Volume Title: Economic Transfers in the United States

Volume Author/Editor: Marilyn Moon, ed.

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-53505-3

Volume URL: http://www.nber.org/books/moon84-1

Publication Date: 1984

Chapter Title: Raising the Normal Retirement Age under Social Security: A Life-Cycle Analysis

Chapter Author: Jennifer Warlick, Richard V. Burkhauser

Chapter URL: http://www.nber.org/chapters/c8813

Chapter pages in book: (p. 359 - 380)

10 Raising the Normal Retirement Age under Social Security: A Life-Cycle Analysis

Jennifer L. Warlick and Richard V. Burkhauser

10.1 Introduction

Concern for the current and future financial soundness of Social Security has led to numerous proposals which would decrease the system's total obligations. Perhaps the best known proposal would raise the "normal" retirement age, that is, the age at which full Social Security benefits are paid, to 68. Its proponents argue that the proposal is reasonable since Americans are living longer and projected labor market demand for older workers will rise in the future. Best of all, by itself the proposal would go a long way toward restoring the financial soundness of the system. The National Commission on Social Security (1981) estimates that the version of the proposal which it recommends (described in greater detail below) would eliminate two-thirds of the long-run deficit which is equivalent to 1.52 percent of taxable payroll over the period 1980–2054, projected by the 1980 Trustee's Report. This decrease is twice as large as that associated with any of the additional four recommendations designed to reduce Social Security outlays made by the Commission.

Some reductions in benefits is a necessary solution for those who believe the financial integrity of the Social Security system is in danger and that future increases in taxes are inappropriate. Consequently, rather than discuss the relative merits of tax increases versus benefit reductions,

Jennifer L. Warlick is a professor of economics at the University of Notre Dame; and Richard V. Burkhauser is a professor of economics at Vanderbilt University and affiliated with the Institute for Public Policy Studies at Vanderbilt.

Support for this research was provided in part by funds granted to the Institute for Research on Poverty by the U.S. Department of Health and Human Services under the provisions of the Economic Opportunity Act of 1964. Simonette Samuels provided valuable computer assistance and Karen Holden, John R. Wolfe, and Robert Moffitt provided helpful comments on a previous draft.

this paper takes a careful look at the effect that a change in normal retirement age to 68 would have on Social Security liabilities. In addition, we show how different types of beneficiaries would be affected by this form of benefit reduction.

Our major point is that the savings attributable to the proposal will not accrue from changes in retirement age as long as the adjustments made to benefits for early and delayed retirement are approximately actuarially fair. Rather, under a system of fair actuarial adjustments, savings will be because of a lifetime reduction in benefits which is independent of the age of retirement. Postponement of retirement will result in additional savings only if workers are induced to retire so late as to be subject to less than fair actuarial bonuses such as those existing under the current system. If workers cannot be induced to postpone retirement but follow present retirement patterns, total savings attributable to the proposal, as well as the reduction in total lifetime benefits experienced by most individuals, will be equivalent to those generated by an across-the-board reduction in benefits. These two methods of achieving the same savings are distinguished however by their impact on persons who currently elect early retirement at ages less than 65. These workers would not be permitted to receive benefits under the proposal to raise the initial retirement age to 65. To the degree that they value early payments at a rate above the plan's actuarial rate, they suffer additional losses. In the extreme case of workers who die before reaching age 65, they receive no benefits at all although other family members would be eligible for survivor's benefits. In contrast, an across-the-board decrease in benefits (e.g., a 20 percent reduction in all benefits) maintaining the current provisions for early retirement at age 62 is neutral with respect to mortality experience. Workers who elect early retirement would simply receive 20 percent less than under the current system. This difference has important distributional implications to the extent that mortality experience is correlated with race and income status.

A group that would be substantially affected by the proposal is low-wage workers who retire early under the current system. The Supplemental Security Income (SSI) program offsets to a large degree the reduction in OASI benefits for these low-wage workers thereby substantially increasing their life-cycle Social Security wealth relative to its level at age 65 (Burkhauser and Smeeding 1981). If these workers are no longer permitted to retire nor enroll in SSI prior to age 65, they will experience a substantial reduction in Social Security wealth. However, SSI will still play an important role in protecting these workers from additional losses and in almost totally mitigating the losses of low-income workers who retire at age 65 under the current rules. This is the case because, then as now, SSI will offset the actuarial reductions for workers retiring at age 65–68. To the extent that low-wage workers are eligible for

and choose to enroll in SSI, the program shifts the burden of the proposal to medium- and high-wage workers.

