



WILL WE HAVE TO WORK FOREVER?

By Alicia H. Munnell, Marric Buessing, Mauricio Soto, and Steven Sass*

INTRODUCTION

Today, the average retirement age is 63.¹ If people continue to retire at 63, they are going to face a severe decline in living standards at retirement for a number of reasons. First, at any given retirement age, Social Security benefits will replace less of pre-retirement earnings as the Normal Retirement Age rises from 65 to 67. Second, Medicare premiums, which are deducted before the Social Security check goes in the mail, are slated to rise dramatically. Third, taxes on Social Security benefits will also rise. In addition, pension coverage in the private sector has shifted from defined benefit plans, where workers receive a life annuity based on years of service and final salary, to 401(k) plans, where individuals are responsible for their own saving and the median balance for individuals approaching retirement is only \$60,000.²

One powerful antidote to reductions in retirement income is to work longer.³ Working directly increases people's current income; it avoids the actuarial reduction in Social Security benefits; it allows their 401(k) plans to grow; and it postpones the day when they

start drawing down their pension accumulations or other retirement saving. The question is how much longer people will need to work.

This *brief* examines the effect of working longer on replacement rates and finds that delaying retirement by about two years can have a major impact on retirement security for those with significant 401(k) assets; households that depend solely on Social Security, however, would have to extend their work lives by more than three and a half years to achieve similar gains.⁴

THE DECLINING ROLE OF SOCIAL SECURITY

The declining role of Social Security is seen most clearly by examining the benefits of the hypothetical "medium earner," a worker who essentially earns the national average wage over the course of his or her lifetime. In 2002, a "medium earner" retiring at age 63 received Social Security benefits equal to about 36 percent of pre-retirement earnings.⁵

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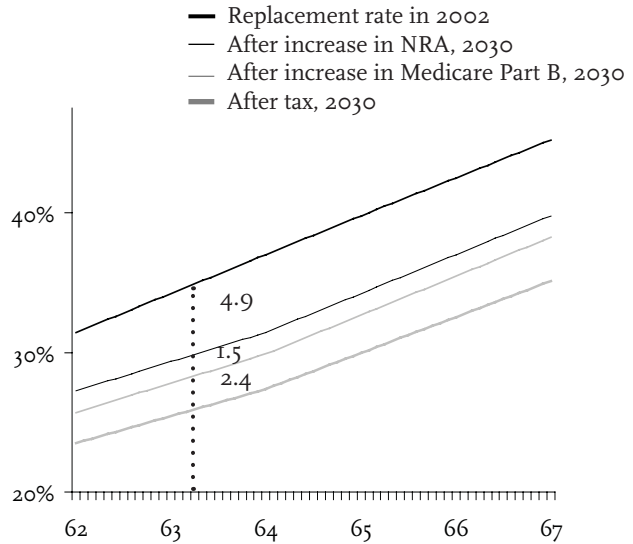
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By 2030, Social Security replacement rates will be substantially lower for three reasons, as shown in Table I.⁶ First, the legislated increase of the Normal Retirement Age (NRA) — the age at which workers obtain unreduced annual benefits from Social Security — is going from 65 to 67. This change will reduce the gross replacement rate by 4.9 percentage points. Second, Medicare Part B premiums are projected to rise dramatically as a percent of the average Social Security benefit, and this will reduce the 2030 net replacement rate by 1.5 percentage points. Third, while today only a handful of individuals pay taxes on their benefits, in 2030 medium earners are likely to pay income tax on half of their benefits.⁷ As a result, the net replacement rate at age 63 will decline by another 2.4 percentage points.

Figure 1 presents graphically the changes in the replacement rates between 2002 and 2030 age-63 replacement rates and the comparable replacement rates for people retiring at different ages. The lines

FIGURE 1. PROJECTED 2030 SOCIAL SECURITY REPLACEMENT RATE



Note: The calculations are for the medium earner. The actual replacement rate in 2030 will be 2 percentage points below the bottom line in Figure 1 because it does not reflect the 2002 Medicare Part B premium.

