



Does It Pay to Work? The Case for Cutting the Social Security Tax for Workers near Retirement

By Andrew G. Biggs

Social Security's 12.4 percent tax is the largest paid by most workers and Social Security benefits are the largest income source for most retirees.¹ An individual considering whether to work or retire might ask, "What's in it for me? If I continue to pay into Social Security, how much additional benefit will I receive?" The answer: not much. The typical individual who works for an additional year before retiring will receive only 2.5 cents in additional benefits for each dollar of extra taxes paid to Social Security. This translates to a marginal rate of return of -49.5 percent. One reform to extend working years and enhance income security in retirement would be to reduce or eliminate the payroll tax for individuals above a given age.

The Social Security payroll tax is the largest tax paid by most workers and Social Security benefits are the largest source of income for most retirees. For that reason, the Social Security tax and benefit structure can have important effects on incentives to participate in the labor force. These incentives are expressed through the marginal return on taxes paid into Social Security—that is, the additional benefits paid on a small increment of additional earnings and contributions. Economic theory holds that the marginal return is more relevant to work and retirement decisions than the average return, and it may be particularly important for individuals near retirement, to whom the option of leaving the workforce is often available. Several factors influence marginal returns, including the type of benefit an individual receives in retirement, the individual's work history, and program rules.

In recent years, numerous studies have analyzed the rates of return on lifetime Social Security contributions to assess whether beneficiaries get their money's worth.² These studies are of interest but of limited application. Low returns for present and future Social Security participants are principally a function of changing demographics, generous

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payments to past participants, and the relatively low risk profile of the Social Security benefit structure. Once these factors are accounted for, little can be done to alter risk-adjusted average returns in the future.³

However, far less attention has been paid to Social Security's *marginal* return. The marginal return is here calculated as the interest (or discount) rate at which the present value of additional taxes equals the present value of additional benefits generated by the payment of those taxes.⁴ Marginal returns can be altered through policy changes, consistent with limitations imposed by the average return payable by the program.

Even as life expectancies have increased, the average age of Social Security benefit claiming has fallen from 68.4 in 1955 and 65.7 in 1965 to 63.7 in 2004.⁵ Early retirement under Social Security implies significant and permanent reductions in monthly payments and generally coincides with withdrawal from the labor force. In addition, some analysts are concerned that individuals are not saving sufficiently to provide for adequate retirement income. This is particularly so given prospects of rising retiree health care costs.⁶

In that context, many argue that individuals should spend additional years in the workforce

prior to retiring. Longer working lives result not only in higher Social Security benefits, but also in a longer period in which individuals are adding to rather than subtracting from retirement savings. Barbara A. Butrica, Karen E. Smith, and C. Eugene Steuerle conclude that an additional five years in the labor force would raise total retirement income for the typical individual by roughly 60 percent; for an individual in the lowest earnings quintile, total retirement income would almost double, increasing 98 percent.⁷

The Social Security Benefit Formula

Social Security retirement benefits are calculated using an average of the worker's thirty-five highest years of earnings.⁸ The benefit formula is progressive, meaning that it replaces a larger portion of preretirement earnings for workers with lower average earnings and a smaller portion for those with higher earnings.⁹

Social Security also pays spouse and survivor benefits based on the earnings records of current, former, or deceased spouses. A married person or a divorced person who was married to the worker for at least ten years can receive a benefit equal to 50 percent of the spouse's or ex-spouse's benefit (and a survivor can receive up to 100 percent) if benefits are claimed at the full retirement age (FRA). I refer to these here as auxiliary benefits. Some individuals are "dually entitled" under Social Security, meaning that they have earned a retired-worker benefit based on their own earnings but are also entitled to a larger auxiliary benefit. In these cases, the total benefit paid is equal to the spouse or survivor benefit.