The remainder of this paper develops these points as follows. In section 10.2 we summarize our methodology, which employs a life-cycle analytic framework, and outline the calculation of the measures used in the comparison of the costs of current and proposed legislation. In section 10.3 we describe the National Commission proposals and simulate their effect on the costs and income distribution of Social Security. Qualifications, implications, and possible extensions of this paper are discussed in the concluding section.

10.2 Methodology

In this paper we evaluate the effects of a change in benefit rules using the lifetime of individual workers as the relevant period of analysis. Our measure of the savings attributable to the proposal is the change in worker's Social Security wealth (W_R), that is, the present value of future benefits at the time of retirement. We do not attempt to compute total savings across the retired population to the system, but rather concentrate on the effect of the proposal on representative workers.

This multiperiod measure is preferred to a single-period measure because the latter may be positive in the initial years of an individual's retirement (between age 62 and 65, for instance, when no benefits are paid out under the proposal) only to become negative for the balance and majority of his retirement. The outcome of a single-period analysis which aggregates across individuals at different stages of retirement in a particular year is dependent on the distribution of the retired population by time elapsing since retirement. In years when the proposal delays the retirement of large numbers of workers age 62–65 relative to those retired, the savings attributable to the proposal would appear quite large. In contrast, if the cohort of workers forced to postpone retirement is small relative to those retired, a single-period measure could show increased costs. Having shown how the proposal affects the Social Security wealth of workers with different wage histories, we separate this wealth into two parts—wealth based on total lifetime Social Security contribution by the worker and his employer and wealth based on welfare transfers—and see how this mix of annuity and redistribution in the system is affected. Finally we look at how this mix is affected when SSI is considered.

The specific measures used in our analysis are Social Security wealth (W) at retirement age (R), the present value of all contributions to the system at retirement age (C_R), and the welfare transfer component of Social Security wealth (T_R). Each of these measures (W_R, C_R, and T_R) is computed for three hypothetical workers who can retire at various ages: 62, 65, 68, and 71 years. The hypothetical workers represent three

workers earning in each year of their work life the minimum wage, the median wage for all covered male workers, and the maximum wage as defined by the maximum taxable earnings base. In our examples we assume all workers were age 62 in 1982, and all present values are evaluated from 1982.

Social Security wealth at the point of retirement (W_R) is equal to the sum of expected OASI benefits (b_R) over the worker's remaining life discounted by the probability of survival (p_k) in each period (k) and the interest rate (d):

$$W_R = \sum_{k=1}^{99-R} b_R p_k (1+d)^{-(k-1)}. \tag{1}$$

Expected OASI benefits (b_R) are calculated, as described in the appendix, from hypothetical wage histories beginning with 1951 and continuing through to the year of retirement. Possible years of retirement are 1982, 1985, 1988, and 1991. For years before 1978, annual wages for the minimum wage earner equal the statutory minimum wage times 2000 hours. Annual earnings for the median wage earner in years prior to 1978 are equal to the median wage of the cohort of male earners age 30–34 in 1951 in covered employment. Annual earnings for the high-wage worker in years prior to 1983 are equal to the maximum taxable earnings base in each year respectively. Annual wages must be projected for years after 1982 for the maximum-wage earner and for years after 1977 for the minimum- and median-wage earners. For the time interval ending in 1982, wages are projected forward by the rate of growth in wages for the period 1951 through the last year of reported wages. We assume real annual wage growth of 2 percent for years after 1982. The Primary Insurance Amounts (PIA), derived from Average Indexed Monthly Earnings (AIME) based on these wage histories, are adjusted by a series of actuarial factors representing a variety of early and delayed retirement options. A full discussion of these derivations is provided in the appendix. Eight scenarios are simulated for each type of worker (see table 10.1). The life expectancies employed are for males and are taken from Bureau of Vital Statistics figures for 1972. The discount rate (d) assumed three values alternately: 2, 5, and 10 percent. The tables shown in the next section assume a rate of 2 percent.