TABLE I. PROJECTED REDUCTIONS IN SOCIAL SECURITY REPLACEMENT RATES BETWEEN 2002 AND 2030

Development	Retirement age	
	Age 63	Age 65
2002 reported replacement rate	36.2	41.8
2030 reported replacement rate after extension of Normal Retirement Age	31.4	36.2
Change in replacement rate	-4.9	-5.6
2002 Medicare Part B deduction	2.0	2.0
2030 Medicare Part B deduction	3.6	3.6
Change in replacement rate	-1.5	-1.5
2002 Personal income taxation	0.0	0.0
2030 Personal income taxation	2.4	2.7
Change in replacement rate	-2.4	-2.7
Total change in replacement rate 2002-2030	-8.8	-9.8

Source: Munnell (2003) and authors' calculations.

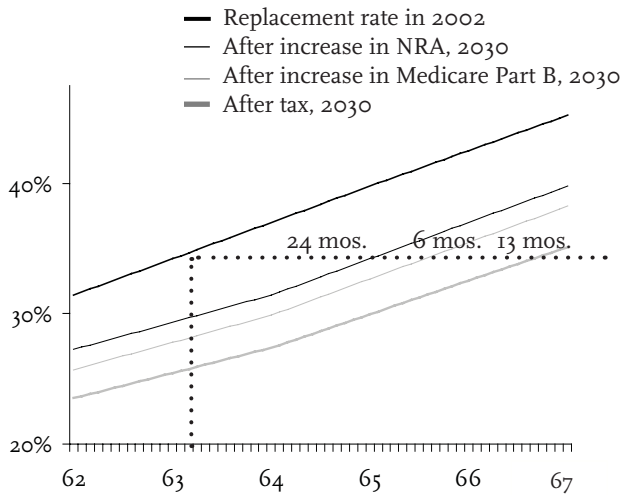
slope upwards because those who retire later see their benefits increased and those who retire early receive actuarially reduced benefits. As reported in Table 1, the largest reduction in replacement rates comes from the increase in the Normal Retirement Age, which lowers replacement rates by about 5 percentage points; increases in the Medicare Part B premium and taxation further lower replacement rates by 1.5 and 2.4 percentage points. Appendix Table A1 reports the changes in replacement rates for ages 62 to 70.

WORK CAN OFFSET THE DECLINE IN SOCIAL SECURITY REPLACEMENT RATES

Future retirees need not panic. Although the replacement rate reductions are significant, a few years of work can make retirees in 2030 as well off as those in the current generation. In other words, working longer does not mean working forever.

The easiest calculation is the required response to the increase in the Normal Retirement Age. By definition, a worker in 2030 will have to work until age 67 to receive the same replacement rate as a worker

FIGURE 2. ADDITIONAL MONTHS OF WORK NEEDED IN 2030 TO OFFSET REDUCTIONS TO SOCIAL SECURITY REPLACEMENT RATE

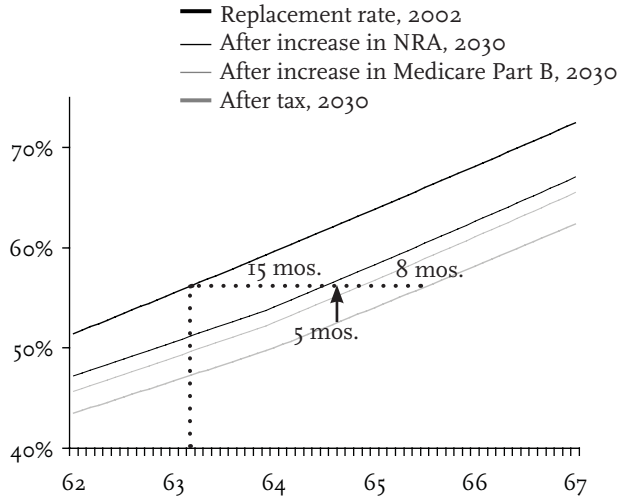


Source: Authors' calculations.

retiring at 65 today.⁹ Similarly, those who would have chosen actuarially reduced benefits at age 63 in 2002 will have to delay claiming benefits to age 65 in 2030 to receive the same replacement rate. This increase in the required worklife is shown in Figure 2 by the line labeled “24 months.” That is, the 63 year-old who receives a replacement rate of 36 percent sees it drop 4.9 percentage points unless he delays claiming benefits. To see how long he must keep working, he follows the dotted line along to the right until it reaches 36 percent. This will require working 24 months longer or until age 65.

