



# Retirement Planning—Estimating the Amount To Save

Fact Sheet 594

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“How much should I save for retirement?” This is a question consumers ask as they begin to think about retiring. There is no definite answer to this question; you can only project a “best guess.” The more years you have before retirement, the less exact your estimate will be. Every few years, you will need to reestimate the amount to save. Fluctuations in inflation, interest rates and taxes, and the amount of time you will be able to work, particularly if health becomes a problem, cannot be accurately determined beforehand. Additionally, you will need to determine your desired lifestyle in retirement.

## What Are My Major Sources of Retirement Income?

The amount you need to save also is dependent upon your potential retirement income which may come from three major sources—Social Security, employee pensions and personal savings.

### Social Security

While Social Security provides a portion of your retirement income, it was never meant to be your only source of retirement income. Additionally, because of Social Security modifications to keep the system financially sound, those who retire after the turn of the century are likely to replace a smaller proportion of their preretirement earnings compared with those who are currently retired or retiring within the next few years.

### Pensions and Tax-Deferred Plans

The retirement benefits you are building through your employer from pensions and other tax-deferred plans are another source. Depending

upon the benefits offered and your participation in employer-sponsored plans, you will be able to accumulate a minimal or substantial retirement income from this source. Check with your employer's personnel office to discover the benefits that are available to you from pension and tax-deferred plans. (For a detailed description of what to look for when evaluating your pension, request Fact Sheet 532 “Retirement Planning—Understanding Pensions” from your county Extension office.) Many employees, especially those who work for small companies, discover they must contribute to their employer's plans or save on their own in order to have an adequate retirement income.

### Other Accumulations

Your past and future accumulations in personal savings and employer plans are a third source of retirement income. The minimal amount that you should set aside (in today's dollars) to accumulate the financial resources you need to maintain your desired lifestyle in retirement is explained in this publication. By planning and saving now, you will be “on the road” to achieving a financially secure retirement.

## How Should I Estimate the Amount To Save?

To help you estimate the amount you should save, study the estimates made by a fictional couple who are in their midforties, John and Joan Jones. Their situation is discussed along with each step of the process, and their needed calculations are entered in the first column of the worksheet that can be found on pages 4 and 5. You will be able to use the second column, Plan A, for your cal-

culations and the third column, Plan B, to try other alternatives, such as delaying retirement or increasing income.

To estimate your needed retirement savings to finance your retirement, you will need to make some assumptions.

**Estimate your life expectancy.** Currently, women who reach age 65 can expect to live about 20 additional years; men of the same age can expect to live about 15 additional years. Married couples have a joint life expectancy (the total time one or the other can be expected to live) of 25 years. If you have a family history that indicates these predictions may be wrong, you may want to plan for a longer period of time. Planning for too short a period of time may cause you to run short of funds.

The Joneses expect to retire at age 65 and to be retired for 25 years and have entered 25 on the first line of the worksheet.

**Determine the number of years you will work before you retire.** The Joneses intend to work for 20 more years and have entered 20 on the next line.

**Make calculations in today's dollars.** This assumption eliminates the need to account for taxes or inflation for living expenses and asset accumulations. However, you will need to reduce the amount of your pension benefit to account for taxes as discussed in the following section.

**Assume that the net rate of return on savings and investments is 2 percent.** This method assumes that you will keep your savings and investments at least 2 percent ahead of taxes and inflation. For investments that are tax-sheltered, such as IRA's and 401(k) plans, deduct only the inflation rate from the rate of return when calculating this 2 percent lead. Be sure to analyze your rate of return each year to make sure you actually achieve this goal.

**Assume that the expected value of your assets is zero upon your death and your spouse's.** If you desire to leave an inheritance for the next generation, do not include these funds in your retirement assets.

The Joneses plan to use most of their assets in retirement.

## What Financial Data Do I Need?

The next step is to gather together the data you need to make some calculations.