The value of the individual's total contributions at the point of retirement (C_R) is equal to the sum of annual OASI taxes paid both by the individual ($t_{ak} w_k$) and by the individual's employer ($t_{bk} w_k$) compounded by a rate of interest (r_j).[1] Thus,

$$C_R = \sum_{k=1}^{Y-1938} w_k (t_{ak} + t_{bk}) \prod_{j=k+1}^{Y-1938} (1+r_j), \tag{2}$$

where Y is equal to the year of retirement. The wages employed are those in the hypothetical wage histories. The tax rates are equal to the legally specified contribution rates for OASI in each year. The rate of interest (r_j) is equal to the interest rate on U.S. Government Bonds prevailing in each year. Interest rates were projected for years after 1977 following the same procedure used to project wages. This is only one of several possible rates that could have been used. The rate of return resulting from use of bond rates is lower than that resulting from other alternatives such as the annual yield plus the rate of increase in average stock prices.

The welfare transfer component of Social Security (T_R) is equal to the difference between the Social Security wealth (W_R) and lifetime contributions (C_R).

The ultimate savings of the proposal to the system will depend on the labor force response of older workers. We do not attempt to predict that response in our simulations. Rather we calculate the value of the variables defined above for a range of retirement ages which include the most important possibilities. Thus our simulations yield estimates of the potential savings associated with a wide range of responses. Not only do we identify the savings that will accrue if workers choose to retire at the same age under the proposal as under current law, but we also show how savings vary when workers opt for different retirement ages.

10.3 Results

Several proposals to raise the normal retirement age have been aired at public forums. Among these, we have chosen to focus on that recommended by the National Commission on Social Security, primarily because it is more fully specified than most and because it has been the subject of careful analysis. The specifics of the proposal are as follows:

1. The earliest age of eligibility for full retirement benefits should be raised from 65 to 68.
2. The age at which reduced benefits are available should be raised from 62 to 65.[2]
3. The age at which the earnings test no longer applies should be raised from 72 to 75.
4. The asymmetry between the reduction for early retirement and credit for delayed retirement should be eliminated either by raising the credit to its actuarial equivalent, or by raising the credit by a smaller factor and by increasing the reduction.

The Commission recommends a gradual phase-in of its proposal beginning in January 2001 with full implementation in 2012. Our simulations reports its effect assuming full implementation in 1982.

Table 10.1 presents eight different scenarios simulated for low-, median-, and high-wage workers. In the first three rows the age of first

Table 10.1 **Simulation Results for Eight Retirement Scenarios**

Scenario	(1) Age of Retirement (R)	(2) Full Benefits Available at Age:	(3) Actuarial Adjustment Factor	(4) Annual Benefit (b_R)	(5) W_R 2%	(6) W_R 5%	(7) W_R 10%	(8) Transfer Component[a] T_R
				(a) Low-Wage Worker				
1	62	65	.80	$2,801	$35,341	$28,200	$20,978	$21,038
2	65	65	1.00	3,550	33,941	25,188	16,483	19,638
3	68	65	1.09	3,934	27,366	18,782	10,672	13,063
4	62	68	.64	2,241	28,273	22,560	16,782	13,970
5	65	68	.81	2,876	27,360	20,273	13,228	13,057
6	68	68	1.00	3,610	24,990	17,123	9,693	10,687
7	71	68	1.09	4,016	19,036	11,900	5,629	4,733
8	71	68	1.28	4,715	22,738	14,316	6,896	8,435

