



## UNITED STATES OFFICE OF PERSONNEL MANAGEMENT

Washington, DC 20415

The Director

April 22, 2010

The Honorable Herb Kohl  
Chairman, Special Committee on Aging  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

Thank you for your letter dated February 17, 2010, in which you expressed interest in Federal employee participation rates in the Federal Thrift Savings Plan (TSP). Attached you will find a copy of a report that analyzes participation patterns among federal employees in the TSP in the plan year 2007.

As you may know, the Thrift Savings Plan Open Elections Act (P.L. 108-469) requires the U.S. Office of Personnel Management (OPM) to develop and implement a retirement financial literacy and education strategy for Federal employees as part of the retirement training offered by OPM under 5 U.S.C. 8350. This does not include members of the armed services, who also are eligible to participate in the TSP. The implementation of the strategy must educate Federal employees on the need for retirement savings and investment, and must provide information on how to plan for retirement and how to calculate the retirement investment needed to meet their retirement goals. In order to build and implement an effective strategy, it is helpful to understand retirement planning behavior in the private sector and our own Federal employee population.

OPM reviewed the Ariel/Hewitt study when it was released. In light of the results of that study, we became concerned that patterns of under-participation among minorities and women might exist in the Federal employee population as they do in the private sector. We determined it would be in the interest of OPM's retirement financial literacy and education strategy to conduct a similar review of participation in the TSP. Our findings indicate that while participation in TSP is generally high, minority groups are lagging behind non-minorities in terms of the percentage of employees participating, salary deferral rates, and TSP balances. We also found discrepancies between participation rates and TSP balances of males and females.

In light of the study results, we are developing a revised action plan and strategy designed to strengthen our already extensive employee financial education efforts. Pursuant to P.L. 108-469, we plan to improve the methods by which we educate Federal employees so they will be able to plan for retirement. While we do not provide retirement planning advice, we intend to increase the channels of communication and broaden our financial

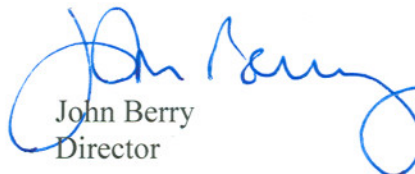
education outreach and improve overall awareness of the importance of TSP savings in order to ensure that we are reaching all employee groups, including those whose participation has been lagging, as revealed in our study.

Revising our plan and strategic outreach efforts will focus on three main areas. First, we must work to build strategic partnerships and coalitions with Federal employee groups, such as unions and interest and affinity groups representing diverse populations of employees. Second, we will provide agencies and partners with financial education programs focused on helping employees understand the importance of saving through TSP at events such as chapter meetings and conferences. Third, OPM and other partners will conduct outreach programs to agency benefits officers and their respective memberships to make them aware of the resources available to help promote participation in TSP.

As you may recall, last year the Family Smoking Prevention and Tobacco Control Act (P.L. 111-31) included the TSP Enhancement Act of 2009, which provided for agencies to automatically enroll all new Federal civilian employees into the TSP. The law requires the Federal Retirement Thrift Investment Board (FRTIB) to issue regulations to provide for automatic enrollment that would allow Federal civilian employees to decline automatic enrollment and exempted the military service from automatic enrollment requirements. It is our understanding that the FRTIB is working on promulgating these implementing regulations and plans to publish them in proposed form later this year. We look forward to tracking the implementation of this provision and its impact on participation patterns.

We sincerely appreciate your interest in this important issue and are committed to working with you to ensure all Federal employees are educated on the value of TSP participation. Should you need additional assistance, feel free to contact me or have your staff contact Ms. Tania Shand, Director, Congressional and Legislative Affairs, at (202) 606-1300.

Sincerely,



John Berry  
Director

Attachment



# U.S. OFFICE OF PERSONNEL MANAGEMENT

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## Federal Employee Participation Patterns in the Thrift Savings Plan Calendar Year 2007

*A New Day for the Civil Service*



UNITED STATES OFFICE OF PERSONNEL MANAGEMENT  
APRIL 2010

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# **Federal Employee Participation Patterns in the Thrift Savings Plan**

## **Summary**

The United States Office of Personnel Management (OPM) analyzed participation in the Thrift Saving Plan (TSP) to identify employee participation rates and determine if the data suggests possible actions to be taken to improve the methods by which we educate Federal employees so they will be better able to plan for retirement. We found that participation in TSP is generally high, and employee participation rates have increased between 2005 and 2007. However, some of the data indicates that minorities are lagging behind non-minorities in terms of percent of employees participating, salary deferral rates, and TSP balances. Discrepancies are also present when we compare participation rates and TSP balances of males and females.

