In 1987 a new retirement system for civil service personnel was introduced. Called the Federal Employees Retirement System (FERS), it consists of three parts: a defined benefit plan (the Basic Plan) that bases retirement benefits on the employee’s earnings and years of service (YOS), Social Security coverage, and a defined contribution plan called the Thrift Savings Plan (TSP). Both employees and their employing agencies contribute to the TSP, and the value of the employee’s retirement benefit depends on how the TSP performs over time.

Some observers (e.g., Congressional Budget Office, 1986; U.S. Office of Personnel Management (see Johnston, 1988); and General Accounting Office, 1990) have claimed that FERS would alter some of the separation and retirement patterns observed under FERS predecessor, the Civil Service Retirement System (CSRS). First, these observers hypothesized that CSRS produced insufficient turnover among those in their mid-careers. Insufficient turnover can be a problem if it prevents the hiring or promotion of better-trained or more-skilled personnel, or if it dulls the efforts and retention incentives of high-quality junior personnel by allowing mid- and late-career personnel to block promotion opportunities for others. By moving to FERS, these observers thought that more separations would be produced among those in their mid and late careers.

Second, CSRS was viewed as causing senior personnel, such as those in managerial positions, to retire as soon as they became eligible rather than inducing them to wait to retire at later ages. When senior personnel retire at the first age of retirement eligibility (age 55 under CSRS), two costs can be imposed on the civil service: the direct cost of finding a qualified replacement and the indirect cost of subordinates whose productivity may be reduced while a qualified replacement is being found. By moving to FERS, it was hypothesized that senior personnel would be induced to defer retirement beyond their first retirement-eligible age.

Little research has been conducted to prove whether FERS embeds separation and retirement incentives that are consistent with these hypotheses. The research presented in this report seeks to fill this gap. Specifically, the research addresses the following questions:

1. Which system is more generous in terms of increasing expected net lifetime wealth: FERS or CSRS?
2. What are the retirement age incentives embedded in each system? Do those covered by FERS have an incentive to retire at later ages than those covered by CSRS?

3. Are separation incentives for mid-career and senior personnel stronger under FERS than under CSRS? Do we observe higher separation rates among early and mid-careerists who are under FERS than among those under CSRS?

In the second half of 1998, those covered by CSRS were allowed to switch to FERS apparently because of the tremendous growth in stock market returns in recent years, and the beneficial effect of this growth on TSP returns. Switching would allow their federal retirement benefits to reflect future growth in stock market returns. Therefore, we also address this question:

4. Who is better off financially by switching to FERS: New hires, mid-careerists, or senior personnel?

To address these questions, we first simulate and compare the expected net lifetime wealth under FERS and under CSRS at each leaving age for a “representative” individual. We then infer from these simulation results the separation, retirement, and switch incentives embedded in CSRS and in FERS. To conduct the simulations, we make assumptions about various underlying factors, such as the inflation rate, the average rate of return on TSP accumulations, the individual’s personal discount rate, the individual’s TSP contribution rates over his or her career, the individual’s pay profile, and his or her minimum retirement age under FERS. To examine how our results would vary under alternative assumptions, we also perform a sensitivity analysis. We then analyze time-series cross-sectional data from the Defense Manpower Data Center on DoD civil service personnel from fiscal year (FY) 82 through FY96 to examine the effect of FERS on empirical separation rates for junior and mid-career personnel. We focus our empirical analysis on junior and mid-career civil service personnel because insufficient time has passed since FERS was introduced to examine the separation and retirement rates of senior personnel who have spent their entire careers under FERS rather than under CSRS. We also exclude from our empirical analysis those who voluntarily switched to FERS during the 1980s because their decision to switch may have been based on characteristics, unrelated to the separation incentives embedded in FERS, that made them more or less likely to separate from the civil service.

**GENEROSITY**

We find that expected net lifetime wealth is higher under FERS than under CSRS under a variety of alternative assumptions. In addition, we find that the relative advantage of FERS is even greater for those who enter the civil service at later ages, because the Social Security system includes a windfall elimination provision that partially deducts the employee’s Social Security benefit for his or her CSRS annuity. The deduction is larger for those who enter the civil service at older ages because they usually have some Social Security–covered employment. Therefore, for these individuals, FERS is more attractive than CSRS.
The fact that we find FERS to be more generous is not a result of the enormous growth in stock market returns in recent years and the implied beneficial effect on TSP returns. Our base analysis assumes a conservative 6 percent real growth rate in TSP returns, a rate that is far below the real overall performance of the stock market in recent years. Rather, net expected wealth is greater under FERS because of a combination of factors—including the accumulation of benefits from three retirement systems; the opportunity to earn an average rate of return on the TSP, which can protect the fund accumulation from the erosive effects of inflation over time; Social Security coverage; and the lack of a windfall elimination provision for those covered by FERS.