				(b) Median-Wage Worker				
1	62	65	.80	$5,108	$64,450	$51,248	$38,258	$29,920
2	65	65	1.00	6,453	61,268	45,368	29,563	26,738
3	68	65	1.09	7,121	48,230	32,803	18,273	13,700
4	62	68	.64	4,086	51,561	41,142	30,606	17,031
5	65	68	.81	5,227	49,305	36,434	23,646	14,775
6	68	68	1.00	6,533	43,930	29,800	16,503	9,400
7	71	68	1.09	7,223	32,147	19,567	3,614	−2,383
8	71	68	1.28	8,481	38,806	23,912	10,893	4,276
				(c) High-Wage Worker				
1	62	65	.80	$5,338	$67,356	$53,746	$39,982	$25,692
2	65	65	1.00	7,005	66,646	49,383	32,222	24,982
3	68	65	1.09	8,026	54,740	37,329	20,922	13,076
4	62	68	.64	4,270	53,885	42,997	31,997	12,221
5	65	68	.81	5,674	53,661	39,687	25,800	11,997
6	68	68	1.00	7,364	49,892	33,944	18,927	8,228
7	71	68	1.09	8,451	38,025	23,295	10,461	−3,639
8	71	68	1.28	9,924	45,815	28,379	13,128	4,151

[a]The difference between total contributions into the system and the present value of future benefits discounted at 2 percent at age 62. Contributions equal $14,303, $14,530, and $14,664 for the low-, median-, and high-wage worker, respectively.

eligibility for full Social Security benefits is 65, and we observe a worker's Social Security benefits when he retires at ages 62, 65, and 68 alternately. In all cases we assume that the worker is a male without a dependent spouse.[3]

In the next three rows we assume normal retirement is at age 68 and again look at the Social Security benefits of a worker who retires at ages 62, 65, and 68 evaluated at age 62. In the final two rows we again assume age 68 is normal, but now the worker retires at age 71. In column 3 we show the actuarial reduction factor used to adjust the benefits for different ages of acceptance. For example, row 1 refers to a worker who retires at age 62 and receives yearly benefits which are only 80 percent of his current PIA.[4] If he retires at age 65 he receives the full PIA, and at age 68 he receives 1.09 of his PIA.

Column 4 shows the annual benefit in 1982 dollars associated with the wage histories of the three workers. Notice that annual benefits increase when a worker delays retirement. This occurs both because higher earning years are substituted for earlier years of lower earnings in calculating a worker's AIME and because the actuarial adjustment factors in column 3 are applied to the full PIA. The next three columns show Social Security wealth (W_R) evaluated at age 62 with discount rates of 2, 5, and 10 percent. The final column shows the welfare component of OASI (T_R) which is defined as the difference between C_R (not shown) and W_R evaluated at 2 percent (column 5).

Notice that under current law W_R is approximately equal at a 2 percent rate whether benefits are accepted at age 62 or age 65 for each of our workers (scenarios 1 and 2). Hence between age 62 and 65 the system provides only a slight penalty for those who postpone benefit acceptance. If benefits are postponed to age 68, W_R falls dramatically. The system clearly penalizes those who postpone acceptance past age 65. At discount rates of 5 and 10 percent, the system penalizes postponement past age 62, thereby effectively reducing net earnings at later ages and inducing retirement.[5]

10.3.1 Reductions in Social Security Wealth, Holding Retirement Age Constant

The effects of the change in normal retirement age from 65 to 68, holding the actual age of retirement constant at 62, can be seen by comparing rows 1 and 4 of table 10.1. In the case of the median-wage worker (panel b), the annual benefit falls from $5,108 to $4,086, a decline of 20 percent. This must be the case since the actuarial reduction factor falls from .80 to .64. Notice also that Social Security wealth evaluated at 2 percent falls from $64,450 to $51,561 or 20 percent. W_R also falls by 20 percent in columns 6 and 7. This result does not vary with the age of retirement, so long as the age of retirement is unaffected by adoption of

the proposal. For example, comparing rows 2 and 5 of column 5 shows that W_R for the median-wage worker who retires at age 65 under both the current system and the proposal falls from \$61,268 to \$49,305 or by 20 percent. The same result is obtained from rows 3 and 6 for the worker retiring at 68. It follows that if the proposal does not induce a worker to alter his retirement plans, the change in normal retirement age has the same effect as a constant reduction in benefits across all periods.