With a simple model, it is possible to calculate the increase in required worklife to offset the projected increase in the Medicare premium and taxation of Social Security benefits. (For a description of the model, see the Appendix.) The reduction from the Medicare Part B premium can be reversed in less than a year — “6 months” in Figure 2; and that from taxes can be reversed in about a year — “13 months.” To compensate for all the foreseeable changes to the Social Security replacement rate, workers will need to extend their worklives by about three and a half years.

FIGURE 3. ADDITIONAL MONTHS OF WORK NEEDED IN 2030 TO OFFSET REDUCTIONS TO TOTAL REPLACEMENT RATE WITH FINANCIAL ASSETS



Source: Authors' calculations.

THE EFFECT OF A 401(k) PLAN AND OTHER FINANCIAL ASSETS

Workers who reach retirement with significant assets in their 401(k) plans or other accounts will have to work less than four years to offset the projected reductions in Social Security replacement rates. The reason is that additional years of work, assuming financial assets are left untouched, increase the ultimate annual income that can be derived from 401(k) accumulations. Part of the increase comes from the return: the value of a balanced portfolio, for example, is expected to increase by 4.6 percent per year.¹⁰ The other part of the story is that by working longer, the expected years in retirement decrease, raising the income available for each retirement year.¹¹ To make the 401(k) money comparable to Social Security benefits, which are indexed for inflation, 401(k) proceeds are used to purchase an inflation-indexed annuity.

Consider a medium earner who reaches age 63 in 2002 with 401(k) assets that could buy a real annuity that would produce a replacement rate of 20 percent. The model shows that this worker will only need to work for about 28 months — significantly less than

workers without financial assets — to offset the reductions in Social Security (see Figure 3). For example, the worker only needs to work an additional 15 months rather than 24 months to offset the reduction in the replacement rate due to the Normal Retirement Age because the additional income from the 401(k) assets makes up for some of the loss.

CONCLUSION

There is no question that even under current law Social Security will provide less in the future relative to pre-retirement income than it has in the past. Many people are also likely to end up with modest 401(k) accumulations, and they save little outside of pensions. At the same time that retirement resources are declining, life expectancy is increasing, leading to extended periods in retirement. If the average retirement age remains at 63, people will suffer a serious drop in their standard of living when they stop working. One way to solve the dilemma is for people to work longer. But how much longer? The purpose of this *brief* is to bound that prescription by quantifying how much longer people in 2030 will have to work to duplicate today's replacement rates. The very simple results reported above show that the answer is not "forever," but about three and a half years for those without 401(k) assets and slightly more than two years for those with significant 401(k) accumulations. Unfortunately, those who will have to work the longest are the lower paid and typically more vulnerable members of society.

ENDNOTES

1 The average retirement age as defined here is the age at which more than half of men are no longer participating in the labor force. The comparable average retirement age for women is 62.

2 This figure differs from the median balance of about \$35,000 reported in the Survey of Consumer Finances (see Bucks, Kennickell, and Moore, 2006) because it focuses on household heads age 55-64 and excludes spouses.

3 A recent study from the Retirement Confidence Survey also suggests that many Americans will probably work longer than they expect (Helman, Copeland, and VanDerhei, 2006).

4 Replacement rates measure the extent to which older people can maintain their pre-retirement levels of consumption once they stop working. In this brief, retirement income is measured by Social Security benefits and income from financial assets and pensions; pre-retirement income is given by annualized Average Indexed Monthly Earnings (AIME) — a measure of lifetime earnings indexed by wage growth. For more details on replacement rates, see Munnell and Soto (2005).

5 The replacement rate for the "medium earner" retiring at age 65 averaged 41.8 between 1992 and 2002. (See U.S. Social Security Administration (1992-2005).