**Current living expenses.** Total your current living expenses, taking into consideration the reduction in food and household operating costs when your

children leave home (or when you cease contributing to their support). Transportation costs are likely to remain the same percentage of your spending just after retirement. However, you may want to include an amount for supplemental medical insurance and out-of-pocket medical expenses if your employer currently covers this expense. You may decide not to include an amount for savings because retirement is the time to spend your savings. Your resulting calculation will be a rough approximation of what your yearly retirement living costs will be in current dollars and the amount you will need to spend to maintain your current lifestyle in retirement. Alternately, you also may use 50 to 80 percent of your current salary as the amount you will require for retirement living expenses. If your income is at the minimum wage or slightly above it, you will want to use a 75 or 80 percent estimation level.

The Joneses earn a total of \$40,000 per year. John earns \$25,000 and Joan earns \$15,000. They plan to replace 75 percent of their current income and have entered \$30,000 on the worksheet (line 1) ( $\$40,000 \times 0.75 = \$30,000$ ).

**Income expected from Social Security and other pensions.** Social Security and pension income from Federal, state, and company plans are estimated in gross amounts before taxes. Pensions and up to one-half of Social Security benefits may be taxable depending on the amount of your total income. To compensate for the effect of taxes, record these estimated amounts in after-tax dollars. One way to keep your calculations simple is to reduce the amounts of taxable pension income by at least the lowest tax-bracket amount of 15 percent plus at least 7.5 percent for state and local taxes [multiply by 0.78 ( $1.00 - 0.22$ )]. If you do not reduce the amount of your pension income, the final amount you need to save will be underestimated. Next, estimate after-tax benefits from Social Security and Federal, state or company employment pensions.

- **Social Security.** Benefit levels 20 or more years in the future are almost impossible to predict. A rough estimate can be made using today's benefit levels, assuming that you will work until you are 65, you have worked continuously, and you have received average pay raises. You also assume your income will remain the same until you retire and there will be no additional inflation. In other words, the estimates in Table 1 (page 7) for yourself and your dependent spouse are in today's dollars and are estimates only. The Social Security Administration can provide a

more accurate estimate if you complete and mail a "Request for Earnings and Benefits Statement" form. To obtain this form by mail, call this toll-free number: 1-800-772-1213. Do not reduce the amount of your Social Security benefits if your retirement income will be \$25,000 or less if single, or \$32,000 or less if married.

John expects to receive \$10,930 in Social Security benefits based on working at least 35 years under Social Security at a current salary of \$25,000. Joan expects to receive \$7,765 based on working 35 years at a current salary of \$15,000. Their total is \$18,695 which they wrote on line 21 ( $\$10,930 + \$7,765 = \$18,695$ ). The Joneses' targeted retirement income is below the base (\$32,000) that will cause partial taxation of Social Security benefits, so they made no adjustment for taxes.

- **Federal Retirement Programs.** Federal employees employed before 1984 who belong to the Civil Service Retirement System (CSRS) can estimate their benefits from Table 2 (page 7), or calculate the exact benefit from the formula in the footnote for Table 2. Federal employees hired after 1983 in the Federal Employees Retirement System (FERS) will find similar data in Table 3 (page 7). Tables 2 and 3 do not include reductions for joint and survivor annuities. Do not forget to reduce this amount to account for Federal and state taxes as discussed at the beginning of Section 2. For example, if your CSRS pension will be \$20,000, estimate 15 percent Federal taxes and 7 percent state taxes yields the following calculation ( $1.00 - 0.15 - 0.07 = 0.78$  and  $\$20,000 \times 0.78 = \$15,600$ ). If you want to be more accurate, only about 90 percent of your Federal pension is subject to Federal taxes, and unless you receive Social Security benefits, \$12,300 (1992) of your pension is not subject to Maryland taxes.

The Joneses have never worked for the Federal government.

