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Estimating the Amount to Save for Retirement

by Marsha A. Goetting, Ph.D., CFP®, CFCS, Professor and Family Economics Specialist; Joseph A. Atwood, Ph.D., Associate Professor, Montana State University Dept. of Agricultural Economics and Economics

This MontGuide shows a process for estimating the minimum annual and monthly savings (in today's dollars) to set aside to achieve the level of living you desire during retirement.

"How much should I save for retirement?" is a question asked by Montanans who are concerned about having an adequate income during their "golden" years.

This MontGuide shows a process for estimating the minimum annual and monthly savings (*in today's dollars*) to set aside to achieve the level of living you desire during retirement. Planning ahead should contribute to a feeling of financial security in later life.

The amount to save depends on the benefits you are building through employment, the assets you have already accumulated, and the level of living you desire during retirement. The amount also will be affected by inflation and interest rates, neither of which can be predicted with perfect accuracy over periods of many years.

Therefore, any financial plan (*this MontGuide included*) that makes an estimate of the amount to save for retirement is a "best guess" rather than a guarantee. But an estimate should help you decide whether your current savings are high, low or just about right. And, if you haven't yet started saving for retirement, this process will reveal the advantage of putting aside money now—rather than waiting until later.

Calculation Assumptions

Any financial plan that estimates the amount to save for retirement makes assumptions about income desired, interest rates, inflation rates, life expectancy and plans for

leaving assets to heirs. To better understand the estimates, you need to carefully examine the assumptions behind them.

The process outlined in this MontGuide makes these assumptions:

1. Your designated retirement assets will earn a 2 percent rate of return after allowances have been made for taxes and inflation. If your assets earn a higher rate of return, you can meet your retirement goals while saving less. If your assets earn a lower rate of return, you will need to save more.
2. You expect to use all of your assets before you die. If you want to leave assets for heirs, you will need to save more.
3. You will continue to work for a specific number of years before you retire.
4. Your length of time during retirement can be estimated using life expectancy tables from the Internal Revenue Service (Publication 590). You can increase the number of years of life expectancy if your family members tend to live longer than average.
5. Your income while employed will keep pace with inflation. Growth that matches inflation is a fairly conservative assumption.
6. Your estimated retirement benefits will be adjusted upward as your salary increases. If this is not true in your situation, you will need to save more than estimated through the process outlined in this MontGuide.
7. Your yearly savings toward retirement are placed in taxable savings and investments. If your savings are placed in tax-free or tax-deferred investments, you may be able to achieve your financial goals for retirement while saving a smaller amount.

Process

Review the calculation that follows for Nancy and Fred (page 7 and back page), a married couple from Montana who are age 45. Explanations for the information needed are provided for each step. Use Plan A for your own figures. Use Plan B to explore alternatives, such as delaying retirement or increasing the yearly income you would like to have during your retirement years.

Step 1. Write the number of years until you plan to retire on line 1.

If you and your spouse anticipate retiring at different times use an average. For example, if you plan to retire in 20 years and your spouse plans to retire in 26 years use 23 ($20 + 26 = 46 \div 2 = 23$).

Nancy and Fred, age 45, both plan to work until age 65 so they wrote 20 on line 1 ($65 - 45 = 20$ years).

Step 2. Write the number of years that you expect to be retired on line 2.

No one can accurately predict how long he or she is going to live after retirement, but actuary tables and the health history of family members can be used as a guide. Review the IRS Life Expectancy

Table 1: Life Expectancy

Age	Life Expectancy	Age	Life Expectancy
45	38.8	61	24.4
46	37.9	62	23.5
47	37.0	63	22.7
48	36.0	64	21.8
49	35.1	65	21.0
50	34.2	66	20.2
51	33.3	67	19.4
52	32.3	68	18.6
53	31.4	69	17.8
54	30.5	70	17.0
55	29.6	71	16.3
56	28.7	72	15.5
57	27.9	73	14.8
58	27.0	74	14.1
59	26.1	75	13.4
60	25.2		

Source: Single Life Table, IRS, Publication 590

Table to determine the number of years you are expected to live after your retirement age (Table 1). If your family members tend to live longer, add extra years to the numbers from Table 1.