Benefit payments are reduced for individuals who claim benefits before reaching the FRA. These adjustments are roughly actuarially neutral on average, meaning that the present value of expected lifetime benefits for the typical individual would not change according to the age at which benefits are initially claimed. This aspect of the Social Security program improves incentives to delay claiming relative to systems in other countries with no actuarial adjustments.¹⁰

Social Security program rules are gender-neutral, but the different earnings patterns of men and women can

imply different marginal returns from Social Security. Women tend to have shorter work histories and are more likely to receive auxiliary benefits, which flow to the lower-earning spouse in a couple. These two factors affect women's marginal returns in opposite ways. Marginal returns are generally higher for individuals with shorter work histories because additional earnings are more likely to be used in the thirty-five-year benefit calculation. This would tend to produce higher marginal returns for women, as men's work histories more often exceed the thirty-five years used to calculate Social Security benefits. On the other hand, receiving full or partial auxiliary benefits depresses marginal returns because auxiliary benefits are based on a spouse's earnings record rather than on one's own. Thus, recipients of auxiliary benefits are less likely to receive higher benefits in exchange for additional contributions to the program.

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Analyzing Marginal Returns

I conducted this analysis using the Social Security Administration's (SSA) Modeling Income in the Near Term (MINT) microsimulation model, which allows for detailed analysis of the income, Social Security benefits, pensions, and other characteristics of the U.S. population. The MINT microsimulation model matches data from the Census Bureau's Survey of Income and Program Participation with Social Security earnings records to produce thousands of individual work histories; these work histories are also projected forward to simulate future retirees. MINT calculates benefits based on individuals' own earnings, as well as auxiliary benefits based on earnings of household members.¹¹

To calculate the marginal return for each individual in the MINT sample population, a simulated year of earnings was added at the end of the individual's work life.¹² I calculated the internal rate of return (IRR) from additional payroll taxes and any additional individual or auxiliary benefits generated from them. If, by working longer, the higher-earning member of a couple generates additional benefits for his or her spouse, these

additional benefits are credited to the higher earner's marginal return.

The marginal rate of return equals the real annual interest rate at which the present value of taxes paid on an additional year of work is equal to the present value of benefits gained for that work. The marginal rate of return can be considered as an interest rate earned on additional taxes paid into Social Security. Because the marginal return focuses on events toward the end of one's work life, an individual who works an additional year but receives no additional benefits would have a marginal return of -100 percent. This could happen if the individual's additional year of earnings is not in the highest thirty-five years of earnings—and would thus not be included in the benefit formula—or if the individual receives auxiliary benefits from a spouse's work history in each year of retirement. For others, the marginal return would depend, among other things, on the dollar thresholds at which the 90 percent, 32 percent, and 15 percent replacement factors of the basic benefit formula are applied. For low earners, replacement rates are higher, so additional earnings could have relatively large effects on retirement benefits. Likewise, an additional year of work might entitle an otherwise ineligible individual to benefits; this could produce a very high marginal return.

While the marginal return reflects work incentives, it will not necessarily reflect the generosity or fairness of benefits relative to taxes. For example, an auxiliary beneficiary may receive a benefit from Social Security while having paid little or nothing in taxes. Such a person would face poor incentives to work but may nevertheless be treated generously by Social Security. A lifetime rate of return, which compares the present value of total taxes paid to total benefits received, is a more common measurement of program generosity.

Study Results

My analysis includes individuals aged sixty-two to sixty-five in 2005 and, separately, individuals aged sixty-two to sixty-five in 2035. Individuals who make no payroll tax contributions over their careers, or who are projected never to receive benefits from Social Security, are excluded from the analysis. I also excluded individuals

who ever received disability benefits from Social Security, as these individuals are presumed to be unable to remain in the workforce. Finally, an additional restriction is to exclude persons whose last positive year of earnings occurred in the year prior to death.¹³

For the 2005 sample, the median marginal return is -49.5 percent.¹⁴ Marginal returns differ for men and women; men in 2005 have a median marginal IRR of -22.2 percent, while the median value for women is -100 percent. Table 1 shows that marginal returns do not follow a clear pattern by levels of lifetime earnings. Marginal returns tend to be least negative for individuals at the bottom and the top of the earnings distribution, though they are low across the board.

The primary cause of low returns for men is a full work history, whereas auxiliary benefits play a more important role for women.

TABLE 1
MARGINAL RETURNS BY LIFETIME EARNINGS LEVEL

Lifetime earnings quintile	Median marginal rate of return (percentage)
Lowest	-23.4
Second	-60.9
Third	-97.9
Fourth	-55.2
Highest	-35.4

SOURCE: Author's calculations.