- **State of Maryland Retirement Systems.** Maryland State employees participating in the old Maryland State Retirement System may estimate benefits in Table 4 (page 8), or calculate the exact benefit from the formula in the footnote. Employees in the new Maryland State Pension System will find benefit estimates and formulas in Table 5 (page 8). Tables 4 and 5 do not include reductions for joint and survivor annuities. Remember to reduce the amount of your pension to account for Federal and state income taxes. Since state employees also receive Social Security income, the State income tax \$12,300 reduction for pensions will be eliminat-

ed if your Social Security benefits exceed the reduction limit.

The Joneses have never worked for the State of Maryland.

- **Other Defined-Benefit Pensions.** In a defined-benefit plan, the benefit is established by a formula, and the employer contributes whatever is necessary to fund the benefit. Corporate pensions can be estimated roughly using Table 6 (page 8); they are based on the average annual amount received by workers in medium and large firms in 1989. These figures assume retirement at age 65 and no reduction for a joint and survivor annuity. For a more exact calculation, and to find your employer's reduction for a joint and survivor annuity, consult your employer's Summary Plan Description booklet which you should have in your possession. Do not forget to reduce these amounts to account for Federal and state taxes as discussed previously.

John expects to receive a pension of \$7,350 based on his current salary of \$25,000. He has multiplied his pension by 0.78 ( $1.00 - 0.15 - 0.07 = 0.78$ ) and entered \$5,773 on the worksheet ( $\$7,350 \times 0.78 = \$5,773$ ). Joan does not have a defined-benefit pension and makes no estimate here.

**Additional amount needed for retirement income.** In this step, you will subtract your Social Security and pension income (line 2) from your projected retirement living expenses.

The Joneses subtracted the estimated Social Security and pension income of \$24,468 from the \$30,000 they hope to have as retirement income and entered the result of \$5,532 on line 3 of the worksheet ( $\$30,000 - \$24,468 = \$5,532$ ).

**Additional savings in current dollars.** The amount you need to save depends on the number of years you plan to live in retirement and the rate of return you will earn on your savings. The worksheet (line 4) contains a table that will allow you to determine the lump sum you will need to fund your future retirement benefits. The multiplication numbers in the table (line 4) assume that, after taxes and inflation, your savings will grow at least 2 percent over what was invested the previous year. To use the table, multiply the appropriate number for the number of years you plan to be retired by the amount of additional retirement income needed (line 3). You will notice that each factor is slightly smaller than the number of years in retirement. This is the result of your assets earning interest. If you were not earning interest, you would simply multiply the number of dollars needed by the number of years the resulting income would be paid. The resulting additional

**Worksheet**

## Estimating the Amount To Save

	Joneses	Plan A	Plan B
<b>Assumptions</b>			
The number of years you expect to be retired	<u>25</u>	_____	_____
The number of years until you plan to retire	<u>20</u>	_____	_____
Expected value of your assets at your death and your spouse's	<u>0</u>	_____	_____
<b>Calculations</b>			
1. Projected annual retirement living expenses in current dollars	(1) <u>\$ 30,000</u>	_____	_____
2. Estimated Social Security and pension income			
2a. Social Security	<u>\$ 18,695</u>	_____	_____
2b. Federal Pension (CSRS or FERS)	_____	_____	_____
2c. State Pension	_____	_____	_____
2d. Defined Benefit Pension	<u>\$ 5,773</u>	_____	_____
Total (2a, 2b, 2c and 2d)	(2) <u>\$ 24,468</u>	_____	_____
3. Additional amount needed for retirement income			
Subtract (2) from (1)	<u>\$ 5,532</u>	_____	_____
4. Additional savings needed in current dollars			
Number of years in retirement	Multiplication number <sup>a</sup>		
10	8.9		
15	12.8		
20	16.4		
25	19.5		
30	22.4		
35	25.0		
40	27.4		
	Multiply line 3 by the multiplication number that matches your planned number of years in retirement.	× <u>19.5</u>	_____
Additional savings needed	(4) <u>\$107,874</u>	_____	_____
5. Value of assets currently owned	<u>\$ 30,000</u>	_____	_____

<sup>a</sup> These factors are equal to the present value of an annuity. The formula is  $F = \frac{1 - (1 + r)^{-n}}{r}$  where r = the rate of return and n = the number of years in retirement.