Using Table 1, Nancy and Fred found that the life expectancy for a person age 65 is 21 years. However, many of their relatives have lived beyond age 65 so they added 4 years to their life expectancy of 21 years. They wrote 25 on line 2.

Step 3. Estimate total yearly income during retirement that you expect from Social Security, Federal Civil Service and any other pension plans.

Step 3a. On line 3a write your estimated yearly Social Security benefits. The Social Security Benefit Estimates Table can be used as a guide (Table 2).

Using Table 2, Fred discovered that his estimated Social Security benefit is \$11,472, which is based on his current income of \$25,000. Nancy's estimated Social Security benefit is \$9,996 which is based on her current income of \$20,000. Their combined Social Security benefit is \$21,468 (\$11,472 + \$9,996 = \$21,468). This is the amount they wrote on line 3a.

For a more accurate figure, use the one provided on your Personal Earnings and Benefit Estimate Statement (PEBES). This statement shows your Social Security earnings history, tells how much you have paid in Social Security taxes and estimates your future Social Security benefits. PEBES is sent annually to all workers.

If you have not received a PEBES, an application form is available from your local Social Security office by calling (1-800-772-1213) or by writing Social Security Administration, Albuquerque Data

Operations Center, P.O. Box 4429, Albuquerque, NM 87196. You may also complete a form on the web at <http://www.ssa.gov>. Your PEBES will be mailed to you in two to three weeks.

Step 3b. On line 3b write your estimated Federal Civil Service retirement benefits (if eligible). The Federal Civil Service Estimates Table can be used to make these estimates (Table 3).

Because Nancy and Fred have never worked under the Federal Civil Service system, they entered a zero on line 3b.

Step 3c. On line 3c write the amount of your yearly expected company pension. The Average Corporate Pension Benefits Table can be used to make these estimates (Table 4).

Fred's salary is \$25,000 with 20 years of service. Table 4 reveals that his pension benefit is \$5,350. Nancy's salary is \$20,000 with 20 years of service. Nancy estimates her pension benefit is \$4,510. Their combined benefits total \$9,860 (\$5,350 + \$4,510 = \$9,860).

For a more accurate figure, ask your employer what annual payment you will receive at today's salary assuming you will be employed by the company until you retire. If you have not worked for a company long enough to be eligible for a pension, enter a zero. If you have held several jobs with different employers but withdrew your retirement funds each time you left, enter a zero.

Step 3d. On line 3d write the sum of your estimated Social Security income (line 3a), Federal Civil Service income (line 3b), and pension income (line 3c). This is your total yearly gross retirement income "expected."

The sum Fred and Nancy expect to receive from Social Security (\$21,468, line 3a) and their pensions (\$9,860, line 3c) is \$31,328, which is the amount they wrote on line 3d (\$21,468 + \$9,860 = \$31,328).

Step 4. Estimate the reduction in your retirement income from state and federal income taxes.

Step 4a. On line 4a write the sum of your pension ben-

Table 2: Social Security Benefit Estimates

Current Income	Worker Age 65	Spouse Age 65	Total
\$15,000	\$8,352	\$4,266	\$12,798
\$20,000	\$9,996	\$4,998	\$14,994
\$25,000	\$11,472	\$5,736	\$17,208
\$30,000	\$12,948	\$6,474	\$19,422
\$35,000	\$14,412	\$7,206	\$21,618
\$40,000	\$15,888	\$7,944	\$25,632
\$45,000	\$17,352	\$8,676	\$26,028
\$50,000	\$18,288	\$9,144	\$27,432
\$55,000	\$18,948	\$9,474	\$28,422
\$60,000	\$19,668	\$9,834	\$29,522
\$65,000	\$20,352	\$10,176	\$30,528

Source: Social Security Benefit Calculator
<http://www.ssa.gov/retirez/calculator.htm>

