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Retirement Savings Accounts: Fees, Expenses, and Account Balances

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Summary

According to the U.S. Department of Labor, 43% of private-sector employees participated in defined contribution retirement plans, such as those authorized under §401(k) of the Internal Revenue Code, in March 2007. The amount that these workers will have accumulated in their retirement accounts by the time they retire will depend on a number of factors, including the extent to which the expenses incurred to administer the plans are borne by plan participants. For this reason, it is important for participants in 401(k) plans to understand the fees and expenses that they pay and the services that they receive in exchange for paying these expenses.

Whether participants in 401(k) plans are able to identify the fees and expenses that they pay has become a topic of interest both to Congress and the Department of Labor. On March 6, 2007, the House Committee on Education and Labor held a hearing on the subject of fees paid by participants in 401(k) plans. On April 30, 2007, the Department of Labor published a notice of its intent to propose regulations that will require plan sponsors to provide clearer and more detailed information about fees and expenses to plan participants.

According to the Investment Company Institute (ICI), the average asset-weighted expense ratio for stock mutual funds in 401(k) plans in 2006 was 0.76%. For this report, CRS estimated the effect of expenses ranging from 0.4% to 2.0% of assets on the amounts accumulated in retirement accounts over a thirty-year period by married couples and single persons with high, median, and low earnings who contribute 6%, 8%, or 10% of earnings each year to a retirement account invested in a mix of stocks and bonds. We compared annual expenses of 0.8%, 1.2%, 1.6%, and 2.0% of plan assets to a low-cost "base case" in which annual expenses were equal to 0.4% of assets in the account.

The results of the analysis indicate that expenses paid by plan participants can substantially reduce their retirement account balances. Based on the distribution of rates of return in U.S. stock and bond markets over the 80-year period from 1926 through 2005, a median-earning couple who contribute 6% of family earnings each year for 30 years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $356,434 in constant 2004 dollars if investment rates of return are at the historical median over the investment period and annual expenses are equal to 0.4% of plan assets. With annual expenses equal to 2.0% of plan assets, this couple could expect to accumulate $263,663, or 26.0% less than under the low-cost plan. A median-earning single person who contributes 6% of earnings each year for 30 years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $187,738 in constant 2004 dollars if investment rates of return are at the historical median over the investment period and annual expenses are equal to 0.4% of plan assets. With annual expenses equal to 2.0% of plan assets, the individual could expect to accumulate $138,344, or 26.3% less than under the low-cost plan.

This report will not be updated.

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According to the U.S. Department of Labor, 51% of all private-sector employees in the United States participated in employer-sponsored retirement plans in March 2007. An estimated 43% of private-sector employees participated in *defined contribution* plans, while just 20% participated in *defined benefit* plans.[1] Defined contribution plans, such as those authorized under §401(k) of the Internal Revenue Code (I.R.C.), are much like savings accounts maintained by an employer on behalf of each participating employee.[2] The employer and/or employee contribute to an account, which is usually invested in stocks and bonds. When the worker retires, he or she receives the balance in the account — the sum of all past contributions plus interest, dividends, and capital gains (or losses) — as a lump sum or in a series of payments. In a defined benefit plan, the participant earns a benefit that is typically based on length of service and final pay or average pay. The employer is responsible for funding a defined benefit plan and must ensure that the plan has sufficient assets to pay the benefits that have been earned by the plan's participants.

Because most employer-sponsored retirement plans are defined contribution plans, workers bear much of the responsibility for accumulating the assets that will provide their income in retirement. The amount that a worker will have accumulated in his or her retirement account by the time he or she retires will depend on a number of factors, including

- the age at which contributions to the plan begin;
- the number of years over which contributions are made;
- the amount contributed to the plan each year by the employer and employee;
- whether any withdrawals are taken from the account before retirement;
- the annual rate of return on investment of the assets in the account; and
- the extent to which the rate of return on investment is reduced by fees and expenses that are borne by the plan participants.

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[1] About 12% of workers participated in both types of plans. (43 + 20 = 63. 63 - 51 = 12.) *National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2007*. U.S. Department of Labor, Bureau of Labor Statistics, Summary 07-05, August 2007. [http://www.bls.gov/ncs/ebs/sp/ebsm0006.pdf]

[2] §401(k) of the Internal Revenue Code authorizes deferral of income taxes until retirement on qualifying individual accounts sponsored by employers for their employees.

An earlier Congressional Research Service (CRS) report described the effects of the number of years of saving, the amount contributed to the plan, and the rate of return on investment on workers' potential account balances at retirement.[3] This CRS report presents estimates of the effect of fees and other expenses paid by participants in retirement plans on their account balances at retirement.