6 The relationship between the 2002 and 2030 replacement rates in Table 1 differs very slightly from those in the 2006 Trustees Report because Table 1 assumes the same replacement rate at the Normal Retirement Age for both years and the Trustees Report does not.

7 For more details on these projected reductions, see Munnell (2003).

8 The figures focus on the changes in replacement rates from 2002 to 2030. The actual replacement rate in 2030 is the gross reported replacement rate in 2030 minus the estimated changes from 2002 to 2030 minus 2 percentage points from the current Medicare Part B Premium.

9 Some workers may be able to offset the increase in the NRA in less than 24 months because of increases in the Average Indexed Monthly Earnings (AIME) — the base on which Social Security benefits are calculated. Working an extra year increases the AIME if earnings during the year are greater than the lowest of the highest 35 years of indexed earnings.

10 The after-tax real return of a balanced portfolio is 3.91 (4.6 percent after a 15 percent marginal rate of taxes). A balanced portfolio, as defined here, is composed of 50 percent stocks, 30 percent corporate bonds, and 20 percent government bonds. See Goss and Wade (2002).

11 Using the 1940 cohort as a base and interpolating from the current market real annuities from Vanguard, payments would increase by an average of 2.8 percent from age 62 to age 70, which is equivalent to a 2.4 percent after-tax increase per year for a marginal tax rate of 15 percent.

12 The medium earner is assumed to have an AIME equal to the level of the national average wage in the year in which the worker reaches age 62. See U.S. Social Security Administration (1992-2005).

13 For more details on the NRA, the early retirement reductions, and the delayed retirement credit, visit the Social Security Retirement Planner at <http://www.ssa.gov/retire2/near.htm>

14 See Foster and Clemens (2005).

15 See endnotes 10 and 11.

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TECHNICAL APPENDIX

This *brief* focuses on the “Medium Earner” — a hypothetical worker with career average earnings equal to the average of the economy-wide wages at the time of his retirement. The Social Security Trustees use this concept to present projected benefit amounts and replacement rates under current law.¹²

The Medium Earner claiming benefits at age 65 (the NRA) in 2002 receives a replacement rate of 41.8 percent; the same Medium Earner claiming at age 67 (the new NRA) in 2030 will also receive a replacement rate of 41.8 percent. (The model presented here does not allow working an extra year to increase the AIME, so benefits at the NRA remain constant regardless of the age of claiming). Starting with these replacement rates, four main factors are taken into consideration for the tables and charts presented in this *brief*.

1) The increase in the NRA from 65 in (and before) 2002 to 67 in (and after) 2025. The reduction in benefits is based on the number of months of entitlement prior to the month in which individuals reach the NRA. For 2002, the reduction is 5/9 of 1 percent for each month; for 2030, the reduction is 5/9 of 1 percent for each of the first 36 months and 5/12 of 1 percent for each month in excess of 36.¹³

2) The increase in the actuarial credits for delayed retirement past the NRA and up to age 70, from 6.5 percent per year (13/24 of 1 percent per month) in 2002 to 8 percent per year (2/3 of 1 percent per month) in 2030.

3) The increase in the Medicare Part B premium. Medicare Part B premiums are projected to increase from about 4.8 percent of the Medium Earner’s benefit retiring at the NRA in 2002, and about 9.8 percent for the same worker retiring at the NRA in 2030.¹⁴ The premiums are the same for all workers in a given year, regardless of their age of claiming. Medicare Part B premiums are shown for individuals retiring at age 63, even though the premium will not start until age 65.

4) The increase in taxation, from no taxation for the Medium Earner in 2002 to an estimated 15 percent income tax on half of the benefit in 2030 — 7.5 percent of the Social Security benefit before deductions for Medicare Part B.

Financial and pension assets are treated in a very simple manner. The assumption is that those covered by an employer-sponsored pension will reach age 62 with an accumulation of financial and pension assets, which “buys” a real annuity equivalent to 20 percent of the AIME. No further contributions are made after age 62. The only sources of growth in replacement rates from pension and financial assets are 1) a 3.91 percent real annual rate of return — the expected rate of return on a balanced portfolio (4.6 percent) after 15 percent taxes — and 2) a 2.4 percent annual adjustment for real annuity factors to reflect the reduction in the period over which payments will be made.¹⁵ This means that every year after age 62 increases the pension and asset replacement rate by about 6.3 percent. So the replacement rate from financial and pension assets is 20 at age 62, 21.3 at 63, 24.1 at 65, and 27.3 at 67.