Table 3: Federal Civil Service Benefits Estimates

High 3 Average Salary	Years of Service						
	10	15	20	25	30	35	40
\$15,000	\$2,400	\$3,900	\$5,400	\$6,900	\$8,400	\$9,900	\$11,400
\$20,000	\$3,250	\$5,250	\$7,600	\$9,250	\$11,250	\$13,250	\$15,250
\$25,000	\$4,050	\$6,550	\$9,050	\$11,550	\$14,050	\$16,550	\$19,050
\$30,000	\$4,900	\$7,900	\$10,900	\$13,900	\$16,900	\$19,900	\$22,900
\$35,000	\$5,700	\$9,200	\$12,700	\$16,200	\$19,700	\$23,200	\$26,700
\$40,000	\$6,500	\$10,500	\$14,500	\$18,500	\$22,500	\$26,500	\$30,500
above \$40,000*							
*Basic Annuity Formula: a) take: 1.5% of the "high-3" average pay and multiply the result by years of service up to 5; b) add: 1.75% of the "high-3" average pay multiplied by years of service between 5 and 10; c) add: 2% of the "high-3" average pay multiplied by years of service over 10 years.							
Source: United State Office of Personnel Management Retirement and Insurance Service RI 83-7, March 1995.							

by the amount of the federal standard deduction or exemptions. From Table 6 they find that their income is in the 15% tax bracket because they plan to file separately. Their estimated federal income tax is \$1,479 ($\$9,860 \times 0.15 = \$1,479$).

Step 4d. On line 4d write the result of adding line 4b (Montana income tax) and line 4c (federal income tax). The figure is the estimated state and federal taxes.

efits that are taxable, for example, federal civil service benefit (line 3b) and company pensions (line 3c).

Nancy and Fred expect to receive a total of \$9,860 from their company pension plans. They have zero federal civil service benefits. Their Social Security benefit is not subject to taxation so that amount is not included in step 4a. At the end of each year, those receiving Social Security are sent a Social Security Benefit Statement (Form SSA-1099) in the mail showing the amount of benefits received. This statement can be used when completing a federal income tax return to determine if any benefits are subject to tax.

Step 4b. On line 4b write the estimated Montana income tax on your estimated yearly income (4a). Use the

Montana Income Tax Table (Table 5) to make your estimate.

Because this worksheet is merely an estimate, Nancy and Fred decided that they will not reduce their income by the amount of the Montana standard deduction or exemptions. From Table 5 they discovered that their income of \$9,860 is taxed at a 5% rate. They multiplied \$9,860 by .05 and subtracted \$153. Their estimated Montana income tax is \$340 ($\$9,860 \times .05 = \$493 - \$153 = \340).

Step 4c. On line 4c write your estimated federal income tax on the estimated yearly income (4a). Use the Federal Income Tax Table (Table 6) to make your estimate.

Because this worksheet is merely an estimate, Nancy and Fred decided that they will not reduce their income

Nancy and Fred add \$340 (line 4b) and \$1,479 (line 4c) for a total of \$1,819, which is their estimated state and federal taxes.

Step 4e. On line 4e write the result of subtracting 4d (state and federal income taxes) from 4a (taxable income). This is an estimate of how much your taxable retirement income will be reduced by taxes.

Nancy and Fred subtract \$1,819 (line 4d) from \$9,860 (line 4a) with a result of \$8,041. This is an estimate of how much their taxable income (line 4a, \$9,860) will be reduced by state and federal taxes.

Step 4f. On line 4f write the result of adding 3a (Social Security benefit) to 4e (income after taxes). The result is the total income available to meet your retirement living expenses.

Table 4: Average Corporate Pension Benefits at Age 65

Annual Years' Earnings	Years of Service						
	10	15	20	25	30	35	40
\$15,000	\$1,830	\$2,775	\$3,675	\$4,635	\$5,520	\$6,240	\$6,840
\$20,000	\$2,250	\$3,410	\$4,510	\$5,680	\$6,760	\$7,605	\$8,305
\$25,000	\$2,675	\$4,050	\$5,350	\$6,725	\$8,000	\$8,975	\$9,775
\$30,000	\$3,105	\$4,700	\$6,190	\$7,790	\$9,250	\$10,385	\$11,310
\$35,000	\$3,535	\$5,355	\$7,035	\$8,855	\$10,500	\$11,795	\$12,845
\$40,000	\$3,970	\$6,005	\$7,880	\$9,940	\$11,820	\$13,275	\$14,430
\$45,000	\$4,410	\$6,660	\$8,730	\$11,025	\$13,140	\$14,760	\$16,020
\$50,000	\$5,300	\$7,750	\$10,150	\$12,250	\$14,650	\$16,450	\$17,950
\$55,000	\$5,830	\$8,525	\$11,165	\$13,750	\$16,115	\$18,095	\$19,745
\$60,000	\$6,360	\$9,300	\$12,180	\$15,000	\$17,580	\$19,740	\$21,540
\$65,000	\$6,890	\$10,075	\$13,195	\$16,250	\$19,045	\$21,385	\$23,335