6. Value of assets at retirement

Number of years until retirement	Multiplication number <sup>a</sup>		Joneses	Plan A	Plan B
5	1.10	Multiply line 5 by the multiplication number that matches your planned number of years until retirement.			
10	1.22				
15	1.35				
20	1.49				
25	1.64				
30	1.81				
35	2.00				
40	2.21				
			× 1.49		

<sup>a</sup> These factors are equal to the future value of \$1 compounded annually. The formula is  $F = (1 + r)^n$  where  $r$  = the rate of return and  $n$  = the number of years until you retire.

Value of assets at retirement (6) \$ 44,700

7. Revised annual savings still needed

7a. Additional savings needed	(4)	\$107,874		
7b. Subtract value of assets at retirement.	(6) -	\$ 44,700		
Annual savings still needed	(4)	\$ 63,174		

8. Amount to be saved each year

Number of years until retirement	Multiplication number <sup>a</sup>				
5	.192	Multiply line 7 by the multiplication number that matches your planned number of years until retirement.			
10	.091				
15	.057				
20	.041				
25	.031				
30	.025				
35	.020				
40	.017				
			× .041		

<sup>a</sup> These factors represent the reciprocal of the future value of an annuity. The formula is

$$F = \frac{r}{(1 + r)^n - 1}$$

where  $r$  = the rate of return and  $n$  = the number of years until you retire.

Amount to save each year (8) \$ 2,590

9. Amount to save this year after deducting employer's contributions money-purchase, thrift, and/or profit-sharing plans

Subtract employer's contributions from (8).	(9) -	\$ 750		
Final yearly savings amount		\$ 1,840		
Monthly amount (divide by 12)		\$ 153		

savings needed represents the single lump sum you need at retirement to fill the gap between expected income and expenses.

The Joneses think they will need retirement income for 25 years. They used the appropriate number, 19.5, and multiplied it by \$5,532 (line 3), the additional income they need to fund their retirement, and discovered they need to save \$107,874 by the time they retire ( $\$5,532 \times 19.5 = \$107,874$ ). While this looks like a huge sum to them, they have forgotten that this is the total sum and does not include any of their current retirement savings.

**Total value of assets owned.** Include in this category the savings and investments that you do not plan to spend before retirement and the cash value of your vested benefits in your money-purchase pension, profit-sharing or thrift plan at work. If you intend to sell your home and use the proceeds for retirement income, include the current value of the house.

Joan and John Jones have joint retirement savings of \$30,000, including \$10,000 in Joan's tax-sheltered annuity which she and her employer, the local hospital, fund jointly. They also maintain and will continue to maintain in retirement an emergency fund of \$5,000 which is not included here because they do not intend to use this money for regular retirement expenses.

**Value of assets at retirement.** The value of your assets at retirement can be determined by multiplying the factor that allows the assets you have currently saved to be compounded at the rate of 2 percent per year by the lump sum you identified in the previous step (line 5).

Since the Joneses plan to work 20 years more, they multiplied the number 1.49 from the table by \$30,000. Their assets will be worth \$44,700 (line 6) by the time they retire ( $\$30,000 \times 1.49 = \$44,700$ ).

**Revised annual savings still needed.** To establish the amount you still need to save, subtract the value of your assets in retirement (line 6) from the additional amount you need to save (line 4).

The Joneses estimated they need \$107,874 by the time they retire and have subtracted \$44,700, the value of their current retirement savings at the time they retire. They discovered they still need to save \$63,174 ( $\$107,874 - \$44,700 = \$63,174$ ).

**Amount to save each year.** If you can make your savings earn at least 2 percent after taxes and inflation, the amount you need to save each year is reduced by the amount of the earnings. To determine the annual contribution to your retirement fund, multiply one of the factors from the table in line 8 on the worksheet by your annual savings still needed (line 7).