OPM believes these findings are important and actionable. Over the coming months, OPM will develop and implement an action plan designed to strengthen our already extensive employee financial education efforts by targeting minority issues as identified in this report.

While the data presented in this report are useful in identifying trends related to the differences between various employee groups, further analysis would be required to make any broad generalizations relative to the underlying causes of these differences. Data in this report are based on comparisons of personnel and payroll data from two points in time, and does not account for the multitude of factors that may impact an individual employee's investment decisions. The comparisons presented are intended to identify areas of further research as well as assist in ensuring that training materials and informational products are effective tools for all employees.

## **1. Background**

The Federal Retirement Thrift Investment Board administers the Thrift Savings Plan<sup>1</sup>, the Federal government equivalent to a 401(k) or 403(b) retirement plan. TSP began in 1987 as part of the Federal Employee Retirement System (FERS), which replaced the Civil Service Retirement System (CSRS), a defined-benefit plan. TSP offers five core index funds as well as "lifecycle" funds that continuously adjust allocations among the five funds based on an anticipated retirement date. Employees can contribute deferred income up to yearly IRS limits and receive a maximum 5% agency match. CSRS employees are allowed to participate in TSP, though they are not eligible for the agency match because their retirement income structure is not dependent upon TSP participation for future income.

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<sup>1</sup> [www.tsp.gov](http://www.tsp.gov)



FRTIB periodically publishes reports of investment behaviors; the most recent focused on the 2000 – 2005 period (see References section for link). The report noted how FERS employees' participation and deferral rates tend to increase slightly every year, though the latter is partially due to increasing IRS allowances. By 2005, FERS employees boasted an 89% participation rate with an average deferral of 8.6%. CSRS figures were somewhat lower. In 2005, an estimated 67% participated with an average deferral of 7.5%. This figure requires estimation since FRTIB does not house data on CSRS employees who elect not to participate in TSP. For the report, the U.S. Office of Personnel Management (OPM) provided a total number of current CSRS employees that was used in the participation rate formula.

The TSP report breaks out behavioral trends by demographics—namely, age and salary. Both participation rate and deferral rate increase with age and salary. Perhaps not surprisingly, older employees and employees who make higher salaries are both more likely to participate and contribute a higher percentage of income. Furthermore, when broken out by age, one can see how allocation becomes more conservative in higher age brackets, as measured by the growing portion of funds dedicated to the no-risk G fund, investing in non-marketable, short-term U.S. Treasuries.

The purpose of this paper is to extend analysis of TSP participation data in the spirit of the 2005 FRTIB report, but shift focus to two previously unexamined demographic comparisons: minorities versus non-minorities and males versus females. These particular comparisons were chosen after a brief literature review found noteworthy differences between the groups among American investors.<sup>2</sup> OPM was interested to determine if the same trends were also present among Federal employees.

Section 2 describes the data sources and rules used to develop the analysis dataset and analysis variables. Section 3 summarizes major findings of the study, and Section 4 concludes with a discussion on limitations and ideas for further research.

## 2. Data and Methods

OPM acquired 2007 TSP participation data from FRTIB. In addition to being able to uniquely identify participants by social security number (SSN) and date of birth, the file contained variables regarding total *employee* contribution for 2007 (excluding agency match amounts), retirement plan (CSRS/FERS), 2007 year-end balances for each of the five funds, and date of first employee contribution.

One limitation was that the TSP data excluded year-end balance information on the lifecycle funds, first introduced in 2005. The effect of this was assessed and deemed to be minor, given less than 6% of Federal employees as of the end of 2007 had all TSP funds dedicated strictly to a lifecycle fund. There was some question regarding employees who have only a portion of their money allocated to a lifecycle fund, yet we observed from the TSP website that as of the end of 2008 less than 9% of all TSP assets

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<sup>2</sup> For minority versus non-minority comparison, see [www.arielinvestments.com/blackinvestor](http://www.arielinvestments.com/blackinvestor). For gender comparisons, see Bajtelsmit and Bernasek (1996).



under management were accounted for by lifecycle funds. Moreover, the distribution of minorities between individuals invested solely in lifecycle funds only and all other scenarios was only minimally different—31% versus 33%. No major gender differences were determined, either. Hence, even if extreme differentiation was occurring behind the scenes, overall reported results would differ only marginally.