Source: Employee Benefits in Medium and Large Private Establishments, 1993, USDL, Nov. 1994, p. 124
 Calculated from Bulletin 2496-1995

Nancy and Fred add their Social Security benefit of \$21,468 (line 3a) to after tax income of \$8,041 (line 4e) and rounded off to \$29,510. This is the amount they have available for their retirement living expenses.

Step 5. Determine if (or how much) additional yearly retirement income is required to achieve the level of living you desire.

Step 5a. On line 5a write the amount of annual after-tax retirement income that will provide the level of living you desire (use today's dollar value). Most couples plan to retire on an income that is between 60 and 80 percent of their gross income before retirement. The amount you need depends on the anticipated expenses for the level of living you desire. The 2000 Consumer Expenditure Survey that is conducted by the Bureau of Labor Statistics found that the average annual expenses for a couple age 65-74 was \$30,782 and for a couple age 75 and over, \$21,908.

Nancy and Fred would like to have an annual after-tax income that is equal to 80% of their gross income of \$45,000. The amount they write on line 5a is \$36,000 ($\$45,000 \times .80 = \$36,000$).

Step 5b. On line 5b copy the figure you entered on line 4f. This number is the total anticipated annual income from Social Security, Federal Civil Service and pensions after state and federal taxes have been paid.

Nancy and Fred copy the after-tax figure from line 4f (\$29,510) on line 5b.

Step 5c. On line 5c write the result of subtracting your annual after-tax income (line 5b) from after-tax retirement income that will provide the level of living you desire (line 5a). This is the yearly income required to supplement your after-tax Social Security and pension benefits to achieve the retirement level of living you desire.

Nancy and Fred subtracted \$29,510 (line 5b) from \$36,000 (line 5a) and found they will need an additional \$6,490 (in today's purchasing power) during each of their 25 years of retirement to supplement their retirement income. They wrote \$6,490 on line 5c.

Table 5: Montana Income Tax Rates (Tax Year 2002)

If Taxable Income Is:				
Over	But Not Over	Multiply by		and Subtract = Tax
\$ 0	\$ 2,200	x	2%	\$ 0
\$ 2,200	\$ 4,400	x	3%	\$ 22
\$ 4,400	\$ 8,700	x	4%	\$ 66
\$ 8,700	\$ 13,100	x	5%	\$ 153
\$ 13,100	\$ 17,400	x	6%	\$ 284
\$ 17,400	\$ 21,800	x	7%	\$ 458
\$ 21,800	\$ 30,500	x	8%	\$ 676
\$ 30,500	\$ 43,500	x	9%	\$ 981
\$ 43,500	\$ 76,200	x	10%	\$ 1,416
\$ 76,200	and over	x	11%	\$ 2,178

2002 Montana Individual Income Tax Booklet,
<http://discoveringmontana.com/revenue/css/default.asp>

The difference between expenses and income for Nancy and Fred is greater than zero (\$6,490). This means they need additional yearly income of \$6,490 to raise their retirement income from \$29,510 to \$36,000, which is the level of living they desire.

If you find the amount on line 5c is negative, this means your Social Security and pension benefits will more than provide the desired level of living you have chosen based on the figure you entered on line 5a (desired retirement income).

Step 6. Estimate the total amount you need to accumulate by retirement (in today's dollars) to provide additional income during retirement.

Step 6a. On line 6a write the multiplying number from the table in Step 6 (the table is part of the worksheet) that corresponds with the number of years from line 2 that you expect to be retired. The multiplying number is derived from a formula that assumes the amount that you will save for retirement will grow annually by two percent after taxes and inflation.

Nancy and Fred anticipate being retired for 25 years (line 2). The multiplying number from the table that corresponds to 25 years is 19.5, which they entered on line 6a.

Step 6b. Copy the number from line 5c which is the additional income needed to supplement after tax income from pensions and Social Security.

Nancy and Fred need an additional \$6,490 (line 5c) which they copied on line 6b.

Step 6c. On line 6c write the result of multiplying the number (line 6a) by the yearly amount of supplemental income needed from line 6b. This figure is the amount to be accumu-

Table 6: Federal Income Tax Brackets and Rates (Tax Year 2002)

Single	
\$0 to \$6,000	10%
\$6,001 to \$27,950	15%
\$27,951 to \$67,700	27%
\$67,701 to \$141,250	30%
Married Filing Jointly	
\$0 to \$12,000	10%
\$12,001 to \$46,700	15%
\$46,701 to \$112,850	27%
\$112,851 to \$171,950	30%
Married Filing Separately	
\$0 to \$6,000	15%
\$6,001 to \$23,350	15%
\$23,351 to \$56,425	27%
\$56,426 to \$85,975	30%
Head of Household	
\$0 to \$10,000	10%
\$10,001 to \$37,450	15%
\$37,451 to \$96,700	27%
\$96,701 to \$156,600	30%

Source: <http://www.irs.gov>

lated between now and retirement to achieve your desired level of living.

Nancy and Fred multiplied \$6,490 (line 6b) by 19.5 (line 6a). The result is \$126,685. This means they will need a retirement fund of \$126,685 (in today's purchasing power) at the time of their retirement. The fund will be used to provide additional income of \$6,490 (lines 5c/6b) each year during their 25 years of retirement.

Step 7. Write the total value of currently owned assets that you anticipate using for income during retirement on line 7.

These are your "designated" retirement assets. If you have IRAs, include the value of each one. Also include the value of any other funds you have designated for retirement. Do not include any savings such as your emergency fund, if you anticipate spending those dollars before retirement. Do not include the value of your house unless you plan to sell it and use the funds during retirement.

Nancy and Fred have \$60,000 in savings that they have "designated" as retirement assets, which they wrote on line 7.

Step 8. Determine the value of your "designated" retirement assets at retirement.

Step 8a. On line 8a write the multiplying number from the table in Step 8 (this table is part of the worksheet) that corresponds with the years your assets have to increase in value until retirement. Your assets have from now until you plan to retire to grow. Use the number you entered on line 1 as the number of years of growth. The multiplying number is derived from a formula that assumes your "designated" retirement assets will grow annually by two percent after taxes and inflation.

Nancy and Fred plan to retire in 20 years (line 1). The multiplying number from the table in step 8 that corresponds with 20 years is 1.49. They write 1.49 on line 8a.

Step 8b. Copy the amount from line 7 which is the current value of your assets designed for retirement.

Nancy and Fred enter \$60,000 (line 7) on line 8b.

Step 8c. On line 8c write the result of multiplying today's value of your

designated assets (line 8b) by the multiplying number (line 8a). The result is the value of your retirement assets at the time you retire. In other words, this calculation shows how much your assets will increase in value from now until the time you retire.

Nancy and Fred multiply \$60,000 by 1.49 with a result of \$89,400. This calculation assumes their "designated" retirement assets of \$60,000 (line 7) will increase by two percent each year for 20 years (line 1), after allowances have been made for inflation and taxes, to a value of \$89,400 at retirement.

Step 9. Determine if, or how much, additional money should be saved by retirement.

Step 9a. On line 9a copy the amount to be accumulated by retirement from line 6c.

The amount to be accumulated by retirement for Nancy and Fred is \$126,685 (line 6c) which they write on line 9a.

Step 9b. On line 9b write the value of your "designated retirement" assets at the year of retirement from line 8c.

Nancy and Fred's "designated" retirement assets of \$60,000 from line 7 will grow in value to \$89,400 (line 8c) by the time they retire in 20 years. They wrote \$89,400 on line 9b.