The Joneses will retire in 20 years so the appropriate factor to use to determine yearly savings is 0.041. When they multiplied 0.041 by \$63,174, the additional amount they need to save before they retire, they discovered they need yearly savings of \$2,590 ( $\$63,174 \times 0.041 = \$2,590$ ).

**Amount to save this year.** The amount your employer contributes to money-purchase, thrift, and profit-sharing plans reduces the amount you need to save. Subtract your employer's contribution this year (line 9) from the amount you need to save (line 8).

When the Joneses subtracted the \$750 that Joan's employer contributes each year to her tax-sheltered annuity (which is a money-purchase plan) from \$2,590, the gross amount they need to save, they discovered they still need to save \$1,840 or \$153 per month ( $\$2,590 - \$750 = \$1,840$ ). They were pleased with the result because Joan also contributes \$750 per year to the tax-sheltered annuity, reducing the amount they need to save to \$1,310 or \$126 per month. Since they already save \$200 per month for retirement, they have arrived at their goal with no additional savings needed. Therefore, they will not have to reduce their current lifestyle to fund their retirement.

Once you have determined the amount you should save each year, remember that this amount is only an estimate based on the preceding assumptions. Be sure to recalculate these amounts whenever the assumptions change and at least every 3 years until you are 10 years from retirement. After that time, new calculations should be made each year. Do not forget to include amounts you contribute to IRA's, tax-sheltered annuities and tax-deferred plans as a part of the amount you save each year. If you cannot currently save this amount, save as much as possible and look for ways you can reduce your spending so you will have the needed amount available as you recalculate next year.

## References

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**Table 1. Social Security benefit amounts for 1995**

Average indexed yearly earnings	Worker, age 65 (annual benefit)	Spouse, age 65 (annual benefit)	Total (annual benefit)
\$15,000	\$7,765*	\$3,875	\$11,640
20,000	9,300	4,665	13,945
25,000	10,930	5,460	16,390
30,000	12,565	6,275	18,840
35,000	13,415	6,710	20,125
40,000	14,185	7,090	21,275
45,000	14,940	7,965	22,405

\* Benefits have been rounded to the nearest \$5.

**Table 2. Annual Civil Service Retirement System benefits for employees hired before 1984\***

Average salary of consecutive 3 highest years	Years of service						
	10	15	20	25	30	35	40
\$15,000	\$2,435**	\$3,935	\$5,435	\$6,935	\$8,435	\$9,935	\$11,435
20,000	3,250	5,255	7,250	9,250	11,255	13,250	15,250
25,000	4,045	6,560	9,060	11,570	14,065	16,560	19,070
30,000	4,870	7,870	10,870	13,870	16,870	19,870	22,870
35,000	5,690	9,190	12,685	16,190	19,690	23,185	26,690
40,000	6,505	10,500	14,495	18,505	22,500	26,495	30,505
45,000	7,310	11,810	16,310	20,810	25,310	29,810	34,310

\* To estimate Federal Civil Service benefits for other income levels, use the following formula.

1. Average your highest 3 years of pay.
2. Multiply the resulting average by 0.015, times 5 for the first 5 years of service.
3. Multiply the average by 0.0175, times 5 for the next 5 years.
4. Multiply the average by 0.02, times the remaining years until you plan to retire.
5. Total 2, 3, and 4 to establish the annual amount of your annuity.
6. If a joint survivor annuity is chosen, reduce the first \$3,600 of these amounts or a lesser base amount by 2.5 percent and the remainder by 10 percent. The survivor receives 55 percent of the base amount selected.

\*\* Benefits have been rounded to the nearest \$5.