**RETIREMENT INCENTIVES**

We also find that FERS and CSRS embed identical retirement age and YOS incentives, given our assumption of a minimum retirement age under FERS of 55. Given this assumption, our simulations show that expected net lifetime wealth is maximized at the same age and YOS under both retirement systems. Therefore, from a financial standpoint, individuals who enter civil service and are covered by FERS would choose to retire at the same age and YOS as similar individuals who enter civil service and are covered by CSRS, given our assumptions. This similarity in retirement incentives is notable because it is contrary to one of the initial intents of FERS, which was to embed incentives to retire later. However, the minimum retirement age under FERS rises with birth year and is age 57 for those born after 1970. When the minimum is 57, we find that individuals who spend their careers in the civil service will retire later (at age 57 versus age 55) if they are covered by FERS than if they are covered by CSRS. Since recent hires are more likely to be born after 1970 than earlier hires, our analysis predicts that recent hires will tend to retire at a later age under FERS than they would have retired had they been covered under CSRS. Therefore, FERS will successfully tend to induce more recent hires to delay retirement beyond age 55.

Because of nonmonetary factors, such as ill health or a particularly good job assignment in the civil service, individuals may choose to retire either before or after the age and YOS at which their expected net lifetime wealth is maximized. However, those who do leave before or after the wealth-maximizing age will suffer a financial penalty. We find that the size of this penalty is smaller under FERS. Those who retire earlier or who retire later than the optimal age will not lose as much in net wealth under FERS by failing to retire at the wealth-maximizing retirement age. The penalty is lower under FERS for those who leave before the wealth-maximizing retirement point because FERS offers more inflation protection for those who leave before they are eligible for normal retirement, and FERS allows such individuals to receive deferred retirement pay at an earlier age. The penalty is lower under FERS for those who leave after the wealth-maximizing point because the total retirement benefit under FERS increases more with YOS and earnings than does the benefit under CSRS.
Since the penalty is lower, our analysis suggests that FERS will create more variance in retirement ages, although the average retirement age is predicted to be the same under FERS given an assumed minimum retirement age of 55. In other words, under FERS more individuals will retire earlier and more will retire later than the wealth-maximizing retirement age. Therefore, while FERS is more likely to encourage senior personnel to stay in the civil service rather than retire at age 55, or more generally at the minimum retirement age, it is also more likely to encourage them to leave earlier. This aspect of FERS is not consistent with earlier hypotheses about the retirement incentives embedded in FERS. If the goal is to retain more senior personnel, then the retirement system needs to be constructed in such a way that the optimal retirement age shifts up for them.

**SEPARATION INCENTIVES**

Our simulation analysis finds that individuals covered by FERS have a stronger incentive to stay in the civil service than those covered by CSRS if they are at the beginning or middle of their careers but a weaker incentive to stay if they are nearing retirement. This result suggests that the separation incentives embedded in FERS are consistent only with prevailing hypotheses for those nearing retirement and not for those personnel in their early and mid-careers.

The reason why incentives to stay are stronger (separation incentives are weaker) under FERS for early- and mid-career personnel is that FERS is a more generous system. As an analytic exercise, we redefined FERS to exclude the Basic Plan and include only Social Security and the TSP as a means of making FERS a less generous system. In contrast to our original results, when FERS is redefined to be less generous, we find that junior and mid-career personnel have a weaker incentive to stay in the civil service. Therefore, had FERS been made less generous when it was introduced, the separation incentives embedded in it would have been consistent with earlier suggestions about the separation incentives in FERS.

**SWITCH INCENTIVES**

In our simulation of the decision to switch from CSRS to FERS, we find that individuals who face the switch decision early in their careers increase their expected net lifetime wealth at retirement if they switch to FERS. Those who face the switch decision late in their careers do not. They are better off by remaining under CSRS because those who start FERS later in their careers have fewer years in which to increase their TSP accumulations. In addition, CSRS retirement benefits grow with YOS in a nonlinear fashion because the multiplier in the benefits formula rises with YOS. As a result, individuals with more YOS under CSRS have more to lose by switching to FERS.