A simple example can help illustrate these calculations. Start with an individual retiring at 63 in 2002. His replacement rate will be 36.2 ($(100 - (5/9 * 24)) * 41.8$). A similar individual, reaching the NRA with a replacement rate of 41.8, that claims benefits at age 63 in 2030 will have a replacement rate of 31.4 ($(100 - (5/9 * 36) - (5/12 * 12)) * 41.8$). So the change in Social Security replacement rate is 4.9 percentage points ($36.2 - 31.4$).

The Medicare deduction in 2002 is about 4.8 percent of the benefit at age 65, or about 2.1 percentage points ($0.048 * 41.8$). The individual that claims benefits at 63 will see his Social Security replacement rate reduced by this amount after he reaches age 65. In 2030, the projected Medicare deduction is about 9.8 percent of the benefit at 65, or 3.6 percentage points ($0.098 * ((100 - (5/9 * 24)) * 41.8)$). So the change in Social Security replacement rates due to increases in Medicare Part B premiums is 1.5 percentage points.

Taxes are 15 percent of half of the gross benefit and are projected to have an effect on the medium earner in 2030. The change in Social Security replacement rates due to the personal income tax is 2.4 percentage points ($31.4 * 0.50 * 0.15$).

Table A1 presents the replacement rates and projected changes for all possible years of claiming for 2002 and 2030. Table A2 shows the number of months of delay in claiming benefits that will offset the reductions in replacement rates.

TABLE A1. REPLACEMENT RATES FOR A MEDIUM EARNER, BY AGE OF CLAIMING, 2002 AND 2030.

Development	Retirement age								
	62	63	64	65	66	67	68	69	70
2002 reported replacement rate	33.4	36.2	39.0	41.8	44.5	47.2	50.0	52.7	55.4
2030 reported replacement rate after extension of Normal Retirement Age	29.3	31.4	33.4	36.2	39.0	41.8	45.1	48.5	51.8
Change in replacement rate	-4.2	-4.9	-5.6	-5.6	-5.5	-5.4	-4.8	-4.2	-3.6
2002 Medicare part B	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2030 Medicare part B deduction	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Change in replacement rate	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
2002 personal income taxation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030 personal income taxation	2.2	2.4	2.5	2.7	2.9	3.1	3.4	3.6	3.9
Change in replacement rate	-2.2	-2.4	-2.5	-2.7	-2.9	-3.1	-3.4	-3.6	-3.9
Total change in replacement rate 2002-2030	-7.9	-8.8	-9.6	-9.8	-10.0	-10.1	-9.7	-9.4	-9.0

Source: Authors' calculations.

TABLE A2. ADDITIONAL MONTHS OF WORK NEEDED IN 2030 TO OFFSET REPLACEMENT RATE REDUCTIONS WITHOUT AND WITH FINANCIAL ASSETS.

Without financial assets										
	Age of claiming									Average
	62	63	64	65	66	67	68	69	70	
After extension of NRA	24	24	24	24	21	19	17	-	-	24
After Medicare part B	6	6	6	5	6	6	5	-	-	6
After personal income tax	12	13	13	13	13	-	-	-	-	14
Total in months	42	43	43	42	40					42
Total in years	3.5	3.6	3.6	3.5	3.3					4
With financial assets										
	Age of claiming									Average
	62	63	64	65	66	67	68	69	70	
After extension of NRA	14	16	15	15	14	12	11	9	-	15
After Medicare part B	6	4	5	4	4	4	3	-	-	5
After personal income tax	8	8	8	8	8	8	9	-	-	8
Total in months	28	28	28	27	26	24	23			26
Total in years	2.3	2.3	2.3	2.3	2.2	2.0	1.9			2

Source: Authors' calculations.

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The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future.

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