Step 9c. On line 9c write the result of subtracting the value of your designated assets (line 9b) from the amount to be accumulated at retirement (line 9a). If the amount is positive, then this is the additional savings you need to accumulate by retirement. If the amount is negative, then no additional savings need to be accumulated, based on the level of living you have chosen by the amount you entered on line 5a.

Nancy and Fred subtracted \$89,400 from \$126,685 with a result of \$37,285, which they write on line 9c. This means by the time they retire in 20 years, they "should" accumulate an additional \$37,285. This is the amount needed if they want to provide additional income of \$6,490 (line 5c) in purchasing power each year during retirement (25 years) to supplement their after-tax Social Security and pensions of \$29,510 (line 4f).

Step 10. Determine how much—if any—to save each year (in today's purchasing power) until retirement to achieve the funds needed for your chosen level of living.

The actual amount to save each year until retirement will need to be increased annually by the rate of inflation. Table 7 shows the annual inflation rates from 1960 through 2001.

Step 10a. On line 10a write the dividing number from the table in Step 10 (the table is part of the worksheet) that corresponds to the number of years you are from retirement (line 1). The dividing number is derived from a formula that assumes the amount you need to save each year will grow annually by two percent after taxes and inflation.

Nancy and Fred expect to retire in 20 (line 1) years so they write the dividing number 24.30 on line 10a.

Step 10b. On line 10b copy the amount from line 9c which is the additional savings to accumulate by retirement.

Nancy and Fred copy the figure of \$37,285 (line 9c) on line 10b.

Step 10c. Divide additional savings to accumulate by retirement (line 10b) by the dividing number for appropriate years until you retire (line 10a). If the figure on line 10c is positive, this is the amount to save each year in today's purchasing power to supplement Social Security and pension income during retirement to achieve your chosen level of living.

Nancy and Fred divide \$37,285 (line 10b) by 24.30 (line 10a). They rounded the result of 1534.36 to \$1,534. This means the additional savings needed by Nancy and Fred are \$1,534 yearly (in today's purchasing power) between now and their retirement which is 20 years in the future (line 1).

The actual amount you save each year until retirement will need to be increased annually by the rate of inflation. For example, if inflation is 5% next year, Nancy and Fred will need to increase their annual savings of \$1,534 by about \$77 to \$1,611 ($\$1,534 \times .05 = \$77 + \$1,534 = \$1,611$). Review Table 7 to see the rate of inflation each year for the past 40 years.

Step 10d. Divide the amount on line 10c (annual additional savings needed) by 12 to determine the amount to save monthly.

Nancy and Fred need to save approximately \$128 monthly ($\$1,534 \div 12 = \127.83 , rounded to \$128).

Nancy and Fred concluded that they are going to have to change their spending habits so they can save the amount calculated. They requested a list of MontGuides from the MSU Extension Service to learn tools and techniques for more effective management of their finances. If you would like a copy, contact your local Extension office or: Marsha A. Goetting, Extension Family Economics Specialist, P.O. Box 172800, MSU, Bozeman, MT 59717.

Step 11. Determine savings as a proportion of monthly income.

An easier way to deal with the uncertainty of future inflation is to commit to saving a fixed proportion of before-tax income. Over time the income derived from most jobs has increased at a rate at least equal to the rate of inflation. If Nancy and Fred commit to saving a fixed proportion of their before-tax income and their income increases at the inflation rate, the amount they save will automatically be adjusted for inflation over time. The following additional steps estimate the proportion of their income that Nancy and Fred will need to save to meet their retirement goals.

Step 11a. Write annual income on line 11a.

Nancy has a current income of \$20,000. Fred's income is \$25,000. Their total is \$45,000 which is written on line 11a.

Step 11b. Divide 11a (annual income) by 12 to obtain estimated monthly income.

Nancy and Fred divided \$45,000 by 12 with a result of \$3,750 ($\$45,000 \div 12 = \$3,750$).

Step 11c. Divide the amount from line 10d (additional monthly savings) by 11b (monthly income) and multiply by 100 to determine the percentage of income to save.