Analyzed relative to time in the workforce, marginal returns are lowest for those with fewer than ten years of earnings, almost all of whom receive returns of -100 percent. This is because nondisabled individuals with fewer than ten years in the labor force generally cannot qualify for benefits based on their own earnings records. Median marginal returns are -100 percent for individuals with fewer than ten years of earnings, improve to -37.1 percent for individuals with twenty to twenty-nine years of earnings, and reach -32.7 percent for those with thirty or more years of earnings.

For 34.9 percent of men, the marginal return is -100 percent. In other words, for roughly one-third of men, an additional year of earnings and tax payments at the end of their working lives results in no increase in benefits. About 52 percent of women have marginal IRRs of -100 percent. This implies that the typical woman would receive no extra

benefits for any additional taxes paid into the Social Security program. A low marginal return could occur because of a full and substantial work history, such that earnings at late ages do not replace years with low or zero earnings in the benefit formula, or because the individual receives auxiliary benefits in each year of retirement. The primary cause of low returns for men is a full work history, whereas auxiliary benefits play a more important role for women.

For the 2005 sample, 10.1 percent of individuals would receive a marginal return in excess of 3 percent above inflation, taken to indicate an actuarially fair return, as 3 percent is the approximate return projected for government bonds. For such individuals, the incentive to work an additional year would be relatively strong. Women are somewhat more likely than men to receive a return above 3 percent (10.4 percent versus 9.7 percent). Actuarially fair marginal returns are most common among individuals in the lowest lifetime earnings quintile, 22.9 percent of whom would receive marginal returns above 3 percent. This is presumably because of both the progressive nature of the benefit formula and the very high marginal return one would receive upon first becoming entitled to benefits after earning the required minimum of forty quarters (roughly ten years) of employment.

Because rates of return are often thought of in terms of “interest,” the highly negative median returns reported above may be difficult to interpret intuitively. Another measure of money’s worth—the marginal benefit/tax ratio—may provide additional perspective on the value of working close to retirement. The marginal benefit/tax ratio is calculated by comparing the present value of benefits generated by an additional year of work to the present value of taxes paid in that year of work.¹⁵ The median marginal benefit/tax ratio for individuals aged sixty-two to sixty-five in 2005 is 0.025. This signifies that the typical individual would receive 2.5 cents of additional benefits back from an additional dollar of taxes. For women, the median marginal benefit/tax ratio is zero; for men, it is 0.094, implying 9.4 cents in benefits for each additional dollar of taxes paid.

By multiplying the marginal benefit/tax ratio by the current payroll tax rate of 12.4 percent, it is possible to decompose the statutory tax into two parts: the first, a contribution upon which actuarially fair benefits are paid; the second, a pure tax upon which no benefits are paid in

return. Thus, at the median, about 0.3 percentage points of the 12.4 percent payroll tax near retirement can be thought of as a contribution and about 12.1 points as a pure tax.¹⁶

Lowering Payroll Taxes near Retirement Age to Increase Marginal Returns

A number of options are available to improve incentives to remain in the workforce near retirement age. One option is reducing or eliminating the Social Security payroll tax once individuals have reached a given age. The logic behind this is straightforward: the findings above indicate that most individuals receive few if any additional benefits in exchange for the additional taxes they might pay, thereby resulting in a low marginal return. This low marginal return can be ameliorated by reducing the tax paid into the program at older ages.

One option explored here is eliminating the employee share of the Social Security payroll tax—6.2 percentage points out of the 12.4 percent total tax. Although benefit payments would not be changed, the tax cost of any increase in benefits would be reduced by half. For

individuals aged sixty-two to sixty-five in the year 2035, the median marginal IRR would rise from –16.1 percent under current law to –10.5 percent. In addition, individuals receiving an actuarially fair or more than fair return would increase from 14.5 percent under current law to 26.2 percent. Improvements would be relatively uniform across gender and earnings dimensions.

Reducing or eliminating payroll taxes for older workers would have an impact on the long-term solvency of the program. Using the GEMINI model of the Social Security program, I simulated the elimination of the employee portion of the Social Security payroll tax for individuals aged sixty-two and older beginning in 2010. This would increase the long-term Social Security shortfall by around 10 percent; eliminating the tax for individuals over age sixty-five would increase the shortfall by less than 3 percent.