TSP data were matched by SSN and date of birth to the Central Personnel Data File (CPDF) maintained by the OPM to incorporate salary, minority status, and service computation date (used to calculate length of service). CPDF provides quarterly roster snapshots of Federal employees. Fortunately, one such quarterly cut-off is December 31, providing a compatible match. There were, however, a few nuances to sort through during the data compilation phase, discussed next.

The FRTIB file contained 2.5 million records. CPDF as of the final day in 2007 yielded approximately 1.6 million non-seasonal, full-time<sup>3</sup> employees. This discrepancy stems from the fact that the TSP plan is open to Postal Service employees and many agencies within the Legislative and Judicial Branches, though CPDF predominantly covers the Executive Branch. The number of records with a one-to-one match between the two data files was further subset by another requirement that employees had been on board for the entire 2007 calendar year—done by conditioning on full-time, permanent status in the December 2006 CPDF as well. This was decided so that a more accurate deferral rate estimate could be computed, a key analysis variable not in either file. Individuals with non-FERS/CSRS retirement plans were dropped, excluding an additional 14 records. The final analysis dataset contained a total 1,490,710 records<sup>4</sup>. Of these, 1,419,872 were individuals identified by both TSP and CPDF, and 70,838 individuals were included since they were identified in CPDF as CSRS employees but were not in the TSP data (employees with no TSP participation history).

The following defines rules and descriptions of analysis variables:

- Active Participant: full-time, permanent employee who deferred at least \$100 during the 2007 calendar year, and was on board for the entire 2007 calendar year (used to derive participation rate)
- Salary: adjusted basic pay as reported in CPDF as of December 31, 2007
- Contribution: the employee's share of TSP dollar amounts contributed during 2007
- Deferral Rate: percentage of one's annualized salary deferred to TSP, approximated as the employee contribution divided by his/her average salary on December 31, 2006 and December 31, 2007<sup>5</sup>

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<sup>3</sup> The 2000 – 2005 report issued by the Federal Retirement Thrift Investment Board (FRTIB) excluded non-full-time permanent employees as well.

<sup>4</sup> Tabulations presented in the results section may not sum precisely to this number due to nominal rates of missing data from other CPDF variables. For instance, 924 employees had an invalid minority status indicator but were not removed since other analysis variables were not missing.

<sup>5</sup> FRTIB used a different, though similar, approximation. Deferral rate is calculated with employee adjusted basic pay as of June of the given year in the denominator.

- TSP Balance: accumulated sum of all TSP fund balances as of December 31, 2007, including market fluctuation and contributions from employee or agency from previous years
- Above Agency Match: indicator variable specifying whether an employee's deferral rate was greater than the current agency match maximum of 5%
- Ever Participate: indicator variable drawing upon the "first employee contribution date" variable specifying whether a current full-time, permanent Federal employee ever contributed his/her own money into TSP
- Years in TSP: numeric variable of years between first employee contribution and December 31, 2007; non-participants assigned zero value
- Length of Service: numeric variable of years between CPDF's service computation date (SCD) variable and December 31, 2007
- G Fund Only: indicator variable specifying if all TSP funds are allocated to the no-risk G Fund
- Minority: for purposes of this analysis, a minority is defined as any race or ethnicity identified in CPDF other than non-Hispanic White

Note that average deferral rate and contribution amount exclude non-participants from calculations, as opposed to including their records with a zero value. Unless noted to the contrary, all other statistics and rates include non-participants with zero value.

### **3. Results**

#### **3.1 Comparisons to FRTIB Report**

Table 1 provides a summarization of participant statistics, overall and broken out by retirement plan. Overall figures tend to mirror those of the FERS column since the FERS employees comprise nearly 78% of the analysis dataset. Results found are generally compatible with trends cited within the FRTIB report. For instance, the report stated FERS employee participation rates grew slightly each year, from 88.4% in 2000 to 88.8% in 2005. That figure as of 2007 appears to have edged up to 89.9%, though it is unclear what effect the slightly emended deferral rate approximation might have. CSRS participation rates showed a much greater increase, approaching nearly 72.9% from an estimated 67% in 2005.