Nancy and Fred divided \$128 (line 10d) by \$3,750 (line 11b) and multiplied by 100 to obtain 3.41 percent ($\$128 \div \$3,750 = .0341 \times 100 = 3.41\%$).

If Nancy and Fred commit to saving 3.41 percent of their income and their income increases over time with inflation, their payments over time will increase sufficiently to meet their retirement needs.

Alternatives if you are not saving the amount calculated

If you are not saving the amount calculated on a monthly or yearly basis, now is the time to examine your finances and make new plans for your anticipated retirement. Possible alternatives to consider include:

1. Delaying retirement.
2. Increasing income now for a higher pension and/or more savings.
3. Spending less now and saving more.
4. Changing your savings and investments to ones that would yield more income.
5. Preparing for a different type of job after retirement.

It is never too soon to start planning and saving for retirement, because time will work for you. It is never too late to make some changes, but the longer you wait, the fewer options you may have.

Remember these calculations are based on the set assumptions as described on page one of this MontGuide. Your circumstances may require different assumptions. For example, if you are saving in tax-deferred investments such as an IRA, you may be able to achieve your financial goals for retirement while saving a smaller amount.

When to Re-Calculate Figures

If your circumstances change, you will need to recalculate the amount to save for retirement. Examples of events that require a recalculation include but are not limited to: changes in income tax or Social Security laws, substantial increases or decreases in the purchasing power of your salary, receipt of a substantial inheritance, depletion of retirement

Table 7: Inflation Rates

Year	Rates	Year	Rates
1960	1.7	1982	6.2
1961	1.0	1983	3.2
1962	1.0	1984	4.3
1963	1.3	1985	3.6
1964	1.3	1986	1.9
1965	1.6	1987	3.6
1966	2.9	1988	4.1
1967	3.1	1989	4.8
1968	4.2	1990	5.4
1969	5.5	1991	4.2
1970	5.7	1992	3.0
1971	4.4	1993	3.0
1972	3.2	1994	2.6
1973	6.2	1995	2.8
1974	11.0	1996	3.0
1975	9.1	1997	2.3
1976	5.8	1998	1.6
1978	6.5	1999	2.2
1979	7.6	2000	3.4
1980	11.3	2001	2.8
1981	13.5		

Source: Bureau of Labor Statistics, Consumer Price Index,
<http://www.bls.gov/cpi/home.htm#tables>

savings because of a catastrophic illness, decrease in the value of stocks held in your retirement plan, or a buy-out of your company pension plan.

Other Calculation Methods

There are a variety of web sites that provide information about the amount of money you need to save for retirement. Montana State University and Oklahoma State University have collaborated on a web site that lists 13 organizations that provide retirement savings calculations. Go to:

http://fcs.okstate.edu/frm/retirement_tour.htm

Consumers need to be vigilant in using the Web for retirement planning, because many sites are product-motivated. Also, assumptions made in the sites, such as projected inflation rates, tax rates, rates of return, and life expectancy may produce varying results. A very small change in any of these factors can have a significant impact on estimating the amount to save for retirement.

Estimating the Amount to Save for Retirement

Directions: Review the calculations on the worksheet for a Montana married couple, Nancy and Fred, who are in their mid-40s. Then use Plan A for your own figures. Use Plan B to explore alternatives such as delaying retirement or increasing yearly income desired.