Background on Fees and Expenses in 401(k) Plans

The Employee Retirement Income Security Act of 1974 (ERISA, P.L. 93-406) requires that anyone acting as a fiduciary with respect to a retirement plan must act "solely in the interest of the participants and beneficiaries" of the plan and "for the exclusive purpose of . . . providing benefits to participants and their beneficiaries and . . . defraying reasonable expenses of administering the plan."[4] The Department of Labor has in regulations construed this statute as requiring the employers who offer 401(k) plans to their workers to monitor the fees and expenses charged to plan participants to assure that they are reasonable. Plan sponsors are required to provide participants with regular statements of their accrued benefits under the plan, and they must file reports with the Departments of Labor and Treasury that include the fees and expenses associated with operating the plan. Whether participants in 401(k) plans are able to identify the fees and expenses that they are required to pay has become a topic of interest both to Congress and the Department of Labor. On March 6, 2007, the House Committee on Education and Labor held a hearing on the subject of fees paid by participants in 401(k) plans.[5] On April 30, 2007, the Department of Labor published a notice of its intent to propose regulations requiring plan sponsors to provide participants with "the information they need, including information about fees and expenses, to make informed investment decisions."[6]

Employers often hire financial institutions to operate their retirement plans. The cost of the services provided by these institutions is typically borne in part by the employer that sponsors the plan and in part by the plan participants. The services necessary to operate a 401(k) plan or other defined contribution plan include maintaining the financial records of the plan, processing participant contributions and withdrawals, tracking account balances, and preparing monthly or quarterly account statements. Some plans allow participants to borrow from their accounts, and the cost of processing plan loans is borne by the plan's participants. In addition, the plan administrator is responsible for filing annual reports with the Department of Labor and the Internal Revenue Service. The specific arrangements by which the plan administrator charges fees to the plan sponsor for these services vary from plan to

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[3] CRS Report RL33845, *Retirement Savings: How Much Will Workers Have When They Retire?* by P. Purcell and D. Whitman.

[4] ERISA §404(a)(1); 29 U.S.C. §1104(a)(1). A *fiduciary* is someone who holds a position of trust or confidence with respect to the property of another.

[5] "Are Hidden 401(k) Fees Undermining Retirement Security?" Committee on Education and Labor, U.S. House of Representatives, March 6, 2007. [http://edlabor.house.gov/hearings/fc030607.shtml]

[6] *Federal Register*, vol. 72, no. 82, April 30, 2007, p. 22845.

plan, as do the ways that these costs are shared among the plan sponsor and the plan participants.

The fees paid by plan participants for the services provided by the plan's administrator usually are expressed as the ratio of these costs to the value of plan assets. The total value of plan assets, the number of participants, the average account balance, and the kind of investments offered by the plan all affect the plan's expense ratio. Plans sponsored by large employers often have below-average expenses, while plans offered by small employers often have above-average expenses. Large employers are able to spread the fixed costs of establishing and maintaining a plan over more accounts and also may be able to negotiate discounts with fund managers because of the large volume of assets that will be under management. Small employers have fewer accounts over which to spread their fixed costs and are less likely to be able to negotiate lower fees with fund managers. Plans typically offer a range of investment options, including money market funds, bond funds, and stock funds. Money market funds and bond funds typically have lower expenses than stock funds but also have lower average rates of return. Among stock funds, those that track a stock market index usually have lower expenses than actively managed funds that attempt to achieve rates of return in excess of the market indices.

According to the Investment Company Institute (ICI), the average asset-weighted expense ratio for stock mutual funds in 401(k) plans in 2006 was 0.76%.[7] Expense ratios vary widely around this average, however. The ICI estimates that 77% of 401(k) plan stock mutual fund assets were invested in funds with expense ratios less than 1.0% in 2006. Only 3% of 401(k) plan stock mutual fund assets were invested in funds with expense ratios more than 1.5% in 2006, according to the ICI. However, because these expense ratios are asset-weighted, more than 3% of individual participants' 401(k) accounts had expense ratios of more than 1.5%. Mutual funds, which comprise more than half of all assets held in 401(k) plans, also incur the cost of buying and selling securities. According to the ICI, "while these costs are not included in the fund's total expense ratio, they are reflected in the calculation of net return to the investor."[8]

Results

For this report, CRS estimated the effect of expense ratios ranging from 0.4% to 2.0% on the amounts accumulated in retirement accounts over a thirty-year period by married couples and single persons with high, median, and low earnings who contribute 6%, 8%, or 10% of earnings each year to a retirement account invested in a mix of stocks and bonds. We compared annual expenses of 0.8%, 1.2%, 1.6%, and 2.0% of plan assets to a low-cost "base case" in which annual expenses were equal to 0.4% of assets in the account.

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[7] "The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2006." *Research Fundamentals*, vol. 16, no. 4. The Investment Company Institute, Washington, DC. September 2007, page 10. [http://www.ici.org/home/fm-v16n4.pdf]

[8] Ibid, page 13. The trading activity of a mutual fund is measured through its "turnover ratio," which is not easily converted into an expense measured as a percentage of assets.