**Table 1.** Summary of Participation Statistics by Retirement Plan.

Statistic	All	Retirement Plan	
		CSRS	FERS
Count	1,490,710	327,800	1,162,910
Percent	100.0%	22.0%	78.0%
Participate	86.1%	72.9%	89.9%
Ever Participate	90.4%	78.4%	93.8%
Average Salary	\$70,329	\$80,887	\$67,354
Average Deferral (Participants)	\$6,905	\$7,829	\$6,694
Average Deferral Rate (Participants)	9.3%	9.0%	9.4%
Average TSP Balance	\$73,186	\$52,959	\$78,888
Average Length of Service	17.3	30.7	13.6
G Fund Only	24.9%	13.9%	28.0%
Above Agency Match <sup>6</sup>	69.6%	57.0%	73.1%

The FRTIB report cited how FERS contributors deferred an average of 8.6% of their salary in 2005, while CSRS contributors averaged 7.5%. Both deferral rates have risen by 2007, but CSRS contributors have narrowed the gap: they average 9.0% while FERS contributors average 9.4%. FERS contributors are much more likely to contribute at levels above the 5% agency match maximum, however, as can be seen from the last line in Table 1.

Table 1 suggests CSRS employees maintain a higher average salary than FERS, and because deferral rates are so close, the average dollar amount deferred is nearly \$1,200 more for a CSRS participant. The higher salary is expected considering CSRS was the predecessor to FERS, thus consisting of more senior employees characterized by a longer average length of service. On the other hand, perhaps attributable to the lack of an agency match, CSRS employees exhibit a much smaller average TSP balance than FERS, \$52,959 versus \$78,888.

Interestingly, the proportion of CSRS employees allocating all their monies to the no-risk G Fund, 13.9%, is less than the proportion of FERS employees, 28.0%. This variable was our proxy for the most conservative investment strategy possible, anticipated to be more popular with the older CSRS population. The FRTIB report discussed changes in overall fund allocations. To simplify things, we chose to track this single rate. We suspected that inherently including non-active participants in rate computations could have been exacerbating the difference, considering all current FERS employees who choose not to participate still receive the automatic agency 1% deposits that default into

<sup>6</sup> CSRS employees do not have the incentive to receive an agency 5% match, which somewhat limits interpretation of this difference

the G fund. Additionally, the 70,838 CSRS employees with no TSP participation history are included in the denominator of the computations which would necessarily drive their rate lower. However, adjusting for this by filtering on active participants only marginally bridged the gap. We wonder if the defined-benefit nature of CSRS may instead promote a propensity to be more risk tolerant with the (voluntarily) tax-deferred monies contributed to TSP. It is not possible to determine whether CSRS employees have less risky investments outside of TSP, which may impact their risk tolerance with regard to tax-deferred investing.

The FRTIB report mentioned how participation, in terms of dollar amount and deferral percentage, is positively correlated with age and salary. Table 2 below demonstrates how this still appears the case, for both CSRS and FERS employees. These participation benchmarks are also correlated with length of service. The slight curtailment in the highest levels of age, salary, and length of service are likely a byproduct of the yearly IRS deferment limitations and not some other noteworthy trend. One trend markedly different between CSRS and FERS, however, is the overall participation rate. While FERS employees' participation rate generally notches upward as the three demographics increase, participation rate for CSRS employees actually decreases with age.



**Table 2.** Retirement Plan Trends in Participation by Age, Length of Service, and Salary.<sup>7</sup>

Demographic	Retirement Plan							
	CSRS				FERS			
	Count	Participation Rate	Average Deferral (Participants)	Average Deferral Rate (Participants)	Count	Participation Rate	Average Deferral (Participants)	Average Deferral Rate (Participants)
<u>Age</u>								
A. < 20	--	--	--	--	73	56.2%	\$1,493	5.2%
B. 20-29	--	--	--	--	86,382	87.0%	\$3,590	6.8%
C. 30-39	--	--	--	--	242,952	89.2%	\$5,288	8.0%
D. 40-49	49,278	74.9%	\$5,940	7.1%	422,774	89.9%	\$6,717	9.1%
E. 50-59	210,362	73.4%	\$7,874	9.2%	312,557	90.5%	\$7,816	10.7%
F. 60-69	60,341	70.3%	\$9,022	10.0%	84,827	91.4%	\$8,735	12.0%
G. 70 +	5,209	57.3%	\$9,257	10.1%	4,451	90.0%	\$9,660	12.7%
<u>Salary Level</u>								
A. < \$50k	53,941	54.1%	\$2,860	6.7%	380,287	81.4%	\$2,917	7.3%
B. \$50-100k	191,147	73.4%	\$6,708	8.9%	624,467	93.1%	\$7,116	10.1%
C. \$100-150k	73,070	84.0%	\$11,966	10.3%	135,024	97.5%	\$12,539	11.1%
D. \$150k+	7,046	84.8%	\$14,580	9.2%	14,238	96.8%	\$14,869	9.9%
<u>Length of Service</u>								
A. < 5	--	--	--	--	200,787	86.1%	\$4,686	7.8%
B. 5-10	--	--	--	--	307,816	88.5%	\$5,851	8.9%
C. 11-20	5,078	71.3%	\$6,522	9.0%	405,258	91.3%	\$7,346	9.8%
D. 21-30	174,822	74.4%	\$7,449	8.8%	227,877	92.1%	\$7,950	10.3%
E. 30+	144,676	71.0%	\$8,282	9.3%	12,278	91.3%	\$9,404	11.3%