10.3.2 Changing Retirement Ages: The Actuarially Fair Case

The National Commission proposal sets age 65 as the age of first eligibility for reduced benefits, thus forcing workers who would currently retire at age 62 to postpone retirement for three years. As can be seen by comparing row 5 of column 5 with rows 1 and 4, this forced postponement has little additional impact on Social Security wealth. W_R now falls from \$64,450 to \$49,305 or by 23 percent, with incremental savings equaling only 3 percent. Although this result is at first surprising, it is simply explained by the fact that the adjustment factors for early retirement are actuarially fair for most workers. That is, W_R is approximately equal at all ages of retirement 62 through 65. Thus the major effect of the proposal results from the switch to a new set of actuarial adjustment factors (the drop from .80 to .64 at age 62). So long as the factors are actuarially fair, little savings are to be gained by postponing retirement. Postponement of retirement to age 68 (row 6) caused W_R to fall by an additional 9 percent or a total of 32 percent, from \$64,450 to \$43,930. Thus the total decline attributable to postponement of retirement from age 62 to 68 is 12 percent.[6] While this decline is certainly nontrivial and indicates that the proposed factors are not actuarially fair at a discount rate of 2 percent, it is less than what might be expected of a postponement of retirement of six years. Review of the relevant values of W_R for the low- and high-wage worker reveals smaller reductions from postponing retirement (9 and 6 percent, respectively).

10.3.3 Changing Retirement Ages: The Actuarially Unfair Case

When the system is actuarially fair, postponing benefit acceptance does not affect Social Security wealth. But when the system is designed to be less than actuarially fair, postponing benefit acceptance reduces W_R. Consider the case of the median-wage worker who currently retires at 65 (row 2). If he retires at age 65 under the proposal (row 5), his Social Security wealth falls by 20 percent from \$61,268 to \$49,305 (column 5). If he postpones benefit acceptance until age 68 (row 6), his W_R falls another 8 percent to \$43,930. Assuming that the proposal incorporates the same credits for delayed retirement as the current system (3 percent annually), postponement of benefit acceptance another three years to age 71 causes W_R to fall an additional 20 percent, bringing the total reduction to 48

percent. When the delayed retirement credit is raised to its actuarial equivalent, as proposed by the National Commission, the loss in wealth resulting from postponing benefits is substantially reduced. This is best seen by comparing rows 6, 7, and 8 of column 5. The actuarial adjustment level is a critical policy parameter whose effect is not well understood.

Table 10.2 summarizes the effect of moving normal retirement age to 68 for age combinations shown in table 10.1. It shows the percentage change in Social Security wealth that would result from adoption of the proposal as measured in the life-cycle framework. Panels (a), (b), and (c) refer to low-, median-, and high-wage workers, respectively. The results are generally quite similar across these different workers. The columns of table 10.2 refer to the age of retirement under current law while the rows refer to age of retirement under the proposal. The numbers in parentheses are the actuarial reduction factors (column 3 in table 10.1). Entries are defined as the difference between the Social Security wealth evaluated at 2 percent paid under the respective scenario's (column 5 in table 10.1) divided by wealth paid under the current law. For example, for the median-wage worker who retires at age 62 under current and proposed

Table 10.2 **Percentage Change in Social Security Wealth Resulting from Raising the Normal Retirement Age to 68**

	Current Law		
Proposal	62 (.80)	65 (1.00)	68 (1.09)
	(a) Low-Wage Earner		
62 (.64)	20%	*	*
65 (.81)	23	20	*
68 (1.00)	29	26	9
71 (1.09)	46	44	30
71 (1.28)	36	33	17
	(b) Median-Wage Earner		
62 (.64)	20%	*	*
65 (.81)	23	20	*
68 (1.00)	32	28	9
71 (1.09)	50	48	33
71 (1.28)	40	37	20
	(c) High-Wage Earner		
62 (.64)	20%	*	*
65 (.81)	20	20	*
68 (1.00)	26	25	9
71 (1.09)	44	43	31
71 (1.28)	32	31	16

*We assume that workers do not choose to retire earlier under the proposal than under current law.

law, the reduction in wealth is equal to 20 percent or ($64,450 − $51,561)/$64,450 (table 10.1, panel b, column 5, rows 1 and 4).

It is evident from table 10.2 that the greatest savings to the system accