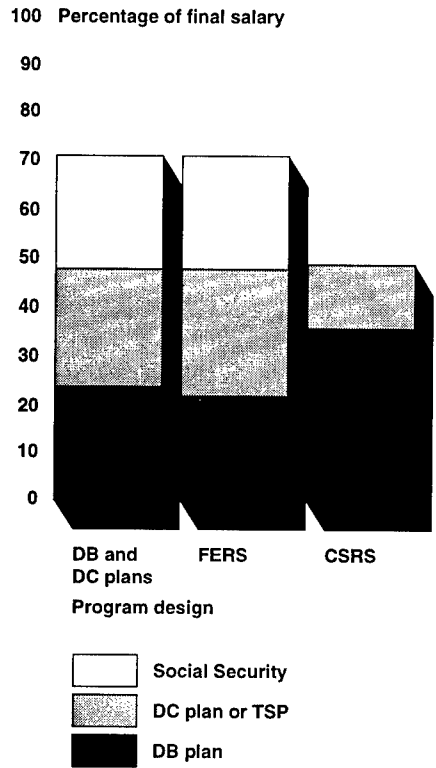


Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Sources: Watson Wyatt Worldwide database (see table III.2) and GAO analysis.

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Figure 2.8: Comparative Average Replacement Rates Available When Employees Contribute 12 Percent of Their Salaries and Retire at Age 65 With 20 Years of Service and a Final Salary of \$40,000

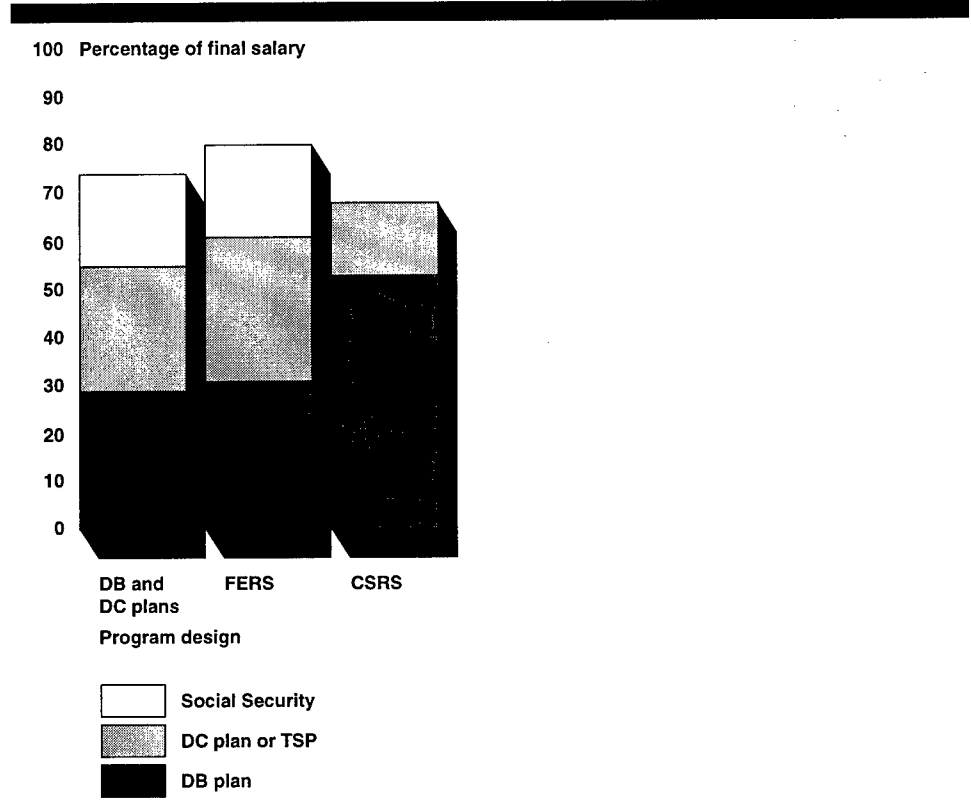


Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Sources: Watson Wyatt Worldwide database (see table III.3) and GAO analysis.

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Figure 2.9: Comparative Average Replacement Rates Available When Employees Contribute 12 Percent of Their Salaries and Retire at Age 62 With 30 Years of Service and a Final Salary of \$40,000

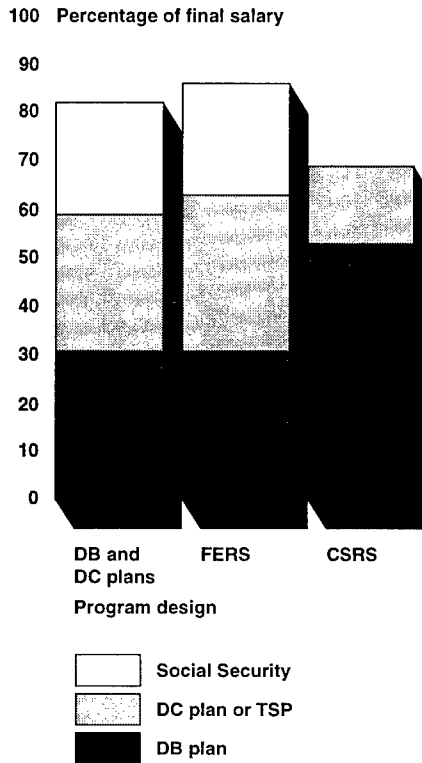


Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Sources: Watson Wyatt Worldwide database (see table III.4) and GAO analysis.

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Figure 2.10: Comparative Average Replacement Rates Available When Employees Contribute 12 Percent of Their Salaries and Retire at Age 65 With 30 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Sources: Watson Wyatt Worldwide database (see table III.5) and GAO analysis.

Effects of Employee Contribution Rates on DC Plan Benefits

Whether comparisons are made of the replacement rates available solely from DC plans or the replacement rates available from all plans that are part of the retirement programs (i.e., Social Security, DB plans, and/or DC plans), the amounts that employees contribute to DC plans significantly affect replacement rates and can affect which retirement program provides the highest replacement rate.

Table 2.1 illustrates the effects of employee contribution amounts on DC plan benefits. The table shows the comparative average replacement rates that are available from FERS' TSP and the private sector DC plans in the contractor's database when employees (1) contribute amounts that are sufficient to receive maximum employer contributions, (2) contribute

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amounts that are sufficient to receive one-half of the maximum employer contributions available, and (3) make no contributions to their DC plans. The amounts that employees contribute to their DC plans have a major influence on the benefits they could receive from their DC plans. For example, employees retiring at age 62 with 30 years of service under FERS could expect to receive annual benefits of about 30 percent of their final salary from their TSP accounts if they had received the maximum employer contributions by contributing 5 percent of their salary to the TSP throughout their 30-year career. This amount would be 10 times greater than the 3 percent of final salary they could expect to receive from TSP if they had made no contributions to their TSP accounts.

Table 2.1: Average Replacement Rates Available From the FERS' TSP and the Private Sector DC Plans at Varying Amounts of Employee Contributions

Numbers in percent

Program design	Average DC plan replacement rates		
	Employees contribute amounts to receive maximum employer match	Employees contribute amounts to receive one-half maximum employer match	Employees make no contributions
Age 55 with 30 years of service and \$40,000 final salary:			
Private sector, DC plans only	26.0	16.3	6.3
Private sector, both DB and DC plans	24.1	13.3	2.1
FERS' TSP	27.2	16.3	2.8
Age 62 with 20 years of service and \$40,000 final salary:			
Private sector, DC plans only	23.7	14.9	5.7
Private sector, both DB and DC plans	22.0	12.2	1.9
FERS' TSP	24.8	14.9	2.5
Age 65 with 20 years of service and \$40,000 final salary:			
Private sector, DC plans only	25.2	15.8	6.1
Private sector, both DB and DC plans	23.5	12.9	2.0
FERS' TSP	26.4	15.9	2.7
Age 62 with 30 years of service and \$40,000 final salary:			
Private sector, DC plans only	29.8	18.6	7.3
Private sector, both DB and DC plans	26.2	14.3	1.8
FERS' TSP	30.4	18.2	3.1
Age 65 with 30 years of service and \$40,000 final salary:			
Private sector, DC plans only	31.7	19.8	7.8
Private sector, both DB and DC plans	27.9	15.2	1.9
FERS' TSP	32.4	19.4	3.3

Source: Watson Wyatt Worldwide database (see tables III.1 through III.15).

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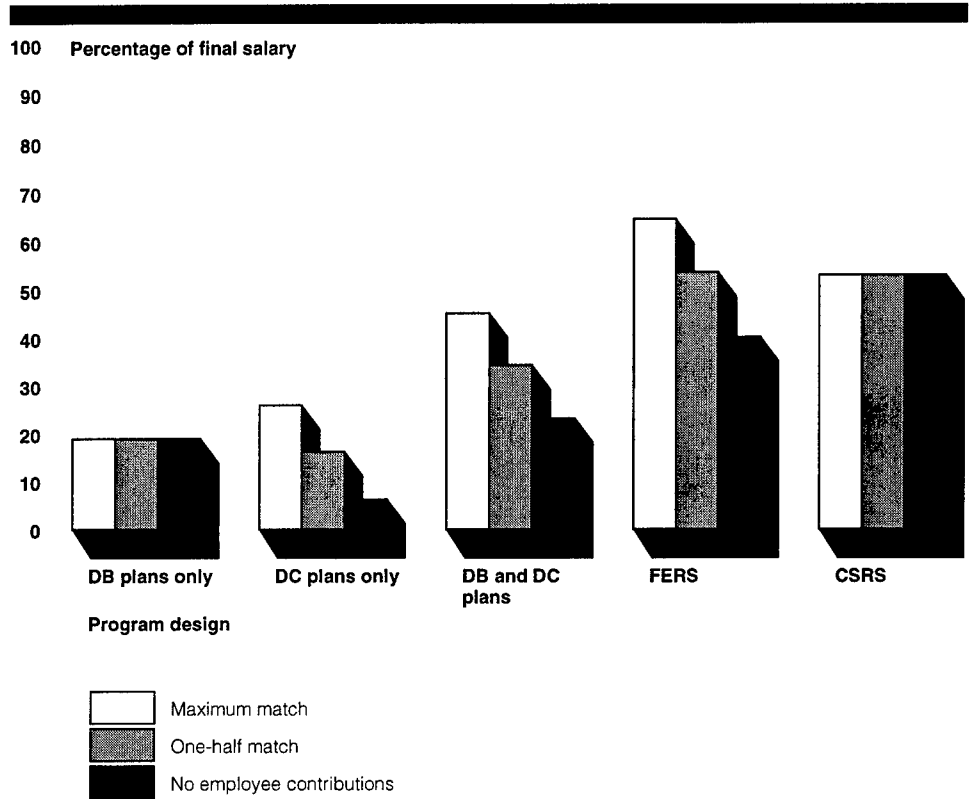
To show the effects of employee contributions to DC plans on the total replacement rates available from all parts (i.e., Social Security, DB plans, and/or DC plans) of the federal and private sector retirement programs, figures 2.11 through 2.15 show the total retirement program average replacement rates available at each of the three levels of contributions to DC plans.³ The replacement rates decline with reduced levels of employee contributions in all programs that include DC plans.

When employees retire at age 55 with 30 years of service, CSRS' replacement rate is higher than the replacement rates for all other programs in the comparison, regardless of the amounts employees contribute to the DC plans, except for FERS employees who contribute at least one-half of the amount required to receive maximum employer contributions to the TSP. (See fig. 2.11.)

³The comparisons shown in figures 2.11 through 2.15 do not include any employee contributions to the FERS' TSP for CSRS employees because the government does not match their TSP contributions. The comparisons also do not include any additional contributions that FERS or private sector employees could make to their DC plans and that would not be matched by their employers.

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Figure 2.11: Effect of Employee Contributions on Average Replacement Rates Available When Employees Retire at Age 55 With 30 Years of Service and a Final Salary of \$40,000



Note 1: Social Security retirement benefits are not available at age 55. Retirees may elect to begin benefits at age 62.

Note 2: These bars include the benefits gained from any DB or DC plans to which the employer contributes.

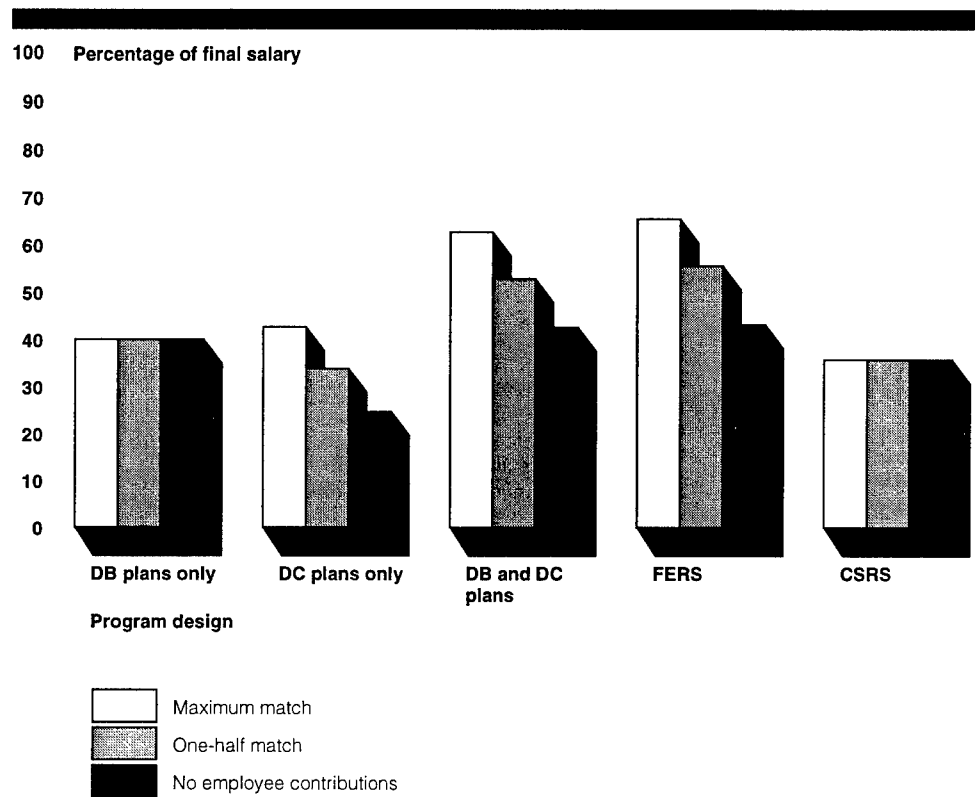
Source: Watson Wyatt Worldwide database (see tables III.1, III.6, and III.11).

When employees retire at ages 62 and 65 with 20 years of service, the other programs, even if covered employees made no contributions to their DC plans, generally provide higher replacement rates than CSRS. The only average replacement rates when employees retire at ages 62 and 65 with 20 years of service that are lower than the CSRS replacement rate are those rates that occur in private sector programs with DC plans only when employees did not make maximum contributions to their DC plans. FERS' replacement rates when employees retire at ages 62 and 65 with 20 years of service are comparable to the replacement rates available from private

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sector programs with both DB and DC plans at all three levels of employee contributions. However, employees in private sector programs with DC plans only must make maximum contributions to their plans to receive replacement rates at ages 62 and 65 that are comparable to the FERS' replacement rate with no employee contributions to the TSP. (See figs. 2.12 and 2.13.)

Figure 2.12: Effect of Employee Contributions on Average Replacement Rates Available When Employees Retire at Age 62 With 20 Years of Service and a Final Salary of \$40,000

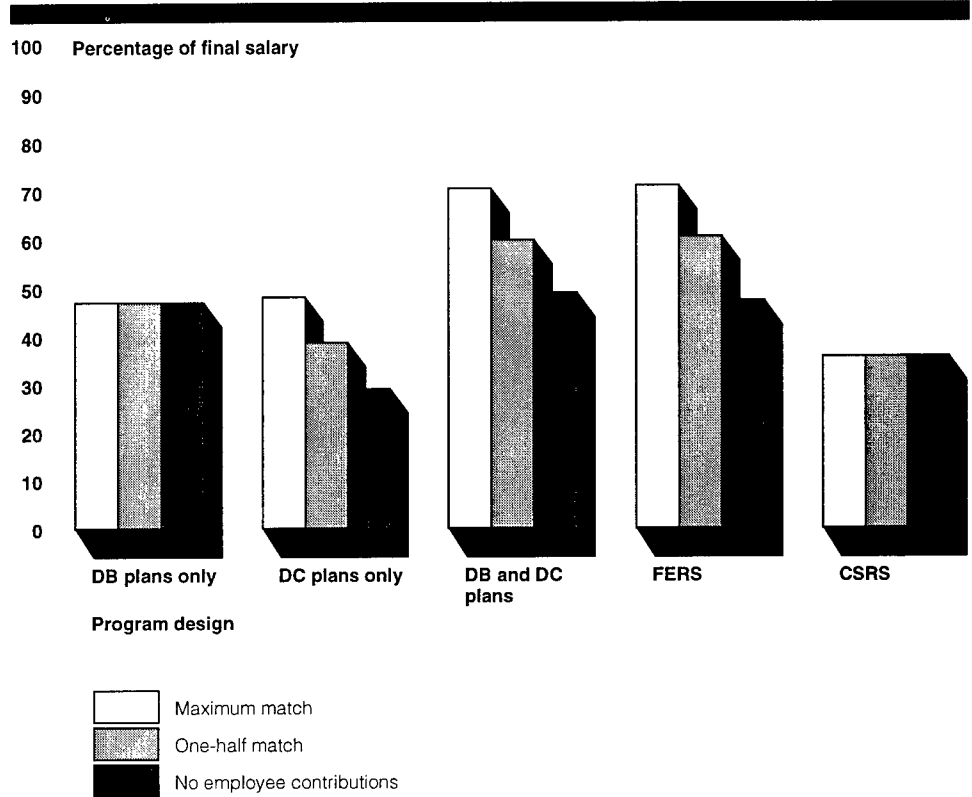


Note: These bars include the benefits gained from Social Security and any DB or DC plans to which the employer contributes.

Source: Watson Wyatt Worldwide database (see tables III.2, III.7, and III.12).

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Figure 2.13: Effect of Employee Contributions on Average Replacement Rates Available When Employees Retire at Age 65 With 20 Years of Service and a Final Salary of \$40,000



Note: These bars include the benefits gained from Social Security and any DB or DC plans to which the employer contributes.

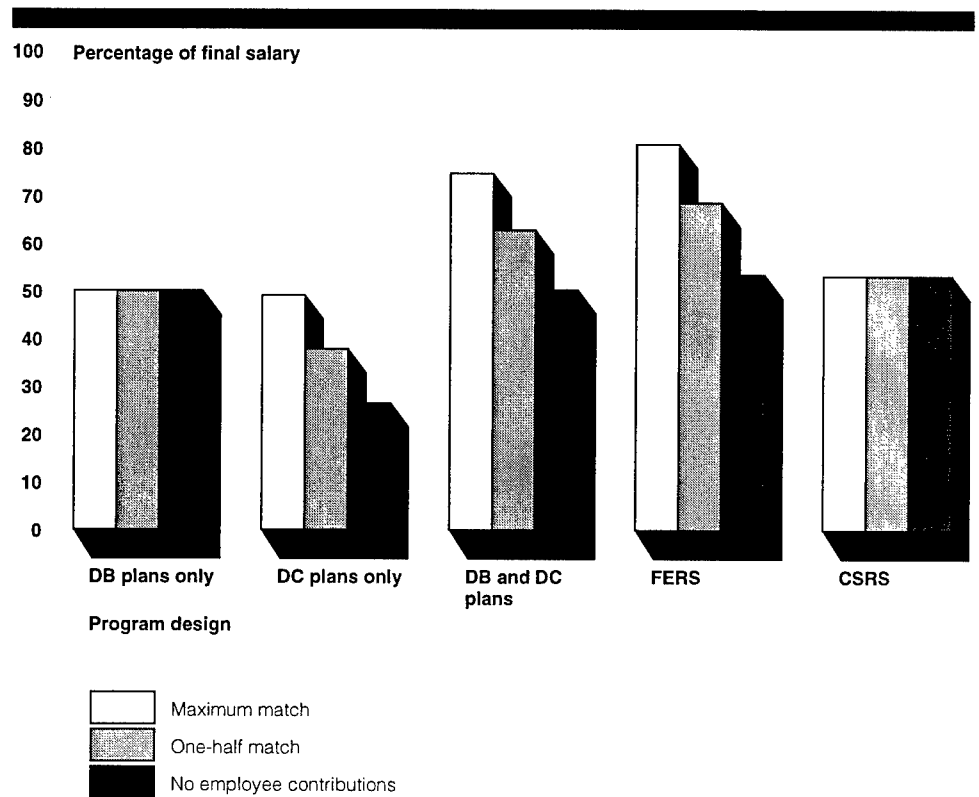
Source: Watson Wyatt Worldwide database (see tables III.3, III.8, and III.13).

When employees retire at ages 62 and 65 with 30 years of service, the replacement rates available under FERS and the average of the private sector programs that have both DB and DC plans are similar at all three levels of employee contributions as they were with 20 years of service. The relative position of the CSRS replacement rate at 30 years of service has improved. CSRS now provides a replacement rate that is similar to (1) the averages of the replacement rates available from the private sector programs with DB plans only, (2) programs with DC plans only when employees make the contributions that are needed to receive the maximum employer match, and (3) FERS and private sector programs that have both DB and DC plans when the employees make no contributions to

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their plans. CSRS has a higher replacement rate than private sector DC plans only programs when employees contribute less than the amounts needed to get the maximum employer match. However, CSRS' replacement rate remains behind the rates available from FERS and private sector programs that have DB and DC plans as long as the FERS and private sector employees make some contributions to their DC plans. (See figs. 2.14 and 2.15.)

Figure 2.14: Effect of Employee Contributions on Average Replacement Rates Available When Employees Retire at Age 62 With 30 Years of Service and a Final Salary of \$40,000



Note: These bars include the benefits gained from Social Security and any DB or DC plans to which the employer contributes.

Source: Watson Wyatt Worldwide database (see tables III.4, III.9, and III.14).

Figure 2.15: Effect of Employee Contributions on Average Replacement Rates Available When Employees Retire at Age 65 With 30 Years of Service and a Final Salary of \$40,000



Note: These bars include the benefits gained from Social Security and any DB or DC plans to which the employer contributes.

Source: Watson Wyatt Worldwide database (see tables III.5, III.10, and III.15).

Impact of Cost-of-Living Adjustment Practices on Long-Term Replacement Rates

After retirement benefits begin, inflation will erode the purchasing power of these benefits unless they are maintained by COLAS.⁵ By law, the Social Security portion of FERS and private sector retirement programs is adjusted each year. Social Security retirement benefits are increased each year by the percentage increase in the CPI, which is used for inflation adjustment purposes. However, in the DB plan portion of private sector employers' programs, wide variation exists in how COLAS are provided. The adjustments tend to be ad hoc, and their size and frequency tend to vary by employer size. The contractor we used routinely tracks the COLAS given by 50 large companies, but neither we nor the contractor are aware of any data sources that accurately track COLAS given by private sector DB plans,

⁵By their nature, the TSP and private sector DC plan benefits are not subject to cost-of-living adjustments.

overall. Using COLA data from the 50 companies, the contractor determined that employees who retired from the companies in 1985, had received, on average, a 4-percent benefit increase by 1994. These cumulative COLAS offset about 10 percent of the CPI increase during the 10-year period. For employees who retired in 1975, cumulative COLAS averaging 30 percent were given, which was about 15 percent of the CPI increase during the 20-year period from 1975 to 1994. In the absence of more complete data on DB plan COLAS, we used the 50 companies' COLA experiences to represent all private sector DB plans in calculating replacement rates available from private sector programs 10 and 20 years after retirement.

FERS does not always provide full COLAS in its DB plan. COLAS for nondisabled FERS retirees are not paid until retirees reach age 62. When paid, the COLAS are equal to the annual increase in the CPI if the price increase is 2 percent or less. The adjustment is 2 percent if the CPI increase is between 2 and 3 percent. If the CPI increase is 3 percent or greater, the adjustment is equal to the CPI increase minus 1 percent.

Like Social Security, the law calls for CSRS benefits to be adjusted annually by the percentage increase in the CPI. However, since 1980, several legislative provisions have often reduced, delayed, or skipped the scheduled CSRS COLAS. For example, in 1983, the CSRS COLA was delayed 1 month and was less than the increase in the CPI for nondisabled retirees under age 62; the 1984 COLA was delayed for 9 months; in 1986, the President and Congress decided not to grant any COLAS to federal retirees that year; and in fiscal years 1994, 1995, and 1996, the COLA payments were delayed until April of each of those years instead of the scheduled January payment dates.⁶ In 1995, we reported that the CSRS COLA delays and reductions during the 10-year period from 1985 to 1994 had caused the COLAS to cover about 80 percent of the CPI increase for the period.⁷ In figures 2.16 through 2.20, the bars labeled CSRS I represent the statutory policy of full adjustments for CSRS, and the bars labeled CSRS II represent the actual COLA practices during 1985 through 1994 when 80 percent of the CPI increase was covered.

Because of the full COLAS provided for CSRS I, its replacement rates remain the same in constant dollars, regardless of the length of retirement. In contrast, the replacement rates available from FERS and private sector programs decline in constant dollars during retirement because only the Social Security portion of these programs is fully adjusted. Similarly, the

⁶The COLA delays in 1994, 1995, and 1996 also applied to FERS retirees.

⁷Overview of Federal Retirement Programs (GAO/T-GGD-95-172, May 22, 1995).

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limitations on COLAs under CSRS II cause retirees to lose purchasing power, or receive declining replacement rates, during their retirement years.

While FERS makes greater immediate benefits available than CSRS when employees retire at age 55 with 30 years of service, FERS' smaller COLAS⁸ cause its replacement rate to fall behind the CSRS I replacement rate after 20 years of retirement (i.e., the effective FERS replacement rate is 65 percent at retirement, declines to 57 percent after 10 years, and further declines to 49 percent after 20 years in comparison to the constant CSRS I replacement rate of 53 percent at retirement and thereafter). However, the FERS replacement rates for age 55 retirees with 30 years of service continue to exceed the average replacement rates for private sector programs in the contractor's database, with both DB and DC plans that start at 45 percent, increase to 49 percent after 10 years (because of the addition of Social Security retirement benefits at age 62), and decrease to 39 percent after 20 years of retirement.⁹ The FERS replacement rate does not show an increase at 10 years after retirement because the FERS annuity supplement ceases at age 62 when Social Security retirement benefits are available. The FERS replacement rate for employees who retire at age 55 with 30 years of service also exceeds the CSRS II replacement rate after 20 years of retirement because, together, the FERS' higher replacement rate at retirement and the increases provided by COLAs in the FERS' DB plan and Social Security keep its replacement rate just above CSRS II with its COLA that covers 80 percent of the increase in the CPI.

⁸In our analysis, we assumed the rate of inflation and increase in the CPI to be 4.5 percent each year, so the FERS COLA is 3.5 percent, which is smaller than the CSRS COLA of 4.5 percent. If the rate of inflation is 2 percent or less, then the FERS and CSRS COLAs would be the same.

⁹Because the private sector programs with DB plans only were so few in number, the contractor did not calculate their effective replacement rates 10 and 20 years after retirement. Also, the COLA information available to the contractor pertained largely to programs that included both DB and DC plans.

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Figure 2.16: Average Replacement Rates Available at Retirement and 10 and 20 Years After Retirement When Employees Retire at Age 55 With 30 Years of Service and a Final Salary of \$40,000



Note 1: Social Security retirement benefits are not available at age 55. Retirees may elect to begin benefits at age 62.

Note 2: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

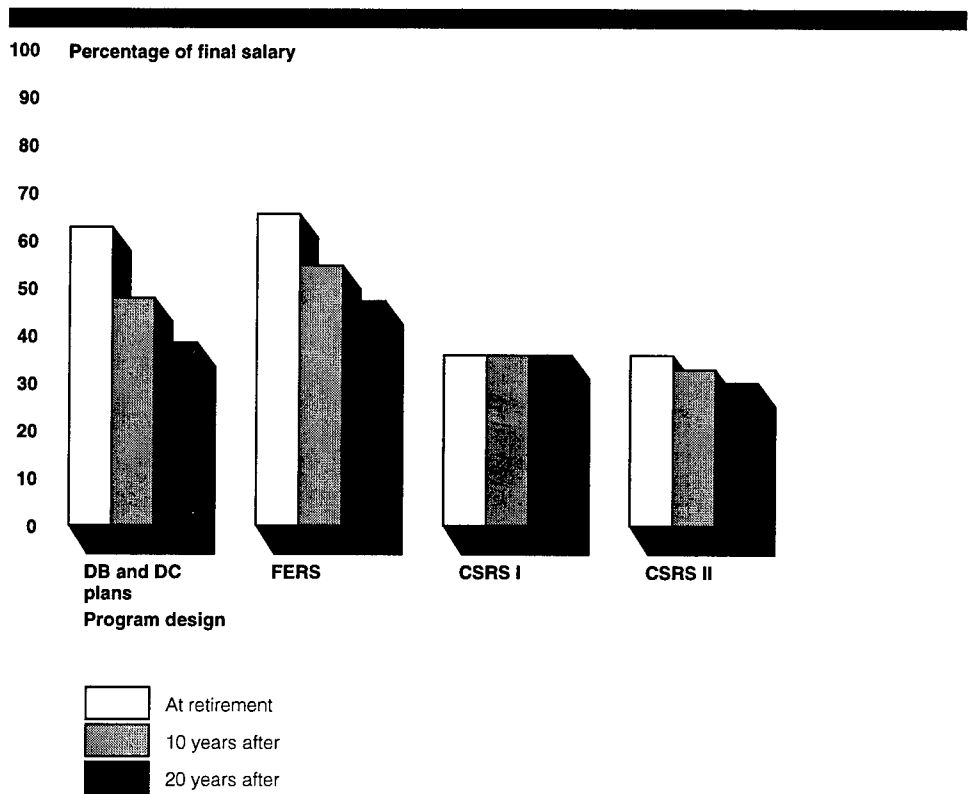
Source: Watson Wyatt Worldwide database (see table III.1).

When retirement occurs at age 62 or older, Social Security retirement benefits are available immediately upon retirement for FERS and private sector retirees. Therefore, the changes in the relative replacement rates that occur within a particular program design after retirement at age 55 do not occur at the older retirement ages. For employees who retire at ages 62 and 65 with 20 or 30 years of service, FERS starts with the highest replacement rates of all programs, and this advantage continues throughout the next 20 years. (See figs. 2.17 through 2.20.)

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When retirement occurs at age 62 or older with 20 years of service, the private sector programs in the contractor's database that have both DB and DC plans rank in the second position for the full 20 years. CSRS I stays in the third position, but moves closer to the private sector program average by the 20-year point. CSRS II remains at the bottom for the full 20 years. (See figs. 2.17 and 2.18.)

Figure 2.17: Average Replacement Rates Available at Retirement and 10 and 20 Years After Retirement When Employees Retire at Age 62 With 20 Years of Service and a Final Salary of \$40,000

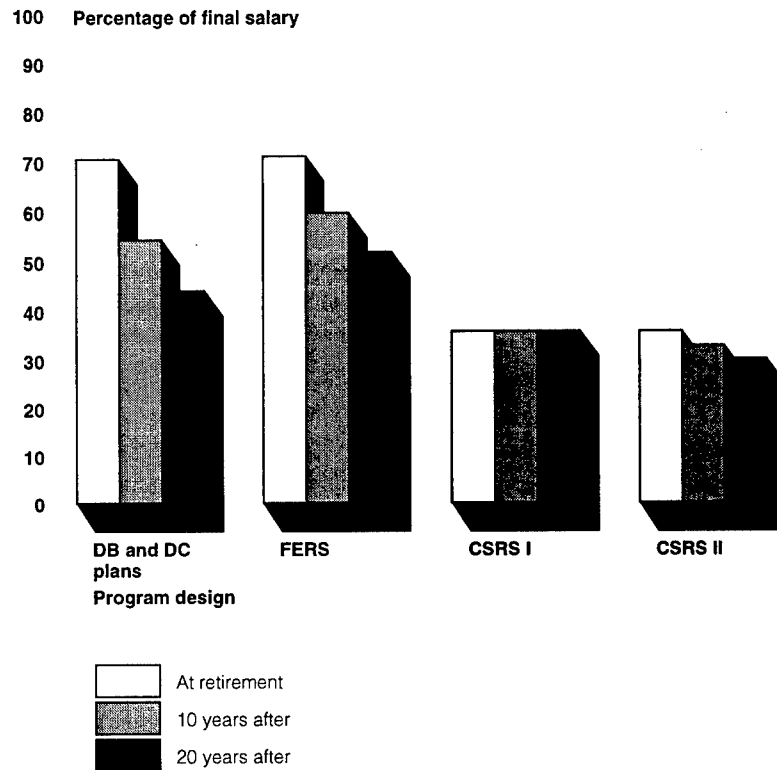


Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.2).

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Figure 2.18: Average Replacement Rates Available at Retirement and 10 and 20 Years After Retirement When Employees Retire at Age 65 With 20 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

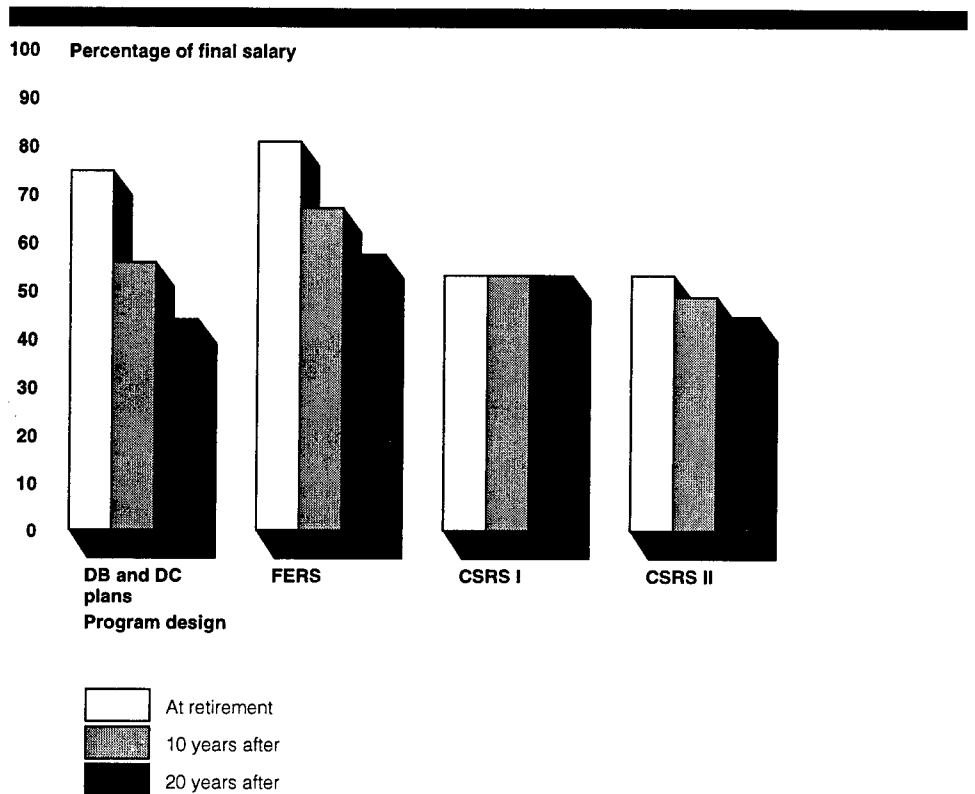
Source: Watson Wyatt Worldwide database (see table III.3).

When retirement occurs at age 62 or older with 30 years of service, the averages of the replacement rates for the private sector programs that have both DB and DC plans are higher than those for CSRS I at retirement and 10 years after retirement. However, by 20 years after retirement, the CSRS I replacement rate becomes higher than the private sector rate. The replacement rate for CSRS II remains lower than the rates for all other programs at the 10-year and 20-year points. (See figs. 2.19 and 2.20.) However, at the 20-year point, the replacement rates available are similar for employees who retire at age 62 with 30 years of service under CSRS II

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and the private sector programs that include both DB and DC plans. CSRS II's replacement rate is 44 percent, and the private sector rate is 45 percent.

Figure 2.19: Average Replacement Rates Available at Retirement and 10 and 20 Years After Retirement When Employees Retire at Age 62 With 30 Years of Service and a Final Salary of \$40,000

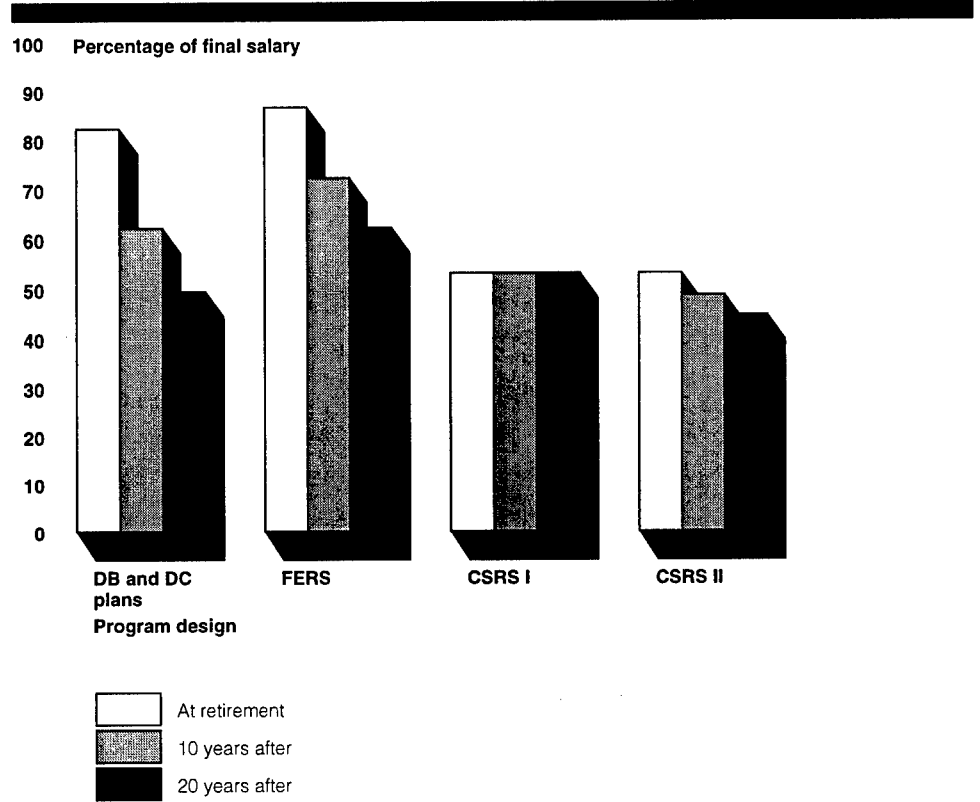


Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.4).

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Figure 2.20: Average Replacement Rates Available at Retirement and 10 and 20 Years After Retirement When Employees Retire at Age 65 With 30 Years of Service and a Final Salary of \$40,000



Note: The percentages shown were calculated using the assumption that the employee contributed the percentage of salary that is necessary to obtain the maximum employer-matching contributions.

Source: Watson Wyatt Worldwide database (see table III.5).

Comparative Features of FERS, CSRS, and Private Sector Retirement Programs

The designs of the private sector retirement programs in the contractor's database fall into the following three distinct groups: (1) programs with Social Security, a DB plan, and a DC plan; (2) programs with Social Security and DC plans only; and (3) programs with Social Security and DB plans only. The FERS program design is the same as the first group, while CSRS is different from all three groups. CSRS is solely a DB plan with no Social Security coverage. Employees in CSRS may contribute to the TSP, but the government makes no contribution to their accounts.

Along with the differing program designs, specific features of federal and private sector DB and DC plans often vary considerably from plan to plan, including the ages at which benefits are available, the formulas used to calculate benefit amounts, the amounts of contributions employees are required to pay toward plan costs, and the arrangements for determining employer contributions to DC plans.

This chapter compares and contrasts the features of FERS, CSRS, and private sector retirement programs in the contractor's database.

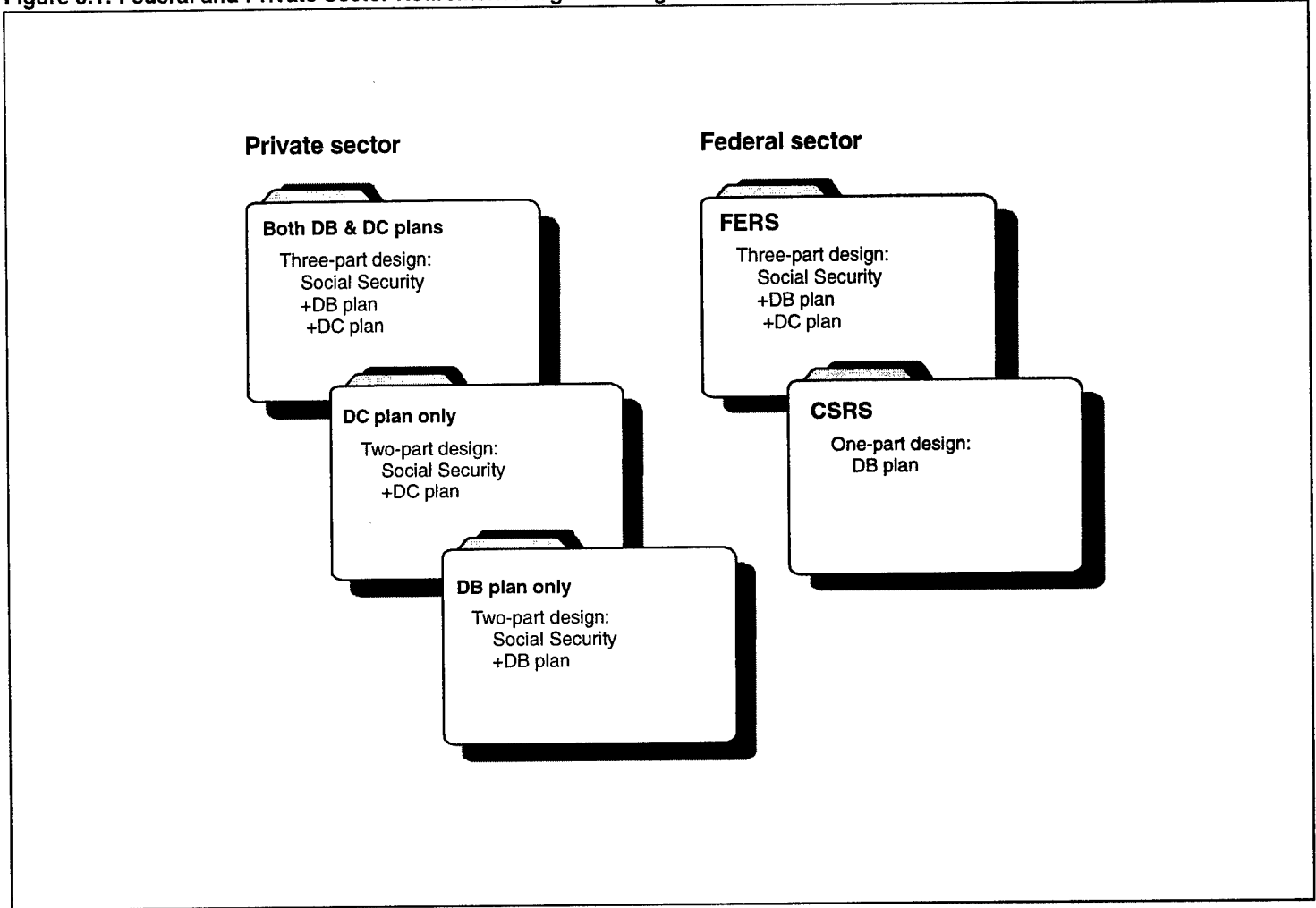
Program Designs

DB plans are offered by 75 percent of the 661 private sector employers in the contractor's database, and DC plans are offered by 93 percent of the employers. FERS includes both a DB plan and a DC plan—the TSP—to which the government and most FERS employees contribute. CSRS includes a DB plan only, but CSRS employees are allowed to contribute to the TSP. The federal government does not contribute to CSRS employees' TSP accounts. All of the private sector programs and FERS provide Social Security coverage. Employees in CSRS are not covered by Social Security through their federal employment.

In the contractor's database, 69 percent of the 661 private sector programs consisted of three parts—Social Security, DB plans, and DC plans. Another 25 percent of the programs had Social Security and DC plans only. The remaining 7 percent of the programs had Social Security and DB plans only.¹ Figure 3.1 shows the various designs of the federal and private sector programs.

¹These percentages do not add to 100 percent or to the percentages cited in the previous paragraph because of rounding.

Figure 3.1: Federal and Private Sector Retirement Program Designs



Source: GAO and the Watson Wyatt Worldwide database.

Program Features

Table 3.1 shows that the major features of FERS and CSRS, as well as private sector DB and DC plans, vary greatly. However, one specific feature alone does not reflect a retirement program's overall generosity. Rather, it is the combination of all the features working together that determines benefit amounts. For example, one DB plan may use employees' 5-year salary averages in benefit calculations, and a second DB plan may use employees' 3-year salary averages. In this case, the salary average feature in the second plan appears better because it usually would produce higher salary averages. However, the first plan could produce greater benefit amounts if

**Chapter 3
Comparative Features of FERS, CSRS, and
Private Sector Retirement Programs**

its benefit formula provided a higher percentage of the salary average for each year of service than the second plan. But, the second plan could still provide greater benefit amounts for employees who retire at age 55 if the first plan had a feature calling for reductions in accrued benefits for employees who retire at that age and if the second plan had no such feature.

Through a replacement rate analysis, as used in the retirement program comparisons presented in chapter 2, all of a program's features are considered in calculating the benefit amounts the program provides at varying ages and years of service so that meaningful comparisons with other programs can be made.

Additional details on the features of the FERS, CSRS, and private sector DB plans are presented in appendix IV. Appendix V presents details on the FERS and private sector DC plans.

Table 3.1: Major Features of FERS, CSRS, and Private Sector Retirement Programs in the Contractor's Database

Program features	Private sector^a	FERS	CSRS
Social Security	Yes	Yes	No
Require employee contributions to DB plan	Yes, 7% of plans No, 92% of plans	Yes, 0.8% of pay ^b	Yes, 7% of pay
Definition of pay for DB plan benefit calculation	Base pay, 97% Overtime, 61% Bonuses, 53% Commissions, 41% Other pay, 14%	Base pay only	Base pay only
Average pay for DB plan benefit calculations	Final 3-year average, 14% Final 5-year average, 64% Career average, 11% Other, 8%	Average of highest 3 consecutive years of base pay ("high 3")	Average of highest 3 consecutive years of base pay
Formula for calculating DB plan benefit amounts	Formulas varied so widely that they could not be meaningfully summarized or a "typical" formula described	1.1% of "high 3" for each year of service, if age 62 and 20 years of service; otherwise, 1% for each year	1.5% of "high 3" for each of the first 5 years of service, 1.75% for each of the next 5 years, and 2% for each year over 10 years
DB plan formula is integrated with Social Security	Yes, 75% of plans No, 25% of plans	No	No Social Security coverage
Unreduced DB plan benefits are available	Usually with service requirement, ^c Age 55, 10% Age 60, 14% Age 62, 27% Age 65, 43% Other, 4%	MRA ^d and 30 years of service Age 60 and 20 years Age 62 and 5 years	Age 55 and 30 years of service Age 60 and 20 years Age 62 and 5 years

(continued)

**Chapter 3
Comparative Features of FERS, CSRS, and
Private Sector Retirement Programs**

Program features	Private sector^a	FERS	CSRS
Reduced DB plan benefits are available at employee's option	Less than age 55, 8% Age 55 and 10 years or less, 69% Age 55 and more than 10 years, 13% Other, 7%	MRA and 10 years of service	None
Postretirement increases in DB plan amounts	At least once during 1983-92, Yes, 43% No, 44%	Annual adjustments payable only to retirees age 62 or older, unless they are disability or survivor annuitants. Adjustments, unless limited by law, are equal to (1) the increase in the CPI, if the CPI increases 2 percent or less; (2) 2 percent, if the CPI increases between 2 and 3 percent; and (3) the CPI increase minus 1 percent, if the CPI increases 3 percent or more.	Annual adjustments fully indexed to the CPI for all annuitants, unless limited by law
Tax advantages to employee in the DC plan	Yes, 93% had employee contributions under a Section 401(k) or 403(b) feature No, 5%	Yes, up to 10% of pay on a pretax basis	Yes, up to 5% of pay on a pretax basis
Employer contributions to DC plan	Matching only, ^e 65% Nonmatching only, 11% Both matching and nonmatching, ^e 17% Other, 2%	For all FERS employees, 1% of pay. Plus, 100% matching on the first 3% of pay that employee contributes and 50% matching on the next 2% of pay.	No employer contributions

^aThe percentages for some features may total less than 100 percent because of rounding or because some employers did not provide information on a particular feature. Percentages for other features may total more than 100 percent because multiple responses could be given.

^bThe required contribution is 7 percent of pay minus the contribution of 6.2 percent of pay to Social Security.

^cEighty-two percent of the programs had service requirements. These requirements ranged from 5 to 35 years of service when the employee retires at age 55, from 1 to 40 years at ages 60 and 62, and from 1 to 10 years at age 65.

^dMRA is the minimum optional retirement age, which ranges from age 55 to age 57 and is based on the employee's date of birth.

^eFor programs with employer-matching contributions, the median match was 50 percent of employee contributions up to 6 percent of pay.

Source: Watson Wyatt Worldwide database (see apps. IV and V).

Conclusions and Agency and Contractor Comments

Conclusions

There is no definitive answer to the question of whether federal retirement programs offer greater or smaller benefits than private sector programs. Depending on individual retirees' circumstances and how they interact with the retirement programs' designs, the benefits available from FERS and CSRS can be smaller, similar, or greater than benefits available from the private sector programs in the contractor's database.

For example, CSRS benefits are greater than the benefits available from the private sector programs in the contractor's database when employees retire before age 62. However, for employees who retire at age 62 or older with 20 years of service, CSRS benefits at retirement are smaller than the benefits available from private sector programs in the database of all designs. After 20 years of retirement, CSRS benefits for age 62 or older retirees who retired with 20 years of service are still behind the private sector programs that have both DB and DC plans, even though the COLA provision in CSRS provides greater increases in benefits over time than private sector programs.

CSRS replacement rates are greater than those available in the private sector when employees retire at age 55 principally because private sector DB plans generally impose reductions in accrued benefits for employees who retire at that age. CSRS imposes no such reductions; but it does permit employees to retire at age 55 under regular retirement provisions only if they have 30 or more years of service. Therefore, CSRS limits age 55 retirement eligibility to long-term, career employees. The average private sector program has no similar design feature, although the average program allows employees to retire on reduced benefits at age 55 with fewer than 30 years of service—a feature that does not exist in CSRS. Most federal employees do not have 30 years of service by the time they are age 55, and, of those who do, many elect to retire later. As a result, the average CSRS retirement age is about 62.

The lack of Social Security coverage for employees in CSRS is a major reason why the private sector programs in the contractor's database can provide higher replacement rates to employees who retire at age 62 or older. Moreover, CSRS employees do not participate in a DC plan to which their employer contributes. As this report shows, most private sector programs in the contractor's database included DC plans to which their employers contribute and from which employees can earn significant benefit amounts.

CSRS was closed to new entrants at the end of 1983 and was replaced by FERS—a completely restructured federal retirement program. FERS follows the model used by most of the private sector employers in the contractor's database: a three-part retirement package that includes Social Security, a DB plan, and a DC plan. As our findings illustrate, the FERS benefits from Social Security, the DB plan, and the government's automatic 1-percent contribution to the TSP alone are smaller than CSRS benefits for employees who retire at age 55. However, these FERS benefits can be greater than CSRS benefits for employees who retire at age 62 or older, even though FERS employees generally contribute the same total percentage of their salaries toward the cost of these benefits as CSRS employees contribute. By contributing to their DC plan, FERS employees can obtain greater benefits than are available from CSRS at all ages, but they will pay more to receive the greater benefit amounts.

FERS continued CSRS' objective of encouraging employees to spend their working careers in federal service by making unreduced benefits available at age 55 only to employees who serve 30 or more years with the government. Consistent with this objective, FERS also provides an annuity supplement to career employees who retire before Social Security benefits are otherwise available. This feature is not commonly found in private sector programs and, along with the lack of reductions in accrued DB plan benefits for age 55 retirees in federal programs, the feature causes FERS replacement rates available at age 55 to exceed the replacement rates available from the private sector programs of all designs in the contractor's database. However, as with CSRS, FERS employees generally have been older than age 55 when they retired. FERS was designed to encourage, but not to require, longer careers by raising the age of earliest retirement eligibility to age 57 for employees born after 1969 and by increasing the DB plan benefit formula for employees who continue working to at least age 62.

For employees who retire at age 62 or older, the total benefits available at retirement from all three parts of FERS are quite comparable to the average benefits available from private sector programs in the contractor's database that also have DB and DC plans in addition to Social Security. Because the COLA provision in the FERS' DB plan provides greater increases in benefits over time than do private sector DB plans on average, FERS retirees will fare better in times of high inflation when increases in the CPI will be greater. However, the FERS COLA does not fully maintain retirees' purchasing power and, thereby, represents a reduction from the inflation protection intended for CSRS retirees.

Agency and Contractor Comments and Our Evaluation

Watson Wyatt Worldwide and the Federal Retirement Thrift Investment Board provided oral comments on the draft of this report, and OPM provided written comments. All of the officials agreed with our conclusion that there is no definitive answer to the question of whether federal retirement programs offer greater or smaller benefits than private sector programs. The Thrift Board and OPM officials noted that it is very difficult to compare varied federal and private sector retirement programs. They said, and we agree, that our analyses and conclusions are dependent on (1) the database used; (2) the age and service characteristics of the illustrative employees; and (3) the assumptions made about salary histories, return on investments, the conversion of defined contribution plan amounts at retirement to annuities, and the rate of inflation.

We believe that the database and illustrative employees used and the assumptions made are reasonable because they either were those used by OPM in its latest actuarial valuations, were based on standards used in the benefits field, or were necessary to provide a common basis of comparison. We modified the executive summary and chapter 1 of this report to clarify that the use of different databases, illustrative employees, and assumptions would have changed the relative magnitude of benefits available among retirement programs as well as the levels of benefits provided by all programs. Using such data could possibly, in some circumstances, change the relative rankings between programs. However, while we believe that no one database or set of assumptions could fully capture the range of private sector programs and employees' experiences, we also believe that using different databases and assumptions would not have changed our conclusion that no definitive answer exists to the question of whether federal programs offer greater or smaller benefits than private sector programs.

OPM also commented that our analyses and conclusions might be better understood if additional information on the database, illustrative employees, and the assumptions were provided in the report (i.e., the executive summary and chapter 1 of the report). OPM expressed concern that we had implied in the executive summary that variations in retirement benefits result from employee decisions and situations, while the body of the report made it clear that the variations result from the structural differences between retirement programs. We agree that the variations in benefits available did not result solely from employee choices and have modified the executive summary to reflect that it is the interactions between factors, such as employees' ages, years of service, and DC plan

contribution behavior, and the varying designs and provisions of the retirement programs that affect the comparisons among programs.

OPM also said that while it is difficult to include every material item in the executive summary, some significant information contained in the body of the report was not included in the executive summary. OPM mentioned the following: (1) that private sector salaries used in calculating retirement benefits often include overtime and bonuses, (2) that a meaningful "typical" retirement benefit formula does not exist for the private sector, and (3) that retirement program designs vary considerably between large and small private sector companies. We agree that it was difficult to include all information in the executive summary and, as noted previously, have modified the executive summary to clarify that the use of different databases, illustrative employees, and assumptions would have changed the relative magnitude of benefits available among retirement programs, the levels of benefits provided by all programs, and could, in some circumstances, change the relative rankings between programs. We have modified the executive summary to specifically mention that many private sector programs use overtime, bonuses, or commissions in their benefit calculations. We have modified the objective, scope, and methodology section of chapter 1 to include that (1) the salary histories include base pay only, (2) benefit calculations in many of the private sector programs in the contractor's database would include other types of compensation in addition to base pay, and (3) had we assumed other types of compensation in addition to the base pay represented in the salary histories, the averages of the replacement rates from the private sector programs would have increased. We also deleted the footnote in chapter 2 to which OPM referred.

We agree that not being able to identify a typical benefit formula is significant. It is one of the major reasons why we selected the replacement rate analysis as our method of comparison and had the contractor separately calculate and then average the benefits available from each of the 435 retirement programs in the private sector database.

We agree with OPM that retirement program designs vary considerably and say this in the executive summary. We also agree that program designs vary by employer size and have discussed this in an earlier GAO report.¹ Our methodology did not include analyses by employer size because the contractor's database included primarily large employers.

¹GAO/GGD-97-1.

Chapter 4
Conclusions and Agency and Contractor
Comments

The contractor and the Thrift Board also provided editorial and technical comments that we incorporated in the report as appropriate.

FERS, CSRS, and Watson Wyatt Worldwide Database Statistics

Table I.1: Number of Participants in FERS and CSRS at the Beginning of Fiscal Year 1995

Participants	FERS	CSRS	Total
Employees:			
Active ^a	1,375,000	1,443,000	2,818,000
Former ^b	89,000	26,000	115,000
Total employees	1,464,000	1,469,000	2,933,000
Annuitants:			
Retirees	44,900	1,652,000	1,696,900
Survivors	3,100	610,000	613,100
Total annuitants	48,000	2,262,000	2,310,000
Total participants	1,512,000	3,731,000	5,243,000

^aNumber of employees determined on a full-time equivalent basis. These numbers include employees on leave without pay who retain coverage.

^bFormer employees are employees who separated before eligibility for immediate retirement benefits, but who are entitled to deferred benefits.

Source: United States Office of Personnel Management, Annual Report of the Civil Service Retirement and Disability Fund for Fiscal Year 1995 (May 1996).

Table I.2: Sizes of the Private Sector Employers in the Contractor's Database as of October 1995

Number of employees	Percentage of all employers in database	Percentage of employers whose program benefits could be valued		
		DB plans only	DC plans only	DB and DC plans
499 or fewer	9	28	9	6
500 to 999	10	4	12	6
1,000 to 2,499	22	24	26	20
2,500 to 4,999	16	24	19	13
5,000 to 9,999	11	8	15	13
10,000 or more	30	12	17	40
No response	2	0	2	2
Number of employers	661	25	106	304

Note: The Watson Wyatt Worldwide 1993 COMPARISON database had 661 employers. Of those 661, 435 employers contributed to their plans and provided sufficient information so that the benefits could be valued.

Source: Watson Wyatt Worldwide database.

**Appendix I
FERS, CSRS, and Watson Wyatt Worldwide
Database Statistics**

Table I.3: Sizes in Percentiles, Median, and Mean for Private Sector Employers in the Contractor's Database as of October 1995

Percentiles, median, and mean	All employers in database (number of employees)	Employers whose program benefits could be valued (number of employees)		
		DB plans only	DC plans only	DB and DC plans
25th percentile	1,232	415	1,050	1,672
50th percentile (median)	3,500	2,020	2,700	6,000
75th percentile	13,000	3,925	6,000	18,724
Mean	15,148	3,691	7,410	20,003

Source: Watson Wyatt Worldwide database.

Table I.4: Industry Classifications of Private Sector Employers in the Contractor's Database as of October 1995

Industry	Percentage of all employers in database	Percentage of employers whose program benefits could be valued		
		DB plans only	DC plans only	DB and DC plans
Manufacturing - durable goods	27	4	32	28
Manufacturing - nondurable goods	18	16	19	21
Financial services	15	4	12	20
Insurance and real estate	11	8	2	18
Services	11	8	22	9
Health care	8	52	8	4
Nonprofit and public organizations	8	24	8	2
Retail and wholesale	7	12	11	5
Utilities	7	0	0	8
Energy and natural resources	5	4	2	7
Transportation	2	0	1	2
Construction	^a	0	1	^a
No response	1	0	2	^a
Number of employers	661	25	106	304

Note: Multiple responses were permitted. Therefore, percentages total more than 100 percent.

^aLess than 0.5 percent.

Source: Watson Wyatt Worldwide database.

Appendix I
FERS, CSRS, and Watson Wyatt Worldwide
Database Statistics

table I.5: Geographic Locations of Private Sector Employers in the Contractor's Database as of October 1995

Region	Percentage of all employers in database	Percentage of employers whose program benefits could be valued		
		DB plans only	DC plans only	DB and DC plans
Midwest	44	36	36	49
Northeast	37	28	32	40
Southeast	33	24	30	35
Pacific	30	8	44	27
West south central	20	20	21	21
Mountain	12	4	16	11
No response	2	0	1	2
Number of employers	661	25	106	304

Note 1: Geographic locations refer to a region(s) in which the employer has at least 1,000 employees or 10 percent of its workforce.

Note 2: Multiple responses were permitted. Therefore, percentages total more than 100 percent.

Source: Watson Wyatt Worldwide database.

table I.6: Retirement Program Designs of Private Sector Employers in the Contractor's Database as of October 1995

Retirement plans offered	All employers in database		Employers whose program benefits could be valued	
	Number	Percent ^a	Number	Percent
DB plans only	44	7	25	6
DC plans only	164	25	106	24
Both DB and DC plans	453	69	304	70
Number of employers	661	100	435	100

Note: The total number of employers whose program benefits could be valued remained the same between October 1995 and January 1997 when the additional replacement rate analyses were provided under the CBO contract. However, the numbers in each category changed. As of January 1997, 23 of the 435 employers had DB plans only, 109 of the employers had DC plans only, and 303 of the employers had both DB and DC plans.

^aThese percentages do not add to 100 percent because of rounding.

Source: Watson Wyatt Worldwide database.

Salary Histories Used in Pension Plan and Social Security Benefit Calculations

To calculate retirement benefit amounts available from Social Security and individual employers' DB and DC plans, a number of factors must be taken into account. A primary factor is an employee's salary history. Most DB plans base benefits on employees' average annual salaries received in the final years of employment, such as the last 3 or 5 years. Some use the average of the annual salaries that employees received during their entire careers with an employer. Salary histories are also necessary to determine the total amounts that employees and employers could contribute to DC plans over employees' working years, as well as to calculate the Social Security benefits earned while working for a particular employer.

For all of the illustrative employees used in this report to show the relative benefit amounts available from FERS, CSRS, and private sector retirement programs, we assumed the employees began working in 1995 and worked throughout the specified periods (20 or 30 years) under each program used in the comparisons. We developed employee salary histories that resulted in final salaries equivalent in 1995 dollars to \$25,000, \$40,000, and \$60,000. The \$25,000 salary history has the slowest rate of growth and was selected to represent the experiences of employees at lower salary levels. The \$40,000 salary history was selected to represent the experiences of the "typical" federal employee because employees retiring under the optional retirement provisions of CSRS and FERS in 1995 had final salaries averaging about \$40,000. The \$60,000 salary history has the fastest rate of growth and was selected to represent the experiences of higher-paid employees. The three salary histories are presented in tables II.1, II.2, and II.3.

Appendix II
Salary Histories Used in Pension Plan and
Social Security Benefit Calculations

Table II.1: Salary History With a Final Salary That Is Equivalent to a \$25,000 Salary in 1995

Year	30-year career	20-year career
1	\$12,234	\$21,572
2	15,322	23,179
3	16,562	25,703
4	18,327	27,198
5	20,834	30,132
6	22,879	33,148
7	25,099	35,843
8	26,997	37,337
9	29,216	38,403
10	30,917	40,003
11	33,500	41,454
12	35,996	42,606
13	39,915	43,923
14	42,238	44,820
15	46,793	47,999
16	51,478	49,791
17	55,663	51,920
18	57,982	55,620
19	59,639	57,697
20	62,124	57,697
21	64,377	n/a
22	66,165	n/a
23	68,211	n/a
24	69,603	n/a
25	74,540	n/a
26	77,324	n/a
27	80,630	n/a
28	86,375	n/a
29	89,601	n/a
30	89,601	n/a

Legend: n/a = not applicable

Source: GAO generated.

Appendix II
Salary Histories Used in Pension Plan and
Social Security Benefit Calculations

Table II.2: Salary History With a Final Salary That Is Equivalent to a \$40,000 Salary in 1995

Year	30-year career	20-year career
1	\$16,809	\$34,447
2	18,826	37,202
3	21,067	39,992
4	23,405	42,872
5	25,839	45,873
6	28,371	48,992
7	30,925	52,226
8	33,646	55,568
9	36,506	59,013
10	39,536	62,554
11	42,660	66,120
12	45,944	69,756
13	49,436	73,384
14	53,094	76,906
15	56,917	80,136
16	61,015	83,021
17	65,408	86,010
18	70,118	89,106
19	75,166	92,314
20	80,052	92,314
21	84,855	n/a
22	89,946	n/a
23	95,343	n/a
24	101,064	n/a
25	107,128	n/a
26	113,555	n/a
27	120,369	n/a
28	127,591	n/a
29	135,246	n/a
30	143,361	n/a

Legend: n/a = not applicable

Source: GAO generated.

**Appendix II
Salary Histories Used in Pension Plan and
Social Security Benefit Calculations**

**Table II.3: Salary History With a Final
Salary That Is Equivalent to a \$60,000
Salary in 1995**

Year	30-year career	20-year career
1	\$17,505	\$48,407
2	22,330	52,389
3	28,602	56,332
4	31,079	61,364
5	40,034	65,982
6	44,010	73,988
7	54,303	80,309
8	60,355	86,352
9	65,443	89,051
10	71,416	92,761
11	75,174	99,037
12	81,358	99,037
13	87,481	105,103
14	95,295	107,248
15	102,468	115,027
16	114,900	119,323
17	124,717	124,424
18	134,102	133,487
19	138,293	138,472
20	144,055	138,472
21	153,801	n/a
22	153,801	n/a
23	163,222	n/a
24	166,553	n/a
25	178,633	n/a
26	185,304	n/a
27	193,226	n/a
28	207,301	n/a
29	215,042	n/a
30	215,042	n/a

Legend: n/a = not applicable

Source: GAO generated.

**Appendix II
Salary Histories Used in Pension Plan and
Social Security Benefit Calculations**

**Social Security
Benefits Produced by
Salary Histories**

Table II.4 shows the Social Security benefit amounts earned by FERS and private sector employees with the above salary histories and years of service, assuming the employees had no Social Security-covered employment with any other employer before or after retirement.

Table II.4: Percentage of Final Salary Replaced by Social Security Benefits in FERS and the Private Sector Programs

Age and years of service at retirement	Social Security replacement rates (percentage)		
	\$25,000 final average salary in 1995 dollars	\$40,000 final average salary in 1995 dollars	\$60,000 final average salary in 1995 dollars
Age 55 with 30 years of service ^a	25.3	19.2	16.9
Age 62 with 20 years of service	22.5	19.0	16.3
Age 65 with 20 years of service	27.1	23.0	19.6
Age 62 with 30 years of service	25.3	19.2	16.9
Age 65 with 30 years of service	30.3	23.1	20.6

Note: The replacement rates were determined using an assumption that the Social Security salary ceiling (the amount of earnings to which Social Security contributions and benefit calculations apply) will increase by 4.5 percent each year—the same projected rate of salary growth that OPM used in its actuarial valuations of CSRS and FERS.

^aSocial Security benefits were assumed to be payable at age 62 for retirements before age 62 and were adjusted for the 7 years of 4.5-percent inflation between the ages of 55 and 62.

Source: Watson Wyatt Worldwide database.

Results of the Replacement Rate Analysis

Table III.1: Average Replacement Rates Available With Maximum Employer Contributions to DC Plans - Age 55 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.0		22.2	41.6	55.6
DC plan		32.0	29.6	33.4	
Social Security					
Total	20.0	32.0	51.8	75.0	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	19.0		21.1	37.4	53.1
DC plan		26.0	24.1	27.2	
Social Security					
Total	19.0	26.0	45.2	64.6	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	20.8		23.4	37.8	55.6
DC plan		29.0	27.0	30.4	
Social Security					
Total	20.8	29.0	50.4	68.2	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector	Federal			Private sector	Federal		
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.0	21.2	55.6	51.0	10.5	19.3	55.6	46.8
19.1	21.5			12.3	13.8		
25.3	25.3			25.3	25.3		
59.4	68.0	55.6	51.0	48.1	58.4	55.6	46.8
14.2	20.2	53.1	48.7	10.0	18.4	53.1	44.7
15.5	17.5			10.0	11.3		
19.2	19.2			19.2	19.2		
48.9	56.9	53.1	48.7	39.2	48.9	53.1	44.7
15.8	21.2	55.6	51.0	11.1	19.3	55.6	46.8
17.4	19.6			11.2	12.6		
16.9	16.9			16.9	16.9		
50.1	57.7	55.6	51.0	39.2	48.8	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some column cells show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.2: Average Replacement Rates Available With Maximum Employer Contributions to DC Plans - Age 62 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.2		21.0	21.7	35.8
DC plan		24.1	22.3	25.2	
Social Security	22.5	22.5	22.5	22.5	
Total	42.7	46.6	65.8	69.4	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	21.0		21.7	21.7	35.8
DC plan		23.7	22.0	24.8	
Social Security	19.0	19.0	19.0	19.0	
Total	40.0	42.7	62.7	65.5	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	21.6		23.1	21.8	35.8
DC plan		23.0	21.4	24.2	
Social Security	16.3	16.3	16.3	16.3	
Total	37.9	39.3	60.8	62.3	35.8

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
14.1	19.7	35.8	32.8	10.0	17.9	35.8	30.1
14.4	16.2			9.2	10.4		
22.5	22.5			22.5	22.5		
51.0	58.4	35.8	32.8	41.7	50.8	35.8	30.1
14.6	19.7	35.8	32.8	10.3	17.9	35.8	30.1
14.2	16.0			9.1	10.3		
19.0	19.0			19.0	19.0		
47.8	54.7	35.8	32.8	38.4	47.2	35.8	30.1
15.6	19.8	35.8	32.8	11.0	18.0	35.8	30.1
13.8	15.6			8.9	10.0		
16.3	16.3			16.3	16.3		
45.7	51.7	35.8	32.8	36.2	44.3	35.8	30.1

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.3: Average Replacement Rates Available With Maximum Employer Contributions to DC Plans - Age 65 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	23.0		22.8	21.8	35.8
DC plan		25.6	23.7	26.8	
Social Security	27.1	27.1	27.1	27.1	
Total	50.1	52.7	73.6	75.7	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	24.1		24.0	21.7	35.8
DC plan		25.2	23.5	26.4	
Social Security	23.0	23.0	23.0	23.0	
Total	47.1	48.2	70.5	71.1	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	25.0		25.4	21.7	35.9
DC plan		24.5	22.8	25.8	
Social Security	19.6	19.6	19.6	19.6	
Total	44.6	44.1	67.8	67.1	35.9

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.4	19.8	35.8	32.8	10.8	18.0	35.8	30.1
15.3	17.3			9.8	11.1		
27.1	27.1			27.1	27.1		
57.8	64.2	35.8	32.8	47.7	56.2	35.8	30.1
16.2	19.7	35.8	32.8	11.4	17.9	35.8	30.1
15.1	17.0			9.7	10.9		
23.0	23.0			23.0	23.0		
54.3	59.7	35.8	32.8	44.1	51.8	35.8	30.1
17.1	19.7	35.9	32.9	12.0	17.9	35.9	30.2
14.7	16.6			9.5	10.7		
19.6	19.6			19.6	19.6		
51.4	55.9	35.9	32.9	41.1	48.2	35.9	30.2

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.4: Average Replacement Rates Available With Maximum Employer Contributions to DC Plans - Age 62 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	32.3		30.8	32.6	55.6
DC plan		36.6	32.1	37.2	
Social Security	25.3	25.3	25.3	25.3	
Total	57.6	61.9	88.2	95.1	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	30.8		29.3	31.2	53.2
DC plan		29.8	26.2	30.4	
Social Security	19.2	19.2	19.2	19.2	
Total	50.0	49.0	74.7	80.8	53.2
Average replacement rates at final salary of \$60,000:					
DB plan	34.2		33.5	32.6	55.6
DC plan		33.1	29.3	34.0	
Social Security	16.9	16.9	16.9	16.9	
Total	51.1	50.0	79.7	83.5	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
20.7	29.6	55.6	51.0	14.6	26.9	55.6	46.8
20.7	24.0			13.3	15.4		
25.3	25.3			25.3	25.3		
66.7	78.9	55.6	51.0	53.2	67.6	55.6	46.8
19.7	28.3	53.2	48.8	13.9	25.7	53.2	44.7
16.9	19.6			10.9	12.6		
19.2	19.2			19.2	19.2		
55.8	67.1	53.2	48.8	44.0	57.5	53.2	44.7
22.6	29.6	55.6	51.0	15.9	26.9	55.6	46.8
18.9	21.9			12.1	14.1		
16.9	16.9			16.9	16.9		
58.4	68.4	55.6	51.0	44.9	57.9	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.5: Average Replacement Rates Available With Maximum Employer Contributions to DC Plans - Age 65 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	36.2		32.7	32.6	55.6
DC plan		38.9	34.2	39.6	
Social Security	30.3	30.3	30.3	30.3	
Total	66.5	69.2	97.2	102.5	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	34.7		31.3	31.2	53.1
DC plan		31.7	27.9	32.4	
Social Security	23.1	23.1	23.1	23.1	
Total	57.8	54.8	82.3	86.7	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	38.7		36.1	32.6	55.6
DC plan		35.3	31.2	36.2	
Social Security	20.6	20.6	20.6	20.6	
Total	59.3	55.9	87.9	89.4	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
22.0	29.6	55.6	51.0	15.5	26.9	55.6	46.8
22.0	25.5			14.2	16.4		
30.3	30.3			30.3	30.3		
74.3	85.4	55.6	51.0	60.0	73.6	55.6	46.8
21.1	28.3	53.1	48.7	14.8	25.7	53.1	44.7
18.0	20.9			11.6	13.4		
23.1	23.1			23.1	23.1		
62.2	72.3	53.1	48.7	49.5	62.2	53.1	44.7
24.3	29.6	55.6	51.0	17.1	26.9	55.6	46.8
20.1	23.3			12.9	15.0		
20.6	20.6			20.6	20.6		
65.0	73.5	55.6	51.0	50.6	62.5	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

**Appendix III
Results of the Replacement Rate Analysis**

Table III.6: Average Replacement Rates Available With One-half of the Maximum Employer Contributions to DC Plans - Age 55 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.0		22.2	41.6	55.6
DC plan		20.0	16.3	20.0	
Social Security					
Total	20.0	20.0	38.5	61.6	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	19.0		21.1	37.4	53.1
DC plan		16.3	13.3	16.3	
Social Security					
Total	19.0	16.3	34.4	53.7	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	20.8		23.4	37.8	55.6
DC plan		18.2	14.8	18.3	
Social Security					
Total	20.8	18.2	38.2	56.1	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.0	21.2	55.6	51.0	10.5	19.3	55.6	46.8
10.5	12.9			6.8	8.3		
25.3	25.3			25.3	25.3		
50.8	59.4	55.6	51.0	42.6	52.9	55.6	46.8
14.2	20.2	53.1	48.7	10.0	18.4	53.1	44.7
8.6	10.5			5.5	6.8		
19.2	19.2			19.2	19.2		
42.0	49.9	53.1	48.7	34.7	44.4	53.1	44.7
15.8	21.2	55.6	51.0	11.1	19.3	55.6	46.8
9.5	11.8			6.1	7.6		
16.9	16.9			16.9	16.9		
42.2	49.9	55.6	51.0	34.1	43.8	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

**Appendix III
Results of the Replacement Rate Analysis**

Table III.7: Average Replacement Rates Available With One-half of the Maximum Employer Contributions to DC Plans - Age 62 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.2		21.0	21.7	35.8
DC plan		15.1	12.3	15.1	
Social Security	22.5	22.5	22.5	22.5	
Total	42.7	37.6	55.8	59.3	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	21.0		21.7	21.7	35.8
DC plan		14.9	12.2	14.9	
Social Security	19.0	19.0	19.0	19.0	
Total	40.0	33.9	52.9	55.6	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	21.6		23.1	21.8	35.8
DC plan		14.4	11.8	14.6	
Social Security	16.3	16.3	16.3	16.3	
Total	37.9	30.7	51.2	52.7	35.8

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
14.1	19.7	35.8	32.8	10.0	17.9	35.8	30.1
7.9	9.7			5.1	6.3		
22.5	22.5			22.5	22.5		
44.5	51.9	35.8	32.8	37.6	46.7	35.8	30.1
14.6	19.7	35.8	32.8	10.3	17.9	35.8	30.1
7.9	9.6			5.1	6.2		
19.0	19.0			19.0	19.0		
41.5	48.3	35.8	32.8	34.4	43.1	35.8	30.1
15.6	19.8	35.8	32.8	11.0	18.0	35.8	30.1
7.6	9.4			4.9	6.1		
16.3	16.3			16.3	16.3		
39.5	45.5	35.8	32.8	32.2	40.4	35.8	30.1

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.8: Average Replacement Rates Available With One-half of the Maximum Employer Contributions to DC Plans - Age 65 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	23.0		22.8	21.8	35.8
DC plan		16.0	13.1	16.1	
Social Security	27.1	27.1	27.1	27.1	
Total	50.1	43.1	63.0	65.0	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	24.1		24.0	21.7	35.8
DC plan		15.8	12.9	15.9	
Social Security	23.0	23.0	23.0	23.0	
Total	47.1	38.8	59.9	60.6	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	25.0		25.4	21.7	35.9
DC plan		15.4	12.6	15.5	
Social Security	19.6	19.6	19.6	19.6	
Total	44.6	35.0	57.6	56.8	35.9

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.4	19.8	35.8	32.8	10.8	18.0	35.8	30.1
8.4	10.4			5.4	6.7		
27.1	27.1			27.1	27.1		
50.9	57.3	35.8	32.8	43.3	51.8	35.8	30.1
16.2	19.7	35.8	32.8	11.4	17.9	35.8	30.1
8.3	10.2			5.3	6.6		
23.0	23.0			23.0	23.0		
47.5	52.9	35.8	32.8	39.7	47.5	35.8	30.1
17.1	19.7	35.9	32.9	12.0	17.9	35.9	30.2
8.1	10.0			5.2	6.4		
19.6	19.6			19.6	19.6		
44.8	49.3	35.9	32.9	36.8	43.9	35.9	30.2

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.9: Average Replacement Rates Available With One-half of the Maximum Employer Contributions to DC Plans - Age 62 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	32.3		30.8	32.6	55.6
DC plan		22.8	17.5	22.3	
Social Security	25.3	25.3	25.3	25.3	
Total	57.6	48.1	73.6	80.2	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	30.8		29.3	31.2	53.2
DC plan		18.6	14.3	18.2	
Social Security	19.2	19.2	19.2	19.2	
Total	50.0	37.8	62.8	68.6	53.2
Average replacement rates at final salary of \$60,000:					
DB plan	34.2		33.5	32.6	55.6
DC plan		20.7	15.9	20.4	
Social Security	16.9	16.9	16.9	16.9	
Total	51.1	37.6	66.3	69.9	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector				Private sector			
DB and DC plans	Federal			DB and DC plans	Federal		
	FERS	CSRS I	CSRS II		FERS	CSRS I	CSRS II
20.7	29.6	55.6	51.0	14.6	26.9	55.6	46.8
11.3	14.4			7.3	9.2		
25.3	25.3			25.3	25.3		
57.3	69.3	55.6	51.0	47.2	61.4	55.6	46.8
19.7	28.3	53.2	48.8	13.9	25.7	53.2	44.7
9.2	11.7			5.9	7.5		
19.2	19.2			19.2	19.2		
48.1	59.2	53.2	48.8	39.0	52.4	53.2	44.7
22.6	29.6	55.6	51.0	15.9	26.9	55.6	46.8
10.2	13.1			6.6	8.5		
16.9	16.9			16.9	16.9		
49.7	59.6	55.6	51.0	39.4	52.3	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.10: Average Replacement Rates Available With One-half of the Maximum Employer Contributions to DC Plans - Age 65 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	36.2		32.7	32.6	55.6
DC plan		24.3	18.6	23.8	
Social Security	30.3	30.3	30.3	30.3	
Total	66.5	54.6	81.6	86.7	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	34.7		31.3	31.2	53.1
DC plan		19.8	15.2	19.4	
Social Security	23.1	23.1	23.1	23.1	
Total	57.8	42.9	69.6	73.7	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	38.7		36.1	32.6	55.6
DC plan		22.1	17.0	21.7	
Social Security	20.6	20.6	20.6	20.6	
Total	59.3	42.7	73.7	74.9	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector				Private sector			
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
22.0	29.6	55.6	51.0	15.5	26.9	55.6	46.8
12.0	15.3			7.7	9.9		
30.3	30.3			30.3	30.3		
64.3	75.2	55.6	51.0	53.5	67.1	55.6	46.8
21.1	28.3	53.1	48.7	14.8	25.7	53.1	44.7
9.8	12.5			6.3	8.0		
23.1	23.1			23.1	23.1		
54.0	63.9	53.1	48.7	44.2	56.8	53.1	44.7
24.3	29.6	55.6	51.0	17.1	26.9	55.6	46.8
10.9	14.0			7.0	9.0		
20.6	20.6			20.6	20.6		
55.8	64.2	55.6	51.0	44.7	56.5	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.11: Average Replacement Rates Available With No Employee Contributions to DC Plans - Age 55 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.0		22.2	41.6	55.6
DC plan		7.7	2.5	3.4	
Social Security					
Total	20.0	7.7	24.7	45.0	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	19.0		21.1	37.4	53.1
DC plan		6.3	2.1	2.8	
Social Security					
Total	19.0	6.3	23.2	40.2	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	20.8		23.4	37.8	55.6
DC plan		7.0	2.3	3.1	
Social Security					
Total	20.8	7.0	25.7	40.9	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.0	21.2	55.6	51.0	10.5	19.3	55.6	46.8
1.6	2.2			1.0	1.4		
25.3	25.3			25.3	25.3		
41.9	48.7	55.6	51.0	36.8	46.0	55.6	46.8
14.2	20.2	53.1	48.7	10.0	18.4	53.1	44.7
1.4	1.8			0.9	1.2		
19.2	19.2			19.2	19.2		
34.8	41.2	53.1	48.7	30.1	38.8	53.1	44.7
15.8	21.2	55.6	51.0	11.1	19.3	55.6	46.8
1.5	2.0			1.0	1.3		
16.9	16.9			16.9	16.9		
34.2	40.1	55.6	51.0	29.0	37.5	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

**Appendix III
Results of the Replacement Rate Analysis**

Table III.12: Average Replacement Rates Available With No Employee Contributions to DC Plans - Age 62 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	20.2		21.0	21.7	35.8
DC plan		5.8	1.9	2.5	
Social Security	22.5	22.5	22.5	22.5	
Total	42.7	28.3	45.4	46.7	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	21.0		21.7	21.7	35.8
DC plan		5.7	1.9	2.5	
Social Security	19.0	19.0	19.0	19.0	
Total	40.0	24.7	42.6	43.2	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	21.6		23.1	21.8	35.8
DC plan		5.6	1.8	2.4	
Social Security	16.3	16.3	16.3	16.3	
Total	37.9	21.9	41.2	40.5	35.8

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
14.1	19.7	35.8	32.8	10.0	17.9	35.8	30.1
1.2	1.6			0.8	1.0		
22.5	22.5			22.5	22.5		
37.8	43.8	35.8	32.8	33.3	41.4	35.8	30.1
14.6	19.7	35.8	32.8	10.3	17.9	35.8	30.1
1.2	1.6			0.8	1.0		
19.0	19.0			19.0	19.0		
34.8	40.3	35.8	32.8	30.1	37.9	35.8	30.1
15.6	19.8	35.8	32.8	11.0	18.0	35.8	30.1
1.2	1.5			0.7	1.0		
16.3	16.3			16.3	16.3		
33.1	37.6	35.8	32.8	28.0	35.3	35.8	30.1

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

**Appendix III
Results of the Replacement Rate Analysis**

Table III.13: Average Replacement Rates Available With No Employee Contributions to DC Plans - Age 65 and 20 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	23.0		22.8	21.8	35.8
DC plan		6.2	2.0	2.7	
Social Security	27.1	27.1	27.1	27.1	
Total	50.1	33.3	51.9	51.6	35.8
Average replacement rates at final salary of \$40,000:					
DB plan	24.1		24.0	21.7	35.8
DC plan		6.1	2.0	2.7	
Social Security	23.0	23.0	23.0	23.0	
Total	47.1	29.1	49.0	47.4	35.8
Average replacement rates at final salary of \$60,000:					
DB plan	25.0		25.4	21.7	35.9
DC plan		6.0	2.0	2.6	
Social Security	19.6	19.6	19.6	19.6	
Total	44.6	25.6	47.0	43.9	35.9

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
15.4	19.8	35.8	32.8	10.8	18.0	35.8	30.1
1.3	1.7			0.8	1.1		
27.1	27.1			27.1	27.1		
43.8	48.6	35.8	32.8	38.7	46.2	35.8	30.1
16.2	19.7	35.8	32.8	11.4	17.9	35.8	30.1
1.3	1.7			0.8	1.1		
23.0	23.0			23.0	23.0		
40.5	44.4	35.8	32.8	35.2	42.0	35.8	30.1
17.1	19.7	35.9	32.9	12.0	17.9	35.9	30.2
1.3	1.7			0.8	1.1		
19.6	19.6			19.6	19.6		
38.0	41.0	35.9	32.9	32.4	38.6	35.9	30.2

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

**Appendix III
Results of the Replacement Rate Analysis**

Table III.14: Average Replacement Rates Available With No Employee Contributions to DC Plans - Age 62 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	32.3		30.8	32.6	55.6
DC plan		8.9	2.2	3.8	
Social Security	25.3	25.3	25.3	25.3	
Total	57.6	34.2	58.3	61.7	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	30.8		29.3	31.2	53.2
DC plan		7.3	1.8	3.1	
Social Security	19.2	19.2	19.2	19.2	
Total	50.0	26.5	50.3	53.5	53.2
Average replacement rates at final salary of \$60,000:					
DB plan	34.2		33.5	32.6	55.6
DC plan		8.1	2.0	3.4	
Social Security	16.9	16.9	16.9	16.9	
Total	51.1	25.0	52.4	52.9	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector		Federal		Private sector		Federal	
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
20.7	29.6	55.6	51.0	14.6	26.9	55.6	46.8
1.4	2.4			0.9	1.6		
25.3	25.3			25.3	25.3		
47.4	57.3	55.6	51.0	40.8	53.8	55.6	46.8
19.7	28.3	53.2	48.8	13.9	25.7	53.2	44.7
1.2	2.0			0.7	1.3		
19.2	19.2			19.2	19.2		
40.1	49.5	53.2	48.8	33.8	46.2	53.2	44.7
22.6	29.6	55.6	51.0	15.9	26.9	55.6	46.8
1.3	2.2			0.8	1.4		
16.9	16.9			16.9	16.9		
40.8	48.7	55.6	51.0	33.6	45.2	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Appendix III
Results of the Replacement Rate Analysis

Table III.15: Average Replacement Rates Available With No Employee Contributions to DC Plans - Age 65 and 30 Years of Service

Program component	At retirement				
	Private sector			Federal	
	DB plans only	DC plans only	DB and DC plans	FERS	CSRS
Average replacement rates at final salary of \$25,000:					
DB plan	36.2		32.7	32.6	55.6
DC plan		9.5	2.3	4.0	
Social Security	30.3	30.3	30.3	30.3	
Total	66.5	39.8	65.3	66.9	55.6
Average replacement rates at final salary of \$40,000:					
DB plan	34.7		31.3	31.2	53.1
DC plan		7.8	1.9	3.3	
Social Security	23.1	23.1	23.1	23.1	
Total	57.8	30.9	56.3	57.6	53.1
Average replacement rates at final salary of \$60,000:					
DB plan	38.7		36.1	32.6	55.6
DC plan		8.7	2.1	3.7	
Social Security	20.6	20.6	20.6	20.6	
Total	59.3	29.3	58.8	56.9	55.6

**Appendix III
Results of the Replacement Rate Analysis**

10 years after retirement				20 years after retirement			
Private sector	Federal			Private sector	Federal		
DB and DC plans	FERS	CSRS I	CSRS II	DB and DC plans	FERS	CSRS I	CSRS II
22.0	29.6	55.6	51.0	15.5	26.9	55.6	46.8
1.5	2.6			1.0	1.7		
30.3	30.3			30.3	30.3		
53.8	62.5	55.6	51.0	46.8	58.9	55.6	46.8
21.1	28.3	53.1	48.7	14.8	25.7	53.1	44.7
1.2	2.1			0.8	1.4		
23.1	23.1			23.1	23.1		
45.4	53.5	53.1	48.7	38.7	50.2	53.1	44.7
24.3	29.6	55.6	51.0	17.1	26.9	55.6	46.8
1.4	2.4			0.9	1.5		
20.6	20.6			20.6	20.6		
46.3	52.6	55.6	51.0	38.6	49.0	55.6	46.8

Note 1: Because of differences in the annual rates of growth in the three salary histories, the replacement rates may differ somewhat for each salary history.