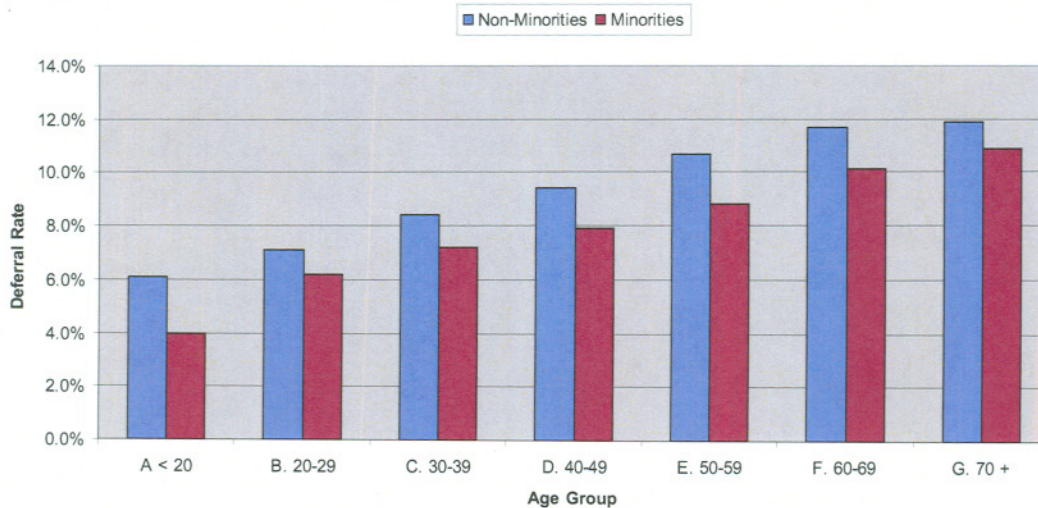
<sup>7</sup> Sparse data for CSRS employees under 40 years old and those with less than 11 years of service was suppressed.

### 3.2 Comparison by Minority Status

Table 3 allows for a side-by-side comparison of minorities versus non-minorities across numerous participation benchmarks, each broken out by age, length of service, and salary level. We see many of the participation behavior trends across demographics continue, as the “All” row at the top of the table body summarizes broadly. The persistent conclusion is that minorities trail non-minorities in most measured categories.

Minorities are generally less likely to participate (82.5% versus 87.8% of non-minorities) and, on average, have been a part of TSP for a shorter period of time (8.8 years versus 10.1 years). Despite this, there is no significant difference in average length of service, suggesting minorities may take longer after entering the Federal service to begin deferments. Of active participants, minorities defer smaller amounts, both in terms of absolute dollar amounts and salary percentage. Minorities contribute an average of \$5,564, about 25% less than non-minorities, who contribute an average of \$7,470.<sup>8</sup> Furthermore, the deferral rate of minorities of 8.1% is roughly 17% less than the non-minority deferral rate of 9.8%. Figure 1 demonstrates how minorities and non-minorities both exhibit increasing deferral rate trend with age, yet minorities are consistently behind. Lastly, the table suggests minorities tend to be more conservative with their investments, as 31.1% have account allocations dedicated entirely to the G Fund. Conversely, only 22.0% of non-minorities invest exclusively in the G Fund.

**Figure 1. Deferral Rate Comparisons by Age.**



The data indicates that the only demographic comparison where minorities may be ahead of non-minorities is within the highest salary level, \$150,000 and above. In this cohort, the minority participation rate and salary deferral percentage are actually higher than non-

<sup>8</sup> The figures are laudable since Federal employees evidently sock away more each month into TSP than the Ariel-Schwab study suggests is typical. In fact, minorities in the TSP apparently contribute more each month than the average White investor, as estimated from the Ariel-Schwab study.



minorities, and several of the other benchmarks such as accumulated TSP balance are much closer than other cohorts.

Though absolute values of discrepancies reported in Table 3 may appear harmless, over time they can drastically affect accumulated wealth. As of the end of 2007, the average minority TSP balance was \$54,430, about 33% less than the average non-minority balance of \$81,152.