The results of the analysis are displayed in **Table 1** through **Table 9**. Tables 1 through 3 illustrate the effects of expenses on account balances accumulated by couples and singles who contribute 6% of earnings to a retirement account each year. Tables 4 through 6 illustrate the effects of expenses on account balances accumulated by couples and singles who contribute 8% of earnings to a retirement account each year. Tables 7 through 9 illustrate the effects of expenses on account balances accumulated by couples and singles who contribute 10% of earnings to a retirement account each year.

In **Table 1**, the top panel of the table (Panel 1) shows the estimated amount that would be accumulated in a retirement account after thirty years by high-earner, median-earner, and low-earner couples that each contribute 6% of earnings every year to a retirement account of which two-thirds is invested in the *Standard and Poor's 500* index of common stocks and one-third is invested in AAA-rated corporate bonds. The account balances are expressed in constant 2004 dollars. High earners were defined in this analysis as couples and singles that each year earn an amount equal to the 75th percentile of earnings for their age and marital status. Median earners were defined as couples and singles that each year earn an amount equal to the 50th percentile of earnings for their age and marital status. Low earners were defined as couples and singles that each year earn an amount equal to the 25th percentile of earnings for their age and marital status.

Panel 1 of **Table 1** shows the estimated account balances in a retirement plan in which annual management and investment expenses total 0.4% (40 basis points) of the account balance. Based on the distribution of rates of return in U.S. stock and bond markets over the 80-year period from 1926 through 2005, a median-earning couple who contribute 6% of family earnings each year for 30 years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $356,434 in constant 2004 dollars if investment rates of return are at the median over the 30-year period. Based on the estimated distribution of rates of return, there is a 90% probability that their account balance, measured in 2004 dollars, would be between $155,943 and $819,955. These amounts represent the account balances that would occur if investment rates of return were at the 5th percentile and the 95th percentile, respectively, of the distribution of likely rates of return. Likewise, a median-earning single person who contributes 6% of earnings each year for 30 years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $187,738 in constant 2004 dollars if investment rates of return are at the median over the 30-year period. Based on the estimated distribution of rates of return, there is a 90% probability that the account balance, measured in 2004 dollars, would be between $82,099 and $431,797.

Panel 2 through Panel 5 of **Table 1** show the account balances in 2004 dollars that would be accumulated under the same scenario as Panel 1, but with expenses equal to 0.8%, 1.2%, 1.6%, and 2.0%, respectively, of plan assets. With annual expenses equal to 2.0% of plan assets, a median-earning couple who contribute 6% of family earnings each year for 30 years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $263,663 in constant 2004 dollars if investment rates of return are at the median over the 30-year period. (See Panel 5 of Table 1.) With annual expenses equal to 2.0% of plan assets, a median-earning single person who contributes 6% of earnings each year for 30

years to a retirement account that is invested two-thirds in stocks and one-third in bonds could expect to accumulate $138,344 in constant 2004 dollars if investment rates of return are at the median over the 30-year period.

Table 2 shows the effect of higher expenses on retirement account balances, expressed as the difference in constant 2004 dollars between the estimated amount accumulated in a low-cost account compared to the estimated amounts accumulated in higher-cost accounts. Panel 1 of Table 2 is identical to Panel 1 of Table 1. It shows estimated account balances under the base case scenario in which expenses equal 0.4% of plan assets. Panel 2 through Panel 5 of Table 2 show the difference in account balances due to higher expenses, expressed in constant 2004 dollars. For example, the difference in the estimated median account balance for a median-earning couple investing in an account in which expenses equal 0.4% of plan assets ($356,434) and their median account balance in a plan in which expenses equal 2.0% of plan assets ($263,663) is $92,771. (See Panel 5 of Table 2). Similarly, the difference in the estimated median account balance for a median-earning single person investing in an account in which expenses equal 0.4% of plan assets ($187,738) and the median account balance in a plan in which expenses equal 2.0% of plan assets ($138,344) is $49,394.

Table 3 shows the effect of higher expenses on retirement account balances, expressed as the percentage difference between the estimated amount accumulated in a low-cost account and the estimated amounts accumulated in higher-cost accounts. Panel 1 of Table 3 is identical to Panel 1 of Table 1. It shows estimated account balances under the base case scenario in which expenses equal 0.4% of plan assets. Panel 2 through Panel 5 of Table 3 show the difference in account balances due to higher expenses, expressed as a percentage of the amount accumulated in a low-cost plan. For example, compared to the estimated median account balance for a median-earning couple investing in an account in which expenses equal 0.4% of plan assets ($356,434) the estimated median account balance in a plan in which expenses equal 2.0% of plan assets ($263,663) is 26.0% lower. (See Panel 5 of Table 3). Similarly, compared to the estimated median account balance for a median-earning single person investing in an account in which expenses equal 0.4% of plan assets ($187,738) the estimated median account balance in a plan in which expenses equal 2.0% of plan assets ($138,344) is 26.3% lower.