These are static estimates, assuming no increases in labor force participation. However, workers nearing retirement may be more sensitive to changes in the marginal returns to Social Security, as their larger assets, lower family support costs, and the availability of Social Security and other pension benefits make leaving the workforce a more viable

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option than for middle-aged individuals.¹⁷ Using state tax rates as a control variable, Lucie Schmidt and Purvi Sevak find that a reduction in the marginal tax rate that would increase the payoff of working by 10 percent would increase labor force participation by 7.9 percent among men and 4.9 percent among women and increase hours worked by those already employed by 5.3 percent for men and 3.6 percent for women.¹⁸ For context, the elimination of the employee share of the Social Security payroll tax discussed above would increase after-tax wages by around 7 percent. These estimated elasticities are larger than those generally held for the workforce as a whole.¹⁹ If these estimates were to hold, reductions in the Social Security tax for older workers could be at least partially self-financing through the Social Security program. In addition, the federal and state governments would collect increased income taxes as a result of higher labor force participation. In the context of larger Social Security reforms to restore solvency, reductions in Social Security taxes at older ages should be considered as a means to encourage delayed retirement.

Conclusion

The incentives presented by Social Security's tax and benefit policies can affect decisions about whether and how much to work and when to leave the labor force and retire. The marginal returns calculated here quantify some of the ways Social Security exerts such an influence.

Low marginal returns should not be conflated with unfair treatment by the Social Security program. In fact, the opposite may be true. The most likely cause of an individual receiving a marginal return of -100 percent is that she is the recipient of auxiliary benefits based on a spouse's earnings record. These are benefits in excess of those the individual would be entitled to receive based on her own earnings record, and individuals who receive auxiliary benefits tend to have higher lifetime returns than other Social Security beneficiaries. The lifetime rate of return remains the best indicator of an individual's overall treatment by the Social Security program. Nevertheless, marginal returns are more relevant to the work incentives presented to an individual by the program, and changes to improve incentives to delay retirement should be considered as part of broader Social Security reform.

This Retirement Policy Outlook is based on research conducted with David Weaver and Gayle Reznik in "Social Security and Marginal Returns to Work near Retirement" (Issue Paper 2, Social

Security Administration, Baltimore, MD, April 2009), available at www.socialsecurity.gov/policy/docs/issuepapers/ip2009-02.pdf (accessed April 14, 2009).

Notes

1. See Leonard E. Burman and Greg Leiserson, "Two-Thirds of Tax Units Pay More Payroll Tax Than Income Tax," *Tax Notes*, April 9, 2007, available through www.urban.org/publications/1001065.html (accessed March 11, 2009); and Social Security Administration, "Fast Facts & Figures about Social Security," September 2008, available at www.socialsecurity.gov/policy/docs/chartbooks/fast_facts/2008/ (accessed March 11, 2009).

2. See Dean R. Leimer, "A Guide to Social Security Money's Worth Issues," *Social Security Bulletin* 58, no. 2 (Summer 1995): 3-20, available at www.ssa.gov/policy/docs/ssb/v58n2/v58n2p3.pdf (accessed March 11, 2009).

3. John Geanakoplos, Olivia S. Mitchell, and Stephen P. Zeldes, "Social Security Money's Worth" (Working Paper 6,722, National Bureau of Economic Research, Cambridge, MA, September 1998), available at www.nber.org/papers/w6722 (accessed March 12, 2009).

4. For instance, imagine if an individual chose to work rather than retire at age sixty-five and during that year paid an additional \$1,000 in Social Security taxes. In return for these additional taxes, annual benefits would increase by \$75, continued over the individual's retirement of twenty years. The marginal return on the \$1,000 in additional taxes would be 4.2 percent.

5. "Annual Statistical Supplement, 2005," *Social Security Bulletin* (February 2006), available at www.socialsecurity.gov/policy/docs/statcomps/supplement/2005/ (accessed March 12, 2009).

6. See Jonathan Skinner, "Are You Sure You're Saving Enough for Retirement?" *Journal of Economic Perspectives* 21, no. 3 (Summer 2007): 59-80.

7. Barbara A. Butrica, Karen E. Smith, and C. Eugene Steuerle, "Working for a Good Retirement" (Retirement Project Discussion Paper 06-03, Urban Institute, Washington, DC, May 23, 2006), available at www.urban.org/url.cfm?ID=311333 (accessed March 12, 2009).