**Table 3.** Participation Statistics by Minority Status and Age, Length of Service, and Salary.

Demographic	Participate		Ever Participate		Average Years in TSP		Average Deferral (Participants)		Average TSP Balance		Average Deferral (Participants)		G Fund Only	
	Minority Status		Minority Status		Minority Status		Minority Status		Minority Status		Minority Status		Minority Status	
	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
All	87.8%	82.5%	91.0%	89.0%	10.1	8.8	\$7,470	\$5,564	\$81,152	\$54,430	9.8%	8.1%	22.0%	31.1%
<u>Age</u>														
A. < 20	55.0%	57.6%	70.0%	66.7%	0.6	0.6	\$1,827	\$1,106	\$1,460	\$1,165	6.1%	4.0%	80.0%	93.9%
B. 20-29	89.1%	83.3%	91.9%	88.3%	2.9	2.7	\$3,820	\$3,147	\$13,588	\$10,951	7.1%	6.2%	39.5%	54.2%
C. 30-39	91.2%	85.7%	94.2%	91.6%	6.1	5.8	\$5,718	\$4,519	\$45,269	\$33,354	8.4%	7.2%	24.2%	35.1%
D. 40-49	90.5%	84.3%	93.8%	91.7%	10.9	9.6	\$7,210	\$5,535	\$94,441	\$62,838	9.4%	7.9%	19.5%	29.3%
E. 50-59	85.4%	79.7%	88.8%	86.5%	11.7	10.3	\$8,485	\$6,235	\$89,962	\$60,610	10.7%	8.8%	20.0%	27.2%
F. 60-69	83.9%	79.5%	86.6%	84.0%	11.8	11.1	\$9,367	\$7,361	\$97,741	\$74,345	11.7%	10.1%	23.4%	27.1%
G. 70 +	74.0%	68.7%	76.6%	71.6%	11.6	10.4	\$9,814	\$8,700	\$106,689	\$86,871	11.9%	10.9%	27.8%	23.6%
<u>Salary Level</u>														
A. < \$50k	80.5%	74.6%	85.3%	83.3%	6.7	6.3	\$3,194	\$2,508	\$26,308	\$19,689	7.8%	6.4%	38.4%	47.9%
B. \$50-100k	89.4%	86.4%	92.3%	91.9%	10.5	9.9	\$7,400	\$6,196	\$77,759	\$61,448	10.3%	8.9%	18.1%	22.3%
C. \$100-150k	92.8%	92.4%	94.9%	95.4%	13.7	13.0	\$12,597	\$11,490	\$162,724	\$142,508	11.0%	10.2%	11.1%	12.1%
D. \$150k+	92.6%	93.8%	94.8%	95.7%	13.3	11.9	\$14,830	\$14,606	\$214,705	\$208,201	9.6%	9.8%	14.5%	17.3%
<u>Length of Service</u>														
A. < 5	87.6%	83.2%	90.7%	87.8%	2.4	2.2	\$4,949	\$4,164	\$15,346	\$12,197	8.0%	7.3%	45.4%	57.4%
B. 5-10	90.4%	84.9%	92.5%	89.3%	5.2	4.9	\$6,281	\$5,003	\$41,861	\$31,569	9.3%	8.1%	29.8%	41.3%
C. 11-20	93.3%	86.6%	96.2%	94.0%	12.1	11.0	\$7,951	\$6,040	\$111,000	\$77,501	10.4%	8.6%	15.9%	24.1%
D. 21-30	86.1%	80.7%	90.0%	88.8%	14.4	12.8	\$8,455	\$6,124	\$114,491	\$76,067	10.4%	8.3%	14.5%	20.7%
E. 30+	74.1%	69.1%	78.3%	75.9%	12.2	10.5	\$9,297	\$6,122	\$73,725	\$43,206	10.2%	7.6%	13.9%	17.2%