Steps:	Montana Couple	Plan A	Plan B
1. Number of years until you plan to retire	20	_____	_____
2. Number of years you expect to be retired. (Use Table 1, Life Expectancy, as a guide).	25	_____	_____
3. Estimate yearly income expected.			
3a. Estimated yearly Social Security benefit (Table 2).	\$ 21,468	_____	_____
3b. Estimated yearly Federal Civil Service benefit (Table 3)	0	_____	_____
3c. Estimated yearly company pension (Table 4)	\$ 9,860	_____	_____
3d. Add lines 3a, 3b, and 3c (total yearly income expected)	\$ 31,328	_____	_____
4. Estimate reduction in income from state and federal taxes.			
4a. Add lines 3b and 3c (Result: income subject to state and federal income taxation).	\$ 9,860	_____	_____
4b. Estimated Montana income tax (Use Table 5)	\$ 340	_____	_____
4c. Estimated federal income tax (Use Table 6)	\$ 1,479	_____	_____
4d. Add 4b and 4c (Result: estimated state and federal taxes)	\$ 1,819	_____	_____
4e. Subtract 4d from 4a (Result: income left after taxes)	\$ 8,041	_____	_____
4f. Add 3a (Social Security benefit) to 4e (Result: total after tax income)	\$ 29,510	_____	_____
5. Estimate if (or how much) additional yearly retirement income is required to achieve level of living desired.			
5a. Projected yearly annual retirement live expenses in "today's" dollars. (Many people estimate 60 to 80 percent of current income)	\$ 36,000	_____	_____
5b. Estimated after-tax Social Security and pension income (4f)	\$ 29,510	_____	_____
5c. Subtract 5b from 5a (Result: if figure is positive, it is yearly income required to supplement your Social Security and pension benefits; if figure is negative, it is the amount of income that exceeds your expenses)	\$ 6,490	_____	_____
6. Estimate the total amount to be accumulated by retirement in today's dollars to provide additional income during retirement. (Multiplying number from Present Value of Annuity Table)			
Years	Multiplying Number	Additional Income	
5	4.71	6a. Write formula derived number from table on left that corresponds with number of years you expect to be retired (line 2).	19.52
7	6.47		_____
10	8.98		_____
12	10.57		_____
15	12.85	6b. Copy line 5c (additional income required)	\$ 6,490
17	14.29		_____
20	16.35		_____
22	17.69	6c. Multiply line 6a by 6b (Result: amount of assets to be accumulated by your retirement date).	\$ 126,685
25	19.52		_____
30	22.40		_____
32	23.47		_____
35	25.00		_____
37	23.47		_____
40	27.35		_____
7. Estimate current value of assets that will be used to produce retirement			\$ 60,000

(OVER)

8. Estimate value of “designated” assets at retirement. (Multiplying Number from Future Value Table)

Multiplying Years	Number Assets				
5	1.10	8a. Write formula-derived number			
7	1.15	from table on left that corresponds			
10	1.22	with number of years until			
12	1.27	retirement (from line 1)	1.49	_____	_____
15	1.35				
17	1.40	8b. Copy line 7			
20	1.49	(current value of assets)	\$ 60,000	_____	_____
22	1.55				
25	1.64	8c. Multiply line 8a by line 8b			
27	1.70	(Result: value assets will grow to			
30	1.81	by retirement)	\$ 89,400	_____	_____
35	2.00				
10	2.21				

9. Determine how much additional money, if any, should be saved by retirement.

9a. Write amount to be accumulated by retirement (line 6c) to provide a yearly income during years of retirement.	\$ 126,685	_____	_____
9b. Value of assets at retirement (line 8c).	\$ 89,400	_____	_____
9c. Subtract 9b from 9a (Result: additional savings to accumulate by retirement).	\$ 37,285	_____	_____

10. Determine how much to save each year, if any, (in today’s purchasing power) until retirement to achieve your chosen level of living. (Dividing Number from Future Value of Annuity Table)

Years	Dividing Number	Additional Income			
5	5.20	10a. Write formula-derived number from table on			
7	7.48	left that corresponds with number of years you are	24.30	_____	_____
10	10.95	from retirement (line 2)			
12	13.41				
15	17.29	10b. Copy figure from line 9c (additional savings to			
17	20.01	be accumulated by retirement)	\$ 37,285	_____	_____
20	24.30				
22	27.30	10c. Divide 10b by 10a			
25	32.03	(Result: amount to save each year)	\$ 1,534	_____	_____
27	35.34				
30	40.57	10d. Divide 10c by 12			
40	60.40	(Result: amount to save monthly)	\$ 128	_____	_____

11. Determine savings as a proportion of monthly income.

11a. Write current annual income before taxes	\$ 45,000	_____	_____
11b. Divide 11a by 12 to obtain current monthly income before taxes	\$ 3,750	_____	_____
11c. Amount to save monthly as a percentage of monthly before tax income (Divide 10d by 11b x 100) (Result: percent of income to save)	3.41 %	_____	_____

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