8. Earnings prior to age sixty are indexed for wage growth in the economy, but those in the year of attaining age sixty and after are not indexed. The average is known as average indexed monthly earnings (AIME).

9. For example, the basic benefit formula for a worker who first becomes eligible to receive benefits in 2009 is 90 percent of the first \$744 of AIME; plus 32 percent of AIME over \$744 through \$4,483; plus 15 percent of AIME over \$4,483. The dollar thresholds (\$744 and \$4,483) at which the percentage factors change

are called “bend points” and are adjusted annually by the Social Security Board of Trustees. Only earnings up to the maximum taxable amount in each year are used in the basic benefit formula. In 2009, the maximum taxable amount is \$106,800, and the maximum benefit for a worker retiring at the full retirement age is \$2,323 per month.

10. See Jonathan Gruber and David Wise, “Social Security Programs and Retirement Around the World” (Working Paper 6,134, National Bureau of Economic Research, Cambridge, MA, August 1997), available at www.nber.org/papers/w6134 (accessed March 12, 2009).

11. Information on the MINT model can be found in Eric Toder et al., *Modeling Income in the Near Term: Revised Projections of Retirement Income through 2020 for the 1931–1960 Birth Cohorts* (Washington, DC: Urban Institute, June 2002), available at www.urban.org/publications/410609.html (accessed March 12, 2009).

12. In our sample, the median age of the last year of earnings is sixty-five. The individual’s simulated earnings for this additional year equal the average of his or her nonzero earnings over the preceding five years.

13. I also exclude a relatively small number of cases that had multiple internal rate of return (IRR) solutions, since it is unclear which solution should be used in the analysis.

14. For the marginal IRR analysis, 23.6 percent of individuals were excluded due to sample restrictions. The percentage in each exclusion category is as follows (the total is greater than 23.6 percent because some individuals met more than one exclusion criterion): 3.7 percent for not having paid payroll tax contributions, 5.9 percent for never having received Social Security benefits, 9.6 percent for being disabled, and 8.3 percent for having the last positive year of earnings occurring in the year prior to death. Almost 5 percent of women (4.9 percent) never paid payroll taxes (as compared to 2.3 percent of men).

15. For comparative purposes, a ratio of benefits to taxes equal to one signifies that the marginal IRR would be equal to around 3 percent, the trust fund interest rate used in calculating these present values.

16. Using the Continuous Work History Sample (CWHHS), John Sabelhaus found that the payroll tax near retirement was largely a tax for men, not for women. However, Sabelhaus cautions that with CWHHS data, it is not possible to incorporate the effects of auxiliary benefits. (John Sabelhaus, “What Is the Effective Social Security Tax on Additional Years of Work?” *National Tax Journal* 60 [September 2007]: 461–506, available at www.entrepreneur.com/tradejournals/article/171442392.html [accessed March 12, 2009].) Barbara Butrica, Richard W. Johnson, Karen E. Smith, and C. Eugene Steuerle examine the implicit tax rate faced by older workers, taking Social Security and other public and private programs into account. They find high implicit tax rates at late ages. (Barbara Butrica, Richard W. Johnson, Karen E. Smith, and C. Eugene Steuerle, “Implicit Taxes and Returns to Work at Older Ages,” *National Tax Journal* 59 [June 2006]: 211–34).

17. For information on wage elasticities, see Congressional Budget Office (CBO), “Labor Supply and Taxes” (CBO Memorandum, Washington, DC, January 1996), available at www.cbo.gov/ftpdocs/33xx/doc3372/labormkts.pdf (accessed March 12, 2009).

18. Lucie Schmidt and Purvi Sevak, “Taxes, Wages, and the Labor Supply of Older Americans” (Working Paper 139, Retirement Research Center, University of Michigan, Ann Arbor, MI, November 2006), available at www.mrrc.isr.umich.edu/publications/Papers/pdf/wp139.pdf (accessed March 24, 2009).

19. CBO, “The Effect of Tax Changes on Labor Supply in CBO’s Microsimulation Tax Model” (CBO Background Paper, Washington, DC, April 2007), available at www.cbo.gov/ftpdocs/79xx/doc7996/04-12-LaborSupply.pdf (accessed March 12, 2009).