Note 2: Some columns show no data because all of the program components are not applicable to all of the retirement plans.

Features of Federal and Private Sector Defined Benefit Plans

The Watson Wyatt database included information on the retirement programs of 661 employers of which 497 had DB plans. Sufficient information was available to enable Watson Wyatt to determine the benefit amounts provided by 435 of the 661 employers. Of the 435 employers whose program benefits could be valued, 329 had DB plans. Of these 329 employers, 25 had retirement programs that included DB plans only and 304 had programs that included both DB and DC plans.

This appendix describes in detail the features of all 497 DB plans included in the 661 programs in Watson Wyatt's database. It also describes separately the features of the 329 DB plans in the 435 programs that could be valued. The private sector DB plans are divided into three categories. The first category, "all employers in database," contains data on all 497 DB plans. The second category, "DB plans only," contains data on the 25 programs with DB plans only whose benefits could be valued. The third category, "DB and DC plans," contains data on the DB plans in the 304 programs with DB and DC plans whose benefits could be valued. Therefore, the number of plans in the second and third categories will not total the number of plans in the first category.

The number of plans in each table varies because plans are sometimes excluded when a particular feature is not applicable to them. For example, in table IV.1, the total number of plans in the "all employers in database" category is 497, but in table IV.5, the total number of plans in that category is 470. Twenty-seven plans were excluded because they were nontraditional plans that, by nature, do not use salary averages in benefit calculations.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.1: Eligibility Requirements to Participate in the Defined Benefit Plans

Eligibility requirements	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DB plans only	DB and DC plans		
Immediate (any age/any service)	25	28	23	Immediate	Immediate
Any age/6 months service	3	0	4		
Any age/12 months service	18	4	18		
Any age/Other service requirement	2	4	2		
Age 18	4	12	3		
Age 21/12 months service	36	44	39		
Age 21/Service other than 12 months	7	4	7		
Other age/Service requirement	2	4	2		
No response	3	0	2		
Number of plans	497	25	304		

Table IV.2: Vesting Schedule

Vesting schedule ^a	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DB plans only	DB and DC plans		
Cliff vesting, 5 years service	91	92	95	Cliff vesting, 5 years service	Cliff vesting, 5 years service
Graded vesting, 7 years service	3	4	3		
Other vesting schedule	5	4	2		
No response	1	0	0		
Number of plans	497	25	304		

^aIf certain conditions are satisfied at the time an employee separates from an employer, the employee will have a vested interest in all or a portion of his or her accrued defined benefit plan benefits. Under cliff vesting, an employee must complete a set number of years of service before any benefits are guaranteed. Under graded vesting, an employee is guaranteed an increasing portion of plan benefits as his or her years of service increase.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.3: Employee Contribution Requirements

Employee contributions	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DB plans only	DB and DC plans		
Required	7	8	4	7% of base pay for general employees minus contributions to Social Security ^b	7% of base pay for general employees
Not required	92	92	96		
No response	1	0	^a		
Number of plans	497	25	304		

^aLess than 0.5 percent.

^bThe Social Security contribution rate since 1990 has been 6.2 percent of pay up to the Social Security pay ceiling, meaning that employees in FERS contribute 0.8 percent of their pay to the DB plan.

Table IV.4: Compensation Elements Included in Benefit Calculation Base

Compensation elements	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DB plans only	DB and DC plans		
Base pay	97	100	99	Base pay only	Base pay only
Overtime	61	68	63		
Commissions	41	20	47		
Bonuses	53	48	56		
401(k) or salary deferrals	59	48	62		
Internal Revenue Code section 125 conversions	44	40	48		
Other pay	14	16	15		
No response	2	0	1		
Number of plans	497	25	304		

Note: Some employers defined compensation to include more than one element. Therefore, percentages total to more than 100 percent.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.5: Pay Base for Benefit Calculations

Pay base for benefit calculations	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DB plans only	DB and DC plans		
Career average only	11	0	11	Average of highest 3 consecutive years of base pay rate	Average of highest 3 consecutive years of base pay rate
Final average, 5-year averaging period	64	77	70		
Final average, 3-year averaging period	14	0	12		
Final average, other averaging period	5	9	3		
More than one formula, career average and final average (5-year averaging period)	1	0	1		
More than one formula, career average and final average (3-year averaging period)	^a	0	1		
Other	2	0	2		
No response	3	14	^a		
Number of plans	470	22	286		

^aLess than 0.5 percent

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.6: Social Security Integration in Benefit Formulas

Social Security integration in benefit formulas	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DB plans only	DB and DC plans		
Offset integration formula(s) only	21	9	24	No Social Security integration	No Social Security coverage
Excess integration formula(s) only	47	45	53		
No integration in any plan formula	25	41	17		
More than one formula, one offset and one excess	1	0	1		
More than one formula, one offset and one not integrated	4	0	3		
More than one formula, one excess and one not integrated	2	5	2		
No response	0	0	0		
Number of plans	470	22	286		

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.7: Age and Years of Service Requirements for Unreduced Retirement Benefits

Age and years of service requirements for unreduced benefits	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DB plans only	DB and DC plans		
Less than age 55	a	0	0	Minimum retirement age and 30 years of service, age 60 and 20 years of service, or age 62 and 5 years of service	Age 55 with 30 years of service, age 60 and 20 years of service, or age 62 and 5 years of service
Age 55	10	8	8		
Age 60, no years of service requirement	1	0	0		
Age 60, with a years of service requirement	13	4	16		
Age 62, no years of service requirement	1	0	2		
Age 62, with a years of service requirement	26	4	28		
Other age requirement, less than age 65	2	0	2		
Years of service requirement, but no age requirement	2	4	1		
Age 65	43	80	41		
No response	2	0	2		
Number of plans	497	25	304		

^aLess than 0.5 percent.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.8: Age and Years of Service Requirements for Reduced Retirement Benefits

Age and years service requirements for reduced benefits	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued			CSRS
		DB plans only	DB and DC plans		
Less than age 55	8	12	7	Minimum retirement age (varying from ages 55 to 57 based on year of birth) and 10 years of service No provision	
Age 55, 10 years or less of service	69	68	73		
Age 55, more than 10 years of service	13	8	13		
Age 60	2	8	2		
Age 62	a	0	0		
Years of service requirement only	4	4	3		
Other age requirement	1	0	1		
No response	3	0	1		
Number of plans	497	25	304		

^aLess than 0.5 percent.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.9: Supplemental Benefits Available for Retirees Receiving Reduced Benefits

Supplemental benefits available for retirees	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DB plans only	DB and DC plans		
No	84	91	86	No supplemental benefits for retirees not eligible for unreduced benefits. If eligible for unreduced benefits, an annuity supplement is payable from the MRA ^a to age 62. This supplement equals the portion of the Social Security benefit that was earned during federal service and would be payable at age 62.	No supplemental benefits
Yes	12	4	13		
No response	4	5	1		
Number of plans	468	22	285		

^aMRA is the minimum optional retirement age. The FERS MRA is age 55 for employees born before January 1, 1948. The MRA increases until it reaches age 57 for employees born after December 31, 1969.

Table IV.10: Age at Which Retirement Supplement Ends

Age at which retirement supplement ends	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DB plans only	DB and DC plans		
Age 62	87	a	87	Age 62	No supplement paid
Age 65	7	a	8		
Other	6	a	5		
No response	0	0	0		
Number of plans	55	1	37		

^aFewer than five employers/plans in column, and percentages were not determined.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

Table IV.11: Program Provided at Least One Postretirement Benefit Increase During 1983-92

Postretirement benefit increases during 1983-92	Private sector (percentage of plans)				Federal CSRS
	All employers in database	Employers whose program benefits could be valued		FERS	
		DB plans only	DB and DC plans		
Yes	43	28	42	Yes ^a	Yes
No	44	68	43		
No response	13	4	15		
Number of plans	497	25	304		

Note: Data on private sector increases during 1983-92 were the latest available at the time the contract was awarded to Watson Wyatt Worldwide. The percentages include plans that provided at least one increase.

^aFERS became effective January 1, 1987. Therefore, COLA payments began in January 1988.

Table IV.12: Years When Program Provided Postretirement Increases During 1983-92

Years when postretirement increases were provided	Private sector (percentage of plans)				Federal CSRS
	All employers in database	Employers whose program benefits could be valued		FERS	
		DB plans only	DB and DC plans		
1983	25	29	19	See table IV.13 for actual postretirement increases paid.	See table IV.13 for actual postretirement increases paid.
1984	35	29	29		
1985	38	29	32		
1986	32	57	30		
1987	34	43	32		
1988	37	43	31		
1989	33	43	27		
1990	31	14	28		
1991	27	29	22		
1992	22	29	19		
No response	2	0	2		
Number of plans	213	7	129		

Note: Data on private sector increases during 1983-92 were the latest available at the time the contract was awarded to Watson Wyatt Worldwide.

^aEmployers in the Watson Wyatt database may have provided more than one increase during 1983-92. Therefore, the percentages total more than 100 percent.

**Appendix IV
Features of Federal and Private Sector
Defined Benefit Plans**

**Table IV.13: Postretirement Increases
in FERS and CSRS From 1983 to 1997**

Numbers in percent

Month and year when postretirement increases were provided	FERS	CSRS
May 1983	a	3.9 ^b
January 1985	a	3.5
January 1986	a	0.0
January 1987	a	1.3
January 1988	3.2	4.2
January 1989	3.0	4.0
January 1990	3.7	4.7
January 1991	4.4	5.4
January 1992	2.7	3.7
January 1993	2.0	3.0
April 1994	2.0	2.6
April 1995	2.0	2.8
April 1996	2.0	2.6
January 1997	2.0	2.9

^aFERS became effective January 1, 1987, and COLA payments began in January 1988.

^bThe CSRS COLA payment for May 1983 was 3.3 percent for nondisabled employee annuitants under age 62.

Features of Federal and Private Sector Defined Contribution Plans

The Watson Wyatt database included information on the retirement programs of 661 employers of which 617 had DC plans. Sufficient information was available to enable Watson Wyatt to determine the benefit amounts provided by 435 of the 661 employers. Of the 435 employers whose program benefits could be valued, 410 had DC plans. Of these 410 employers, 106 had retirement programs that included a DC plan only and 304 had programs that included both DB and DC plans.

This appendix describes in detail the features of all 617 DC plans included in the 661 programs in Watson Wyatt's database. It also describes separately the features of the 410 DC plans in the 435 programs that could be valued. The private sector DC plans are divided into three categories. The first category, "all employers in database," contains data on all 617 DC plans. The second category, "DC plans only," contains data on the 106 programs with DC plans only whose benefits could be valued. The third category, "DB and DC plans," contains data on the DC plans in the 304 programs with DB and DC plans whose benefits could be valued. Thus, the number of plans in the second and third categories will not total the number of plans in the first category.

The number of plans in each table varies because plans are sometimes excluded when a particular feature is not applicable to them. For example, in table V.1, the total number of plans in the "all employers in database" category is 617, but in table V.2, the total number of plans in that category is 530 because only 530 plans of the 617 plans include employer contributions.

**Appendix V
Features of Federal and Private Sector
Defined Contribution Plans**

Table V.1: Eligibility Requirements to Participate in the Defined Contribution Plans

Eligibility requirements	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
Immediate (any age/any service)	20	17	19	Open season every 6 months; new hires may join during the second open season after hire (6 to 12 months after hire)	Open season every 6 months; new hires may join during the second open season after hire (6 to 12 months after hire)
Any age/6 months service	7	8	7		
Any age/12 months service	28	25	32		
Any age/Other service requirement	7	6	7		
Age 18	5	8	5		
Age 21/12 months service	19	23	18		
Age 21/Service other than 12 months	5	5	5		
Other age/Service requirement	2	2	1		
No response	7	6	6		
Number of plans	617	106	304		

**Appendix V
Features of Federal and Private Sector
Defined Contribution Plans**

Table V.2: Vesting Schedules (Plans With Employer Contributions)

Vesting schedules (plans with employer contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
				FERS	CSRS
Immediate	32	26	29	Full and immediate vesting in all contributions and earnings except employer nonmatching contributions and earnings on the nonmatching contributions that vest at 3 years of service	Full and immediate vesting in employee contributions and earnings (no employer contributions are made)
Cliff vesting in less than 5 years	6	4	8		
Cliff vesting with 5 years of service	18	13	20		
Graded vesting, 100% vested in less than 7 years	28	33	31		
Graded vesting, 100% vested in 7 years	7	16	4		
Other	5	7	6		
No response	4	1	2		
Number of plans	530	100	300		

Table V.3: Types of Employer Contributions (Plans With Employer Contributions)

Types of employer contributions (plans with employer contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
				FERS	CSRS
Matching only	65	54	78	Nonmatching contribution of 1% of pay; 100% match on the first 3% of pay and 50% on the next 2% of pay that employee contributes	No employer contributions
Nonmatching only	11	11	5		
Both matching and nonmatching	17	34	15		
Other	2	0	2		
No response	5	1	0		
Number of plans	530	100	300		

**Appendix V
Features of Federal and Private Sector
Defined Contribution Plans**

Table V.4: Amounts of Employer Contributions as a Percentage of Pay in 1992

Amounts of employer contributions as a percentage of pay	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
Less than 2.00%	11	8	14	1994 employer contribution was 3.9% ^a	Employer does not contribute to the plan
2.00% to 3.99%	16	16	19		
4.00% to 7.99%	9	20	6		
8.00% to 9.99%	3	6	1		
10.00% or more	4	8	3		
No employer contributions	1	0	1		
Employer never contributes to plan	13	5	1		
No response	43	37	55		
Number of plans	617	106	304		

Note: Information on contributions made in 1992 was the latest available at the time the contract was awarded to Watson Wyatt.