Tables 4 through 9 follow the same layout as previous tables. They differ only in that **Tables 4 through 6** show estimated account balances for couples and singles who invest 8% of pay over 30 years, and **Tables 7 through 9** show estimated account balances for couples and singles who invest 10% of pay over 30 years.

Methods

The estimates presented in **Tables 1 through 9** are based on earnings data by age and marital status derived from the March 2005 Current Population Survey. We used as our estimate of future real earnings growth the 1.1% annual rate of growth in real earnings that was developed by the actuaries of the Social Security Administration for their most recent estimate of the long-run solvency of the Social

Security program. The estimated account balances are based on assumed annual contributions to a retirement plan of 6% (**Tables 1 through 3**), 8% (**Tables 4 through 6**), and 10% (**Tables 7 through 9**) of family earnings. This is the most common range of contribution amounts observed in the Federal Reserve Board's 2004 *Survey of Consumer Finances*. The estimated account balances are based on two-thirds of account assets being invested in common stocks and one-third of plan assets being invested in corporate bonds. This is the average distribution of plan assets in the data base of 401(k) plans jointly maintained by the Employee Benefit Research Institute and the Investment Company Institute.[9]

We estimated the amounts accumulated in retirement accounts through a Monte Carlo process, using proprietary software called *@RISK*, which was developed by the Palisade Corporation. The key inputs to these estimates, in addition to the estimates of earnings and the assumed rate of annual contributions to the retirement accounts, is the estimated future real rates of return on investment in stocks and bonds and the correlation between the rates of return on these two classes of assets. Our estimates are based on the annual real rates of return on the *Standard and Poor's 500* index of common stocks and the annual real rates of return on AAA-rated corporate bonds over the period from 1926 through 2005. The *@RISK* software program uses these historical data to determine the shape of the distribution of rates of return for each type of asset and the correlation between these rates of return. On the basis of these distributions and correlations, thousands of simulations are run in which the annual rate of return on each asset is chosen from the possible range of rates of return, as determined by the shape of the distribution. In our simulations, each 30-year period of investment returns was simulated 5,000 times. The results generated by the simulations include the estimated mean and median account balances, as well as the balances generated by the rates of return at the 5^{th} and 95^{th} percentiles of likely rates of return.[10]

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[9] "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2006," EBRI Issue Brief No. 308, August 2007. [http://www.ebri.org/publications/ib/index.cfm?fa=ibDisp&content_id=3741]

[10] For a more complete description of Monte Carlo estimation processes, see CRS Report RL33845, *Retirement Savings: How Much Will Workers Have When They Retire?*, by Patrick Purcell and Debra B. Whitman. [http://www.congress.gov/erp/rl/pdf/RL33845.pdf]

Table 1. Account Balances Based on 6% Annual Contribution

Panel 1:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$611,751	$406,243	$250,703	$343,417	$213,913	$125,152	5.6%
Median	$538,201	$356,434	$219,522	$301,712	$187,738	$109,804	5.6%
5th percentile	$238,067	$155,943	$94,528	$132,614	$82,099	$47,855	1.3%
95th percentile	$1,225,915	$819,955	$508,973	$692,687	$431,797	$253,142	9.8%

Panel 2:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$579,849	$384,798	$237,253	$325,228	$202,547	$118,506	5.1%
Median	$507,441	$336,104	$206,185	$283,680	$176,639	$103,337	5.1%
5th percentile	$229,681	$150,354	$91,188	$127,552	$79,129	$46,168	0.9%
95th percentile	$1,183,986	$790,708	$491,660	$668,210	$416,637	$243,986	9.4%

Panel 3:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$536,592	$355,729	$219,065	$300,656	$187,190	$109,508	4.7%
Median	$472,625	$312,521	$192,074	$263,954	$164,354	$96,187	4.7%
5th percentile	$217,303	$141,696	$85,932	$120,714	$74,725	$43,576	0.5%
95th percentile	$1,068,467	$712,519	$441,031	$600,589	$374,681	$219,373	8.9%

Panel 4:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$497,062	$329,212	$202,503	$278,265	$173,197	$101,313	4.3%
Median	$439,763	$290,726	$178,159	$245,477	$152,682	$89,275	4.3%
5th percentile	$193,753	$126,604	$76,690	$107,884	$66,757	$38,911	0.0%
95th percentile	$1,008,731	$672,452	$417,250	$567,119	$354,377	$207,493	8.6%

Panel 5:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$455,942	$301,612	$185,261	$254,980	$158,634	$92,777	3.8%
Median	$399,464	$263,663	$161,361	$222,702	$138,344	$80,961	3.9%
5th percentile	$188,311	$122,532	$74,161	$104,278	$64,600	$37,592	-0.4%
95th percentile	$913,068	$607,457	$376,665	$513,344	$320,172	$187,586	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 2. Effect of Expenses on Account Balance in Constant Dollars