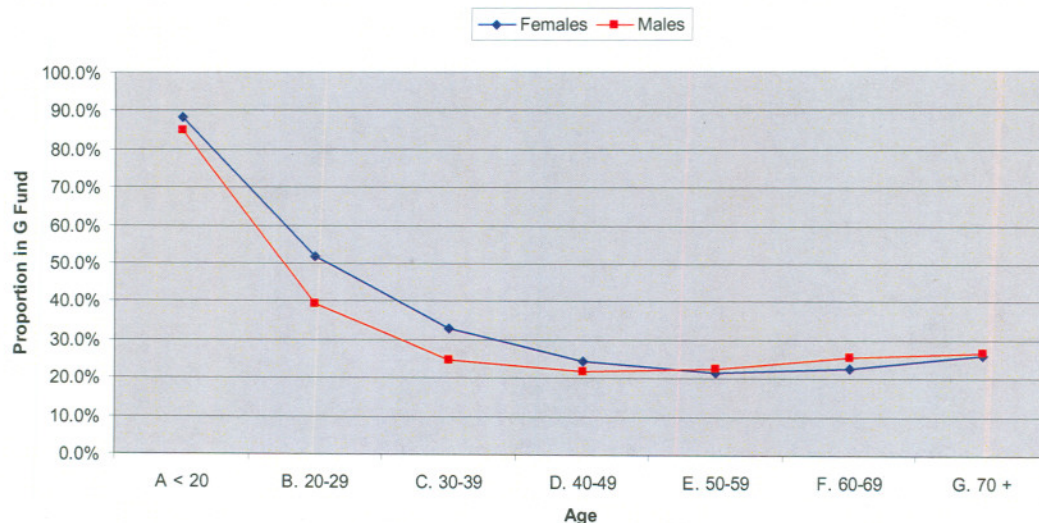


### 3.3 Comparison by Gender

Table 4 contrasts participation statistics by gender. At first glance, differences appear less severe than those attributed to minority status; women trail men across most benchmarks, but the marginal differences are smaller in magnitude. Women are actually slightly more likely to participate in TSP—86.4% of women versus 85.8% of men—but they contribute less money, in both absolute dollar amount and as a percentage of salary. We found the proportion of women invested strictly in the no-risk G fund, 26.2%, is a shade higher than the proportion of males, 24.1%. Interestingly, women across all age, length of service, and salary levels boast a longer duration in TSP, even though there is no notable difference in length of service. Yet despite the seemingly narrow differences, the mean balance of a female's account, \$62,527, is 22% less than the mean male balance of \$79,819. We acknowledge we lack information regarding breaks in service or other job-related changes prior to the study period that may further explain the lower numbers.

Investment behavior differences across age may best explain why females' accumulated savings fall short. Figure 2 below illustrates how for younger ages, the proportion of females invested solely in the G fund is higher than males, and the trend reverses toward older age cohorts. Similar trends are observed when following participation and deferral rates. Combined, these findings suggest females act sooner than males to begin deferring a portion of their salary, although they act slower to take on more risk, at least the amount of risk that the data suggests males take. Considering riskier investments strategies, at least defined by *some* exposure to bonds and equities, have historically produced higher rates of return and factoring in the importance of early contributions to compounding interest, one might expect females to have less wealth accumulated by the time they retire.

**Figure 2.** Proportion Invested Solely in No-Risk G Fund, by Age Cohort.



**Table 4.** Participation Statistics by Gender and Age, Length of Service, and Salary.

Demographic	Participate		Ever Participate		Average Years in TSP		Average Deferral (Participants)		Average TSP Balance		Average Deferral (Participants)		G Fund Only	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
<u>All</u>	86.4%	85.8%	91.4%	89.6%	10.0	9.4	\$6,153	\$7,416	\$62,527	\$79,819	8.8%	9.7%	26.2%	24.1%
<u>Age</u>														
A. < 20	53.8%	57.4%	69.2%	68.1%	0.5	0.7	\$998	\$1,750	\$1,013	\$1,500	3.5%	6.0%	88.5%	85.1%
B. 20-29	86.5%	87.4%	90.5%	90.7%	2.8	2.8	\$3,271	\$3,831	\$11,662	\$13,391	6.2%	7.3%	51.9%	39.3%
C. 30-39	88.1%	89.9%	93.1%	93.3%	6.4	5.8	\$4,754	\$5,669	\$37,354	\$43,316	7.2%	8.6%	32.8%	24.9%
D. 40-49	87.4%	89.0%	93.2%	93.0%	10.7	10.2	\$5,874	\$7,266	\$69,186	\$94,836	8.3%	9.4%	24.3%	21.8%
E. 50-59	85.5%	82.2%	90.3%	86.3%	11.7	10.9	\$7,126	\$8,415	\$71,480	\$88,623	9.8%	10.5%	21.6%	22.7%
F. 60-69	84.7%	81.4%	88.2%	84.4%	12.2	11.2	\$7,759	\$9,553	\$79,727	\$98,700	11.1%	11.4%	22.7%	25.5%
G. 70 +	72.3%	72.4%	75.3%	74.9%	11.7	11.0	\$7,305	\$10,821	\$74,156	\$116,733	11.3%	11.8%	25.9%	26.8%
<u>Length of Service</u>														
A. < 5	86.6%	85.7%	90.7%	89.1%	2.3	2.3	\$4,103	\$5,109	\$12,577	\$15,458	7.1%	8.2%	55.7%	45.2%
B. 5-10	88.1%	88.7%	91.6%	91.3%	5.3	5.0	\$5,219	\$6,267	\$34,609	\$40,665	8.2%	9.4%	36.9%	31.8%
C. 11-20	90.6%	91.4%	96.0%	95.0%	12.2	11.4	\$6,565	\$7,962	\$86,734	\$110,255	9.3%	10.2%	19.4%	18.0%
E. 21-30	84.4%	84.4%	90.3%	89.1%	13.7	14.2	\$6,933	\$8,476	\$81,870	\$120,422	9.3%	10.1%	16.4%	16.4%
E. 30+	77.0%	69.5%	82.3%	74.4%	12.1	11.3	\$7,318	\$9,209	\$54,899	\$71,241	8.9%	9.9%	15.3%	14.5%
<u>Salary Level</u>														
A. < \$50k	79.3%	76.6%	86.4%	82.4%	7.4	5.6	\$2,741	\$3,102	\$24,542	\$22,305	6.8%	7.6%	41.6%	43.4%
B. \$50-100k	89.3%	87.9%	93.6%	91.2%	11.0	9.8	\$6,685	\$7,296	\$67,141	\$76,745	9.4%	10.2%	19.4%	19.5%
C. \$100-150k	94.6%	91.8%	96.9%	94.0%	13.9	13.4	\$12,323	\$12,374	\$151,629	\$161,571	10.9%	10.8%	10.4%	11.8%
D. \$150k+	95.8%	91.8%	97.2%	94.2%	13.0	12.9	\$15,043	\$14,684	\$220,684	\$210,531	10.0%	9.6%	14.2%	15.4%



## 4. Discussion

We found that as of the end of 2007, both FERS and CSRS participation rates increased from 2005 levels, with the CSRS increase of roughly 6% particularly poignant. Along similar lines, it is interesting to observe participation rates increasing for CSRS and FERS employees with length of service and pay, yet only FERS participation rate increases with age—CSRS actually decreases slightly. This was a new factor analyzed since the prior FRTIB report did not have the luxury of CSRS Federal employees with no TSP participation history. Also, we unexpectedly discovered CSRS participants tend to be less conservative in their investment strategy, at least as measured by our proxy indicator variable specifying all TSP monies allocated to the G Fund. We suspect this is due to the fixed annuity feature of the CSRS plan.

Unfortunately, we found a pervasive trend of minorities lagging behind non-minorities in virtually all participation benchmarks at the aggregate level, such as participation rate, deferral amount/rate, and length of time participating. We also discovered minority employees tend to invest more conservatively. The only potential inconsistency relative to this trend is within the highest salary cohort, those who make \$150,000 and above. And while the differences appear minor at first glance, over time the aggregate affect on accumulated wealth can be substantial. For example, the average TSP balance for minorities is 33% less than that of non-minorities.

Discrepancies are evident between males and females as well, though on the whole, appear smaller in magnitude as compared to those cited between minorities and non-minorities. Women are more prompt than men to begin voluntary TSP contributions, yet they defer a smaller percentage of their salary and are less risk-tolerant in early years. These factors, in addition to acknowledging males average a higher salary<sup>9</sup>, provide insight as to why the average TSP balance for females is about 22% less than the average balance for males.

Where pertinent in this paper, we have touched on potential limitations and differences in comparing our analysis dataset and derived variables with the FRTIB report. One such difference lies in the deferral rate, which is not a known constant and must be approximated. We elected to limit analysis to only full-time, permanently employed Executive branch personnel identifiable through CPDF as having been on board for all of 2007, estimating deferral rate by using the average salary on the start and end of the year. Another plausible approximation used by FRTIB in their report pulls in one's salary as of June and inserts that into the denominator. Both approximations use yearly employee contribution in the numerator. There is some reason to believe, then, that deferral rates in our analysis might be somewhat higher, particularly if new hires during a given year are included in the FRTIB analysis dataset.

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<sup>9</sup> Adjusted basic pay of the study population, taken from CPDF as of December 31, 2007, showed average male salary is \$73,738 versus \$65,881 for females.

As we look toward the future, it will be interesting to monitor what affect, if any, the recent downturn in stock market performance will have on trends noted herein. Future research could thus replicate tables presented in this paper and expand analysis for TSP data beyond 2007. There is also ample room to incorporate additional variables available in CPDF such as agency or education level.



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