However, if those individuals facing a switch decision later in their careers do not anticipate staying in the civil service until retirement, then they may be better off financially if they switch to FERS. Therefore, whether or not those facing a switch de-
cision in their mid- or late careers should switch to FERS depends on their career expectations, all else equal.

**EMPIRICAL RESULTS**

To examine how FERS affects separation outcomes of junior and mid-career personnel, we compare the annual separation rates in the late 1980s and 1990s of those covered by FERS with the annual separation rates in the early 1980s of those covered by CSRS. Since differences in separation rates of those covered by FERS compared with those covered by CSRS might be attributed to a “time effect”—i.e., changes that have occurred in the general environment between the early 1980s and the late 1980s and early 1990s—and not to differences in retirement system coverage, we create a control group to capture the “time effect.” We proxy the control group with a group of senior civil service personnel who were covered by CSRS in both the early and later periods. We assume that any difference in the separation rates of this group between the early 1980s and the late 1980s and early 1990s captures the “time effect.”

We estimate that separation rates under FERS for junior and mid-career civil service personnel are substantially lower than they are for similar personnel under CSRS. Given an estimated separation rate of 4.4 percent for those covered by CSRS, we estimate that FERS would reduce this rate to 2.4 percent, a difference of 45 percent. While this figure might overestimate the difference in the separation rates of those covered by FERS compared with those covered by CSRS because of some methodological issues that could not be addressed, it indicates that FERS is not producing greater separation rates among junior and mid-career personnel, as initially was thought would happen, and is likely to be producing substantially lower rates.

**CONCLUSIONS**

When FERS was introduced, some civil service workers expressed concern that FERS would provide smaller benefits than would CSRS for employees who planned to remain in the civil service until retirement. Our results suggest that these worries were generally groundless. Expected lifetime earnings and retirement wealth is predicted to be greater under FERS under a variety of alternative assumptions. These greater benefits might compensate civil service personnel for the risk they bear because their fund accumulations or the return on the accumulation might fall as a result of a downturn in the stock market or interest rates.

Nonetheless, the generosity of FERS gives junior and mid-career employees an incentive to stay that is stronger than it would have been had they been covered by CSRS. Empirically, we find evidence consistent with this simulation result. That is, we find that separation rates of junior and mid-career civil service personnel covered by FERS are as much as 45 percent lower than the rates for personnel covered by CSRS. These results suggest that turnover targets for junior and mid-career personnel need to be pursued outside of the retirement benefits package since the current retirement systems are not producing the desired turnover results. Determining how
effective other forms of compensation, such as separation pay, would be in meeting these targets is an area for future research.

Another implication of our analysis is that FERS will be more successful than CSRS at inducing individuals to retire later in future years. Although FERS and CSRS embed the same retirement incentives for most current employees, recent hires will face a higher minimum retirement age under FERS (age 57). Consequently, our analysis predicts that recent (young) hires will retire at a later age under FERS than they would have retired under CSRS.

Our analysis also has implications for the switch window that was open during the later half of 1998 for employees covered by CSRS. Estimates indicate that about 4 percent of CSRS employees switched in 1987 when switching was also allowed. How many switched in 1998 depended critically on worker expectations about future real rates of returns on the TSP.\(^1\) Given our assumption of a 6 percent real return on the TSP, our simulation analysis indicates that only those covered by CSRS who face the switch decision early in their careers would be unilaterally better off financially by switching to FERS. However, this was not the case for those covered by CSRS in 1998. They were not in their early careers but had at least 14 YOS. Our analysis suggests that whether individuals such as these are better off by switching to FERS depends on whether they plan to stay until they retire. If they do, our analysis indicates that they would be financially worse off by switching to FERS, given our assumption of a 6 percent real return of the TSP fund.

However, this result is sensitive to our assumption about TSP growth rates. At higher assumed rates, such as a 15 percent real return, we predict that those in their mid- and late careers would be better off financially by switching. Therefore, whether a large or trivial number of individuals switched to FERS in 1998 should depend crucially on what these individuals believed about the future real return on their TSP accumulation. Given the enormous growth in stock market returns in recent years, individuals facing the switch decision may have believed that such returns could be earned over the rest of their careers. In that case, larger numbers than might otherwise be expected may have chosen to switch to FERS. Since FERS costs more than CSRS to the employing agencies, differences in the number of personnel who switched could have important cost implications for these civil service agencies.

\(^1\)There were no data yet available for 1998 as of the writing of this report.