Panel 1:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$611,751	$406,243	$250,703	$343,417	$213,913	$125,152	5.6%
Median	$538,201	$356,434	$219,522	$301,712	$187,738	$109,804	5.6%
5th percentile	$238,067	$155,943	$94,528	$132,614	$82,099	$47,855	1.3%
95th percentile	$1,225,915	$819,955	$508,973	$692,687	$431,797	$253,142	9.8%

Panel 2:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$31,902	-$21,445	-$13,450	-$18,189	-$11,366	-$6,646	5.1%
Median	-$30,760	-$20,330	-$13,337	-$18,032	-$11,099	-$6,467	5.1%
5th percentile	-$8,386	-$5,589	-$3,340	-$5,062	-$2,970	-$1,687	0.9%
95th percentile	-$41,930	-$29,246	-$17,313	-$24,477	-$15,159	-$9,156	9.4%

Panel 3:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$75,159	-$50,514	-$31,638	-$42,760	-$26,723	-$15,644	4.7%
Median	-$65,576	-$43,913	-$27,448	-$37,758	-$23,384	-$13,617	4.7%
5th percentile	-$20,764	-$14,247	-$8,595	-$11,900	-$7,375	-$4,279	0.5%
95th percentile	-$157,449	-$107,436	-$67,943	-$92,098	-$57,116	-$33,768	8.9%

Panel 4:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$114,689	-$77,031	-$48,200	-$65,152	-$40,716	-$23,839	4.3%
Median	-$98,438	-$65,708	-$41,364	-$56,236	-$35,056	-$20,529	4.3%
5th percentile	-$44,315	-$29,339	-$17,837	-$24,730	-$15,342	-$8,944	0.0%
95th percentile	-$217,184	-$147,503	-$91,724	-$125,568	-$77,420	-$45,649	8.6%

Panel 5:	**30 years of contributions, 6.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$155,810	-$104,630	-$65,442	-$88,437	-$55,278	-$32,375	3.8%
Median	-$138,737	-$92,771	-$58,162	-$79,010	-$49,394	-$28,843	3.9%
5th percentile	-$49,757	-$33,411	-$20,367	-$28,336	-$17,500	-$10,263	-0.4%
95th percentile	-$312,848	-$212,497	-$132,309	-$179,343	-$111,625	-$65,555	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 3. Effect of Expenses on Account Balance as a Percentage of Base Case

Panel 1: 30 years of contributions, 6.0% annual contribution rate, Expenses = 0.4% (Base case)							
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$611,751	$406,243	$250,703	$343,417	$213,913	$125,152	5.6%
Median	$538,201	$356,434	$219,522	$301,712	$187,738	$109,804	5.6%
5th percentile	$238,067	$155,943	$94,528	$132,614	$82,099	$47,855	1.3%
95th percentile	$1,225,915	$819,955	$508,973	$692,687	$431,797	$253,142	9.8%

Panel 2: 30 years of contributions, 6.0% annual contribution rate, Expenses = 0.8%							
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-5.2%	-5.3%	-5.4%	-5.3%	-5.3%	-5.3%	5.1%
Median	-5.7%	-5.7%	-6.1%	-6.0%	-5.9%	-5.9%	5.1%
5th percentile	-3.5%	-3.6%	-3.5%	-3.8%	-3.6%	-3.5%	0.9%
95th percentile	-3.4%	-3.6%	-3.4%	-3.5%	-3.5%	-3.6%	9.4%

Panel 3: 30 years of contributions, 6.0% annual contribution rate, Expenses = 1.2%							
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-12.3%	-12.4%	-12.6%	-12.5%	-12.5%	-12.5%	4.7%
Median	-12.2%	-12.3%	-12.5%	-12.5%	-12.5%	-12.4%	4.7%
5th percentile	-8.7%	-9.1%	-9.1%	-9.0%	-9.0%	-8.9%	0.5%
95th percentile	-12.8%	-13.1%	-13.3%	-13.3%	-13.2%	-13.3%	8.9%

Panel 4: 30 years of contributions, 6.0% annual contribution rate, Expenses = 1.6%							
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-18.7%	-19.0%	-19.2%	-19.0%	-19.0%	-19.0%	4.3%
Median	-18.3%	-18.4%	-18.8%	-18.6%	-18.7%	-18.7%	4.3%
5th percentile	-18.6%	-18.8%	-18.9%	-18.6%	-18.7%	-18.7%	0.0%
95th percentile	-17.7%	-18.0%	-18.0%	-18.1%	-17.9%	-18.0%	8.6%

Panel 5: 30 years of contributions, 6.0% annual contribution rate, Expenses = 2.0%							
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-25.5%	-25.8%	-26.1%	-25.8%	-25.8%	-25.9%	3.8%
Median	-25.8%	-26.0%	-26.5%	-26.2%	-26.3%	-26.3%	3.9%
5th percentile	-20.9%	-21.4%	-21.5%	-21.4%	-21.3%	-21.4%	-0.4%
95th percentile	-25.5%	-25.9%	-26.0%	-25.9%	-25.9%	-25.9%	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 4. Account Balances Based on 8% Annual Contribution

Panel 1:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$826,603	$548,965	$338,816	$464,053	$289,071	$169,138	5.6%
Median	$724,699	$479,853	$295,882	$405,565	$252,531	$147,784	5.6%
5th percentile	$323,993	$211,868	$129,323	$180,244	$111,664	$65,117	1.3%
95th percentile	$1,678,947	$1,124,060	$697,484	$946,833	$590,770	$346,257	9.8%

Panel 2:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$758,853	$503,514	$310,402	$425,564	$265,023	$155,046	5.1%
Median	$658,542	$435,434	$267,721	$368,391	$229,413	$133,976	5.1%
5th percentile	$301,344	$196,811	$119,270	$167,281	$103,531	$60,400	0.9%
95th percentile	$1,542,708	$1,028,985	$639,350	$870,555	$542,836	$318,251	9.4%

Panel 3:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$714,956	$474,018	$291,927	$400,615	$249,434	$145,927	4.7%
Median	$627,472	$414,795	$254,805	$350,689	$218,326	$127,649	4.7%
5th percentile	$283,012	$183,843	$111,296	$156,746	$97,113	$56,550	0.5%
95th percentile	$1,442,313	$961,671	$597,981	$812,218	$507,108	$297,101	8.9%

Panel 4:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$657,320	$435,300	$267,707	$367,954	$229,000	$133,948	4.3%
Median	$577,817	$382,207	$233,875	$322,842	$200,668	$117,337	4.3%
5th percentile	$263,304	$171,275	$104,072	$146,030	$90,390	$52,678	0.0%
95th percentile	$1,318,254	$878,905	$543,979	$738,299	$461,188	$270,482	8.6%

Panel 5:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$606,845	$401,440	$246,572	$339,348	$211,123	$123,478	3.8%
Median	$530,664	$349,913	$214,367	$296,124	$184,004	$107,504	3.9%
5th percentile	$244,598	$159,745	$96,606	$136,108	$84,186	$49,052	-0.4%
95th percentile	$1,206,041	$805,049	$498,822	$679,098	$423,401	$247,741	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 5. Effect of Fees on Account Balance in Constant Dollars

Panel 1:	**30 years of contributions, 8.0% annual contribution rate, Fees = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$826,603	$548,965	$338,816	$464,053	$289,071	$169,138	5.6%
Median	$724,699	$479,853	$295,882	$405,565	$252,531	$147,784	5.6%
5th percentile	$323,993	$211,868	$129,323	$180,244	$111,664	$65,117	1.3%
95th percentile	$1,678,947	$1,124,060	$697,484	$946,833	$590,770	$346,257	9.8%

Panel 2:	**30 years of contributions, 8.0% annual contribution rate, Fees = 0.8%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$67,750	-$45,451	-$28,414	-$38,488	-$24,048	-$14,092	5.1%
Median	-$66,157	-$44,418	-$28,161	-$37,174	-$23,118	-$13,808	5.1%
5th percentile	-$22,649	-$15,056	-$10,053	-$12,962	-$8,133	-$4,717	0.9%
95th percentile	-$136,239	-$95,075	-$58,135	-$76,278	-$47,934	-$28,006	9.4%

Panel 3:	**30 years of contributions, 8.0% annual contribution rate, Fees = 1.2%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$111,648	-$74,947	-$46,889	-$63,437	-$39,636	-$23,211	4.7%
Median	-$97,227	-$65,057	-$41,077	-$54,876	-$34,204	-$20,136	4.7%
5th percentile	-$40,982	-$28,025	-$18,026	-$23,497	-$14,551	-$8,566	0.5%
95th percentile	-$236,634	-$162,389	-$99,503	-$134,615	-$83,662	-$49,156	8.9%

Panel 4:	**30 years of contributions, 8.0% annual contribution rate, Fees = 1.6%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$169,283	-$113,666	-$71,109	-$96,099	-$60,071	-$35,189	4.3%
Median	-$146,882	-$97,646	-$62,007	-$82,723	-$51,862	-$30,447	4.3%
5th percentile	-$60,690	-$40,593	-$25,250	-$34,213	-$21,274	-$12,438	0.0%
95th percentile	-$360,693	-$245,155	-$153,506	-$208,534	-$129,582	-$75,775	8.6%

Panel 5:	**30 years of contributions, 8.0% annual contribution rate, Fees = 2.0%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$219,759	-$147,525	-$92,244	-$124,705	-$77,948	-$45,659	3.8%
Median	-$194,035	-$129,940	-$81,514	-$109,441	-$68,526	-$40,281	3.9%
5th percentile	-$79,395	-$52,122	-$32,717	-$44,135	-$27,478	-$16,065	-0.4%
95th percentile	-$472,906	-$319,011	-$198,663	-$267,736	-$167,369	-$98,516	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account fees.
Source: Congressional Research Service.

Table 6. Effect of Expenses on Account Balance as a Percentage of Base Case

Panel 1:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$826,603	$548,965	$338,816	$464,053	$289,071	$169,138	5.6%
Median	$724,699	$479,853	$295,882	$405,565	$252,531	$147,784	5.6%
5th percentile	$323,993	$211,868	$129,323	$180,244	$111,664	$65,117	1.3%
95th percentile	$1,678,947	$1,124,060	$697,484	$946,833	$590,770	$346,257	9.8%

Panel 2:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-8.2%	-8.3%	-8.4%	-8.3%	-8.3%	-8.3%	5.1%
Median	-9.1%	-9.3%	-9.5%	-9.2%	-9.2%	-9.3%	5.1%
5th percentile	-7.0%	-7.1%	-7.8%	-7.2%	-7.3%	-7.2%	0.9%
95th percentile	-8.1%	-8.5%	-8.3%	-8.1%	-8.1%	-8.1%	9.4%

Panel 3:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-13.5%	-13.7%	-13.8%	-13.7%	-13.7%	-13.7%	4.7%
Median	-13.4%	-13.6%	-13.9%	-13.5%	-13.5%	-13.6%	4.7%
5th percentile	-12.6%	-13.2%	-13.9%	-13.0%	-13.0%	-13.2%	0.5%
95th percentile	-14.1%	-14.4%	-14.3%	-14.2%	-14.2%	-14.2%	8.9%

Panel 4:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-20.5%	-20.7%	-21.0%	-20.7%	-20.8%	-20.8%	4.3%
Median	-20.3%	-20.3%	-21.0%	-20.4%	-20.5%	-20.6%	4.3%
5th percentile	-18.7%	-19.2%	-19.5%	-19.0%	-19.1%	-19.1%	0.0%
95th percentile	-21.5%	-21.8%	-22.0%	-22.0%	-21.9%	-21.9%	8.6%

Panel 5:	**30 years of contributions, 8.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-26.6%	-26.9%	-27.2%	-26.9%	-27.0%	-27.0%	3.8%
Median	-26.8%	-27.1%	-27.5%	-27.0%	-27.1%	-27.3%	3.9%
5th percentile	-24.5%	-24.6%	-25.3%	-24.5%	-24.6%	-24.7%	-0.4%
95th percentile	-28.2%	-28.4%	-28.5%	-28.3%	-28.3%	-28.5%	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 7. Account Balances Based on 10% Annual Contribution

Panel 1:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$1,041,520	$691,812	$427,075	$584,752	$364,291	$213,154	5.6%
Median	$901,358	$597,677	$367,689	$504,880	$314,447	$184,000	5.6%
5th percentile	$397,243	$260,362	$158,505	$220,813	$136,909	$79,971	1.3%
95th percentile	$2,165,566	$1,444,425	$898,656	$1,218,359	$761,117	$445,130	9.8%

Panel 2:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$965,993	$641,073	$395,293	$541,842	$337,459	$197,432	5.1%
Median	$836,253	$553,585	$340,871	$468,574	$291,540	$170,488	5.1%
5th percentile	$377,237	$246,960	$149,893	$209,746	$130,036	$75,891	0.9%
95th percentile	$1,974,958	$1,318,392	$818,606	$1,113,957	$695,362	$406,531	9.4%

Panel 3:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$891,062	$590,711	$363,773	$499,315	$310,853	$181,860	4.7%
Median	$776,797	$514,172	$315,608	$434,649	$270,209	$157,935	4.7%
5th percentile	$353,406	$230,942	$139,843	$196,338	$121,511	$70,892	0.5%
95th percentile	$1,797,457	$1,199,326	$743,969	$1,012,035	$631,685	$369,375	8.9%

Panel 4:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$831,254	$550,537	$338,602	$465,334	$289,614	$169,412	4.3%
Median	$726,627	$480,203	$294,218	$406,235	$252,596	$147,780	4.3%
5th percentile	$326,297	$213,105	$128,836	$181,246	$112,242	$65,289	0.0%
95th percentile	$1,674,531	$1,115,892	$692,072	$942,311	$587,967	$344,172	8.6%

Panel 5:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$758,837	$502,024	$308,403	$424,385	$264,042	$154,429	3.8%
Median	$670,703	$442,917	$270,433	$374,046	$232,459	$135,959	3.9%
5th percentile	$306,606	$199,784	$120,866	$170,034	$105,136	$61,289	-0.4%
95th percentile	$1,523,980	$1,014,814	$629,189	$857,667	$534,950	$312,962	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 8. Effect of Expenses on Account Balance in Constant Dollars

Panel 1:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$1,041,520	$691,812	$427,075	$584,752	$364,291	$213,154	5.6%
Median	$901,358	$597,677	$367,689	$504,880	$314,447	$184,000	5.6%
5th percentile	$397,243	$260,362	$158,505	$220,813	$136,909	$79,971	1.3%
95th percentile	$2,165,566	$1,444,425	$898,656	$1,218,359	$761,117	$445,130	9.8%

Panel 2:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$75,527	-$50,739	-$31,782	-$42,911	-$26,832	-$15,722	5.1%
Median	-$65,105	-$44,091	-$26,818	-$36,306	-$22,907	-$13,512	5.1%
5th percentile	-$20,007	-$13,402	-$8,611	-$11,068	-$6,873	-$4,081	0.9%
95th percentile	-$190,609	-$126,033	-$80,050	-$104,402	-$65,755	-$38,599	9.4%

Panel 3:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$150,458	-$101,101	-$63,303	-$85,437	-$53,438	-$31,294	4.7%
Median	-$124,562	-$83,505	-$52,081	-$70,232	-$44,237	-$26,065	4.7%
5th percentile	-$43,837	-$29,420	-$18,662	-$24,475	-$15,399	-$9,079	0.5%
95th percentile	-$368,110	-$245,099	-$154,687	-$206,323	-$129,432	-$75,755	8.9%

Panel 4:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$210,265	-$141,275	-$88,473	-$119,419	-$74,677	-$43,743	4.3%
Median	-$174,732	-$117,474	-$73,471	-$98,646	-$61,851	-$36,219	4.3%
5th percentile	-$70,946	-$47,258	-$29,669	-$39,568	-$24,668	-$14,682	0.0%
95th percentile	-$491,036	-$328,533	-$206,584	-$276,047	-$173,150	-$100,957	8.6%

Panel 5:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
Dollar difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-$282,683	-$189,787	-$118,673	-$160,367	-$100,249	-$58,725	3.8%
Median	-$230,655	-$154,760	-$97,256	-$130,834	-$81,987	-$48,041	3.9%
5th percentile	-$90,638	-$60,578	-$37,639	-$50,780	-$31,773	-$18,682	-0.4%
95th percentile	-$641,587	-$429,611	-$269,466	-$360,692	-$226,166	-$132,167	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.

Table 9. Effect of Expenses on Account Balance as a Percentage of Base Case

Panel 1:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.4% (Base case)**						
	Married couples			**Single persons**			
Account Balance	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	$1,041,520	$691,812	$427,075	$584,752	$364,291	$213,154	5.6%
Median	$901,358	$597,677	$367,689	$504,880	$314,447	$184,000	5.6%
5th percentile	$397,243	$260,362	$158,505	$220,813	$136,909	$79,971	1.3%
95th percentile	$2,165,566	$1,444,425	$898,656	$1,218,359	$761,117	$445,130	9.8%

Panel 2:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 0.8%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-7.3%	-7.3%	-7.4%	-7.3%	-7.4%	-7.4%	5.1%
Median	-7.2%	-7.4%	-7.3%	-7.2%	-7.3%	-7.3%	5.1%
5th percentile	-5.0%	-5.1%	-5.4%	-5.0%	-5.0%	-5.1%	0.9%
95th percentile	-8.8%	-8.7%	-8.9%	-8.6%	-8.6%	-8.7%	9.4%

Panel 3:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.2%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-14.4%	-14.6%	-14.8%	-14.6%	-14.7%	-14.7%	4.7%
Median	-13.8%	-14.0%	-14.2%	-13.9%	-14.1%	-14.2%	4.7%
5th percentile	-11.0%	-11.3%	-11.8%	-11.1%	-11.2%	-11.4%	0.5%
95th percentile	-17.0%	-17.0%	-17.2%	-16.9%	-17.0%	-17.0%	8.9%

Panel 4:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 1.6%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-20.2%	-20.4%	-20.7%	-20.4%	-20.5%	-20.5%	4.3%
Median	-19.4%	-19.7%	-20.0%	-19.5%	-19.7%	-19.7%	4.3%
5th percentile	-17.9%	-18.2%	-18.7%	-17.9%	-18.0%	-18.4%	0.0%
95th percentile	-22.7%	-22.7%	-23.0%	-22.7%	-22.7%	-22.7%	8.6%

Panel 5:	**30 years of contributions, 10.0% annual contribution rate, Expenses = 2.0%**						
	Married couples			**Single persons**			
% difference	High earner	Med. earner	Low earner	High earner	Med. earner	Low earner	Avg. ann. return
Mean	-27.1%	-27.4%	-27.8%	-27.4%	-27.5%	-27.6%	3.8%
Median	-25.6%	-25.9%	-26.5%	-25.9%	-26.1%	-26.1%	3.9%
5th percentile	-22.8%	-23.3%	-23.7%	-23.0%	-23.2%	-23.4%	-0.4%
95th percentile	-29.6%	-29.7%	-30.0%	-29.6%	-29.7%	-29.7%	8.1%

Note: Amounts are in 2004 dollars. The average annual real rate of return is net of account expenses.
Source: Congressional Research Service.