^aTotal of all government contributions made to the TSP in 1994 as a percentage of all FERS employees' salaries.

Table V.5: Employer-Matching Contributions (Plans With Employer Contributions)

Employer-matching contributions (plans with employer contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
Only employee after-tax contributions matched	1	1	1	Employee pretax contributions matched	No employer contributions
Only employee pretax contributions matched	43	59	39		
Both after-tax and pretax contributions matched	15	8	18		
No matching employer contributions	9	10	5		
No response	32	22	37		
Number of plans	530	100	300		

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Table V.6: Maximum Employee Contributions Matched by Employer in 1993 (Plans With Matching Contributions)

Maximum employee contributions matched by employer (plans with matching contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
2.00% or less	3	2	2	5% of pay	No employer contributions
2.01% to 4.00%	21	27	22		
4.01% to 6.00%	64	56	66		
6.01% to 8.00%	7	6	6		
8.01% to 10.00%	1	2	1		
10.01% or more	4	7	3		
No response	^a	0	0		
Number of plans	436	88	283		

^aLess than 0.5 percent.

Table V.7: Percentiles of Maximum Employee Contributions Matched by Employer in 1993 (Plans With Matching Contributions)

Percentiles of maximum employee contributions matched by employer (plans with matching contributions)	Private sector (maximum employee contribution percentages matched)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25th percentile	5%	4%	5%	5% of pay	No employer contributions
50th percentile (median)	6%	6%	6%		
75th percentile	6%	6%	6%		
Number of plans	436	88	283		

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Table V.8: Maximum Pretax Employee Contributions Allowed in 1993 (Plans With Employee Contributions)

Maximum pretax employee contributions allowed (plans with employee contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
				FERS	CSRS
No maximum	1	2	1	10% of pay	5% of pay
3.00% or less	^a	0	0		
3.01% to 6.00%	6	9	6		
6.01% to 9.00%	6	8	5		
9.01% to 12.00%	24	32	27		
12.01% to 15.00%	33	37	32		
15.01% to 18.00%	16	7	20		
18.01% or more	8	3	3		
No response	6	2	6		
Number of plans	549	96	284		

Note: Employee pretax contribution amounts are limited by IRS. The limit in 1997 is \$9,500.

^aLess than 0.5 percent.

Table V.9: Percentiles of Maximum Pretax Employee Contributions Allowed in 1993 (Plans With Employee Contributions)

Percentiles of maximum pretax employee contributions allowed (plans with employee contributions)	Private sector (maximum pretax employee contributions allowed)			Federal	
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
				FERS	CSRS
25th percentile	10%	10%	10%	10% of pay	5% of pay
50th percentile (median)	15%	12%	15%		
75th percentile	16%	15%	15%		
Number of plans	549	96	284		

Note: Employee pretax contribution amounts are limited by IRS. The limit in 1997 is \$9,500.

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Table V.10: Amounts of Employer Match on a 3-Percent Employee Contribution (Plans That Only Match Contributions Up to 3 Percent)

Amounts of employer match on a 3% employee contribution (plans that only match contributions up to 3%)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25% or less	6	0	6	100% employer match on employee contributions up to 3% of pay and 50% employer match on employee contributions of next 2% of pay	No employer contributions
26% to 50%	31	43	29		
51% to 75%	3	0	4		
76% to 100%	50	57	50		
Over 100%	10	0	11		
No response	0	0	0		
Number of plans	36	7	28		

Table V.11: Percentiles of Amounts of Employer Match on a 3-Percent Employee Contribution (Plans That Only Match Contributions Up to 3 Percent)

Percentiles of amounts of employer match on a 3% employee contribution (plans that only match contributions up to 3%)	Private sector (employer match on a 3% employee contribution)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25th percentile	50%	100%	50%	100% employer match on employee contributions up to 3% of pay and 50% employer match on employee contributions of next 2% of pay	No employer contributions
50th percentile (median)	100%	100%	100%		
75th percentile	100%	100%	100%		
Number of plans	36	7	28		

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Table V.12: Amounts of Employer Match on a 4-Percent Employee Contribution (Plans That Only Match Contributions Up to 4 Percent)

Amounts of employer match on a 4% employee contribution (plans that only match contributions up to 4%)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25% or less	11	13	11	100% employer match on employee contributions up to 3% of pay and 50% match on employee contributions of next 2% of pay. At 4% employee contribution, employer match is 87.5%.	No employer contributions
26% to 50%	58	63	57		
51% to 75%	6	0	6		
76% to 100%	23	19	26		
Over 100%	2	5	0		
No response	0	0	0		
Number of plans	57	16	35		

Table V.13: Percentiles of Amounts of Employer Match on a 4-Percent Employee Contribution (Plans That Only Match Contributions Up to 4 Percent)

Percentages of amounts of employer match on a 4% employee contribution (plans that only match contributions up to 4%)	Private sector (employer match on a 4% employee contribution)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25th percentile	50%	50%	50%	100% employer match on employee contributions up to 3% of pay and 50% match on employee contributions of next 2% of pay. At 4% employee contribution, employer match is 87.5%.	No employer contributions
50th percentile (median)	50%	50%	50%		
75th percentile	75%	50%	100%		
Number of plans	57	16	35		

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Table V.14: Amounts of Employer Match on a 5-Percent Employee Contribution (Plans That Only Match Contributions Up to 5 Percent)

Amounts of employer match on a 5% employee contribution (plans that only match contributions up to 5%)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25% or less	19	33	17	100% employer match on employee contributions up to 3% and 50% match on employee contributions of next 2% of pay. At 5% employee contribution, employer match is 80%.	No employer contributions
26% to 50%	48	25	55		
51% to 75%	4	0	3		
76% to 100%	25	25	25		
Over 100%	4	17	0		
No response	0	0	0		
Number of plans	53	12	36		

Table V.15: Percentiles of Amounts of Employer Match on a 5-Percent Employee Contribution (Plans That Only Match Contributions Up to 5 Percent)

Percentages of amounts of employer match on a 5% employee contribution (plans that only match contributions up to 5%)	Private sector (employer match on a 5% employee contribution)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25th percentile	35%	25%	35%	100% employer match on employee contributions up to 3% and 50% match on employee contributions of next 2% of pay. At 5% employee contribution, employer match is 80%.	No employer contributions
50th percentile (median)	50%	50%	50%		
75th percentile	100%	100%	66%		
Number of plans	53	12	36		

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Table V.16: Amounts of Employer Match on a 6-Percent or More Employee Contribution (Plans That Only Match Contributions Up to 6 Percent or More)

Amounts of employer match on a 6% or more employee contribution (plans that only match contributions up to 6% or more)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25% or less	20	22	18	Employer does not match employee contributions above 5% of pay	No employer contributions
26% to 50%	53	54	54		
51% to 75%	14	10	14		
76% to 100%	13	14	13		
Over 100%	^a	0	0		
No response	^a	0	1		
Number of plans	245	50	176		

^aLess than 0.5 percent.

Table V.17: Percentiles of Amounts of Employer Match on a 6-Percent or More Employee Contribution (Plans That Only Match Contributions Up to 6 Percent or More)

Percentages of amounts of employer match on a 6% or more employee contribution (plans that only match contributions up to 6% or more)	Private sector (employer match on a 6% or more employee contribution)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
25th percentile	40%	30%	40%	Employer does not match employee contributions above 5% of pay	No employer contributions
50th percentile (median)	50%	50%	50%		
75th percentile	60%	50%	60%		
Number of plans	245	50	176		

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Table V.18: Employer-Set Dollar Limitation on Employer-Matching Contributions

Dollar limitation (other than legal maximum) on employer-matching contributions	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
Yes	5	11	3	No employer-set limitation	No employer contributions
No	81	75	81		
No response	14	14	16		
Number of plans	436	88	283		

Note: Employer-matching contribution amounts are subject to statutory limitations.

Table V.19: Employer Contributions Not Based on a Match of Employee Contributions (Plans With Employer Contributions)

Employer contributions not based on a match of employee contributions (plans with employer contributions)	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
Yes	27	45	20	1% of pay	No employer contributions
No	71	55	78		
No response	2	0	2		
Number of plans	530	100	300		

Table V.20: Employer-Nonmatching Contributions Based on Profits

Employer-nonmatching contributions based on profits	Private sector (percentage of plans)			Federal	
	All employers in database	Employers whose program benefits could be valued		FERS	CSRS
		DC plans only	DB and DC plans		
Yes	50	58	49	No	No employer contributions
Partially	10	9	8		
No	34	31	35		
No response	6	2	8		
Number of plans	145	45	61		

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Table V.21: Plan Loan Provisions

Plan has a loan provision	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
Yes	70	66	77	Yes	Yes
No	27	34	21		
No response	3	0	2		
Number of plans	617	106	304		

Table V.22: In-Service Hardship Withdrawal Provisions

In-service hardship withdrawal provisions	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
Yes	84	83	88	No ^a	No ^a
No	12	17	10		
No response	4	0	2		
Number of plans	617	106	304		

^aIn late 1997, changes in the provisions of the federal DC plan, the TSP, will allow federal employees to make withdrawals if they are age 59-1/2 or older or if they have a financial hardship.

Table V.23: In-Service (Other Than Hardship) Withdrawals Permitted Before Age 59-1/2

In-service (other than hardship) withdrawals permitted before age 59-1/2	Private sector (percentage of plans)			FERS	Federal CSRS
	All employers in database	Employers whose program benefits could be valued			
		DC plans only	DB and DC plans		
Yes	25	17	30	No	No
No	33	51	21		
No response	42	32	49		
Number of plans	617	106	304		

Note: Under IRS code, such withdrawals are only permissible from after-tax accounts.

Comments From the Office of Personnel Management



OFFICE OF THE DIRECTOR

UNITED STATES
OFFICE OF PERSONNEL MANAGEMENT
WASHINGTON, DC 20416-0001

FEB 16 1997

Mr. L. Nye Stevens
Director, Federal Management and Workforce Issues
General Government Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Stevens:

Thank you for the opportunity to comment on your draft report on Federal and private sector retirement programs (GAO code 410014). The report compares the basic features and benefits of the Federal retirement programs and the private sector programs contained in the Watson Wyatt database.

The draft report has been reviewed by staff of the Retirement and Insurance Service and other OPM personnel, and the overall consensus is that it is well-written, easy to understand, and does a fine job of highlighting the basic features and benefits of the Federal retirement programs and the private sector programs contained in the Watson Wyatt database.

Nonetheless, it is intrinsically exceedingly difficult to compare FERS and CSRS with a multitude of highly varied private sector retirement systems. GAO's methodology was to compare programs by analyzing retirement benefits available under various hypothetical situations. It is important to understand that the results of such comparisons are dependent upon the examples chosen, the assumptions which are used in making the comparisons, and the data base chosen for study.

By way of example, the report notes that the "findings may have been different if another private sector database had been used in the benefit comparisons because the Watson Wyatt database cannot be generalized to the private sector as a whole." Elsewhere, the report states that, for private sector defined benefit plans, "Formulas vary so widely that they cannot be meaningfully summarized or a typical formula described."

See comments on pp. 65 to 67.

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Mr. L. Nye Stevens

See comments on pp. 65
to 67.

Once the comparisons have been made, it is even difficult to describe the results of the comparisons in a clear and understandable basis. The manner in which certain aspects of the analysis and conclusions are expressed, or even where items are placed, can lead to misunderstandings or differing conclusions. Examples include--

- o The Results in Brief section of the Executive Summary indicates that--

benefits available from FERS and CSRS can be smaller, similar, or greater than the average of the programs in Watson's Wyatt's private sector database, depending on a number of factors that can vary by individual retiree.

This could be read as implying that variations in retirement benefits result primarily from employee decisions and situations, while it is clear from the body of the report that what is meant is that these variations affect the comparison of structural differences between programs.

- o It is difficult to include every material item in the Executive Summary. Some significant information contained in the body of the report -- that private sector salaries used in calculating retirement benefits often include overtime and bonuses; that there is not even a meaningful typical retirement benefit formula for the private sector; and that retirement program designs vary considerably between large and small private sector companies -- is not included in the Executive Summary.

- o Chapter 2 outlines in detail the "Comparative Benefit Levels Available From FERS, CSRS, and Private Sector Retirement Programs." The chapter's final paragraph states that--

...the relative replacement rates...used in our analyses...do not necessarily represent employees' actual experiences under the programs. For example, employees in CSRS and FERS, on the average, retire at considerably older ages than 55. In Fiscal Year 1995, employees retiring under CSRS...averaged 62 with 30 years of service. Employees retiring under FERS...averaged 63 with 14 years of service. The Watson Wyatt database did not contain information on the ages at which employees choose to retire in private sector programs.

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Mr. L. Nye Stevens

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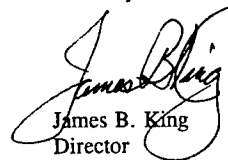
- o Chapter 2 uses a final salary of \$40,000 for comparative replacement rates. In a footnote, the vital information is provided that--

We calculated replacement rates using base salary amounts only. We did not include other compensation amounts that employees might receive in addition to salary, such as overtime and bonuses, during their last year of employment. This tended to understate the average replacement rates available from private sector programs since the majority of programs in the Watson Wyatt database included compensation elements other than salary in determining benefit amounts.

In summary, I deeply appreciate the effort and thought that went into this effort to compare exceedingly disparate retirement benefit systems. However, I do not feel it too much of an exaggeration to say that the most significant result of the effort may be a reaffirmation of the old adage that it is difficult to compare apples and oranges. Indeed, as the first sentence of the conclusion notes, "There is no definitive answer to the question of whether federal retirement programs offer greater benefits, or smaller benefits, than private sector programs."

We hope this information is helpful.

Sincerely,



James B. King
Director