**Table 3. Annual Federal Employees Retirement System benefits for employees hired after 1983\***

Average salary of any 3 highest years	Years of service						
	10	15	20	25	30	35	40
\$15,000	\$1,500	\$2,250	\$3,000	\$3,750	\$4,500	\$5,250	\$6,000
20,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
25,000	2,500	3,750	5,000	6,250	7,500	8,750	10,000
30,000	3,000	4,500	6,000	7,500	9,000	10,500	12,000
35,000	3,500	5,250	7,000	8,750	10,500	12,250	14,000
40,000	4,000	6,000	8,000	10,000	12,000	14,000	16,000
45,000	4,500	6,750	9,000	11,250	13,500	15,750	18,000

\* To estimate benefit levels for other income levels:

1. Average your highest 3-year earnings.
2. Multiply the resulting average by 1 percent for each year of service. If you have reached age 62 and 20 years of service, your average can be multiplied by 1.1 percent instead of the 1 percent reflected in Table 3.

**Table 4. Maryland State Retirement System benefits (old system)\***

Average salary of any 3 highest years	Years of service						
	10	15	20	25	30	35	40
\$15,000	\$2,700**	\$4,050	\$5,400	\$6,750	\$8,100	\$9,450	\$10,800
20,000	3,600	5,400	7,200	9,000	10,800	12,600	14,400
25,000	4,500	6,750	9,000	11,250	13,500	15,750	18,000
30,000	5,400	8,100	10,800	13,500	16,200	18,900	21,600
35,000	6,300	9,450	12,600	15,750	18,900	22,050	25,200
40,000	7,200	10,800	14,400	18,000	21,600	25,200	28,000
45,000	8,100	12,200	16,200	20,250	24,300	28,350	32,400

\* Other estimates can be made with the following formula.

1. Average your 3 highest consecutive years of income.
2. Multiply this average by 0.018, times the number of years of service.

\*\* Benefits have been rounded to the nearest \$5.

**Table 5. Maryland State Pension System benefits (new system)\***

Average salary of consecutive 3 highest years	Years of service						
	10	15	20	25	30	35	40
\$15,000	\$1,200**	\$1,800	\$2,400	\$3,000	\$3,600	\$4,200	\$4,800
20,000	1,600	2,400	3,200	4,000	4,800	5,600	6,400
25,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
30,000	2,685	4,030	5,375	6,715	8,060	9,405	10,750
35,000	3,435	5,155	6,875	8,590	10,310	12,030	13,750
40,000	4,185	6,280	8,375	10,465	12,560	14,655	16,750
45,000	4,935	7,405	9,875	12,340	14,810	17,280	19,750

\* To determine other amounts, use the following formula.

1. Determine the current Social Security Integration Level (SSIL), which is the average of the yearly maximum Social Security contribution levels for the 35 years before the year of retirement rounded down to the nearest hundred. For 1996 the 1995 SSIL is \$25,900 (total wage bases 1961–1995 \$907,400 divided by 35 years). Be sure to recalculate the SSIL yearly as the pension amounts change each year.
2. Multiply 0.008 by \$25,900 times years of service.
3. Multiply 0.015 by average consecutive highest 3 years of salary minus the SSIL, times years of service.
4. Add results of steps 2 and 3.

\*\*Benefits have been rounded to the nearest \$5.

**Table 6. Average corporate pension benefits at age 65, 1989**

Average years earnings	Years of service						
	10	15	20	25	30	35	40
\$15,000	\$1,905*	\$2,790	\$3,615	\$4,380	\$5,160	\$5,880	\$6,555
20,000	2,320	3,380	4,380	5,280	6,180	7,040	7,840
25,000	2,800	4,000	5,150	6,275	7,350	8,350	9,225
30,000	3,270	4,710	6,120	7,620	8,780	9,900	10,950
35,000	3,710	5,390	7,035	8,610	10,115	11,410	12,565
40,000	4,240	6,160	8,040	9,840	11,400	13,040	14,320
45,000	4,725	6,930	9,000	11,115	13,050	14,670	16,065

\* Benefits have been rounded to the nearest \$5.

1. When retiree and spouse are same age, deduct 10 percent from these amounts to provide for a joint and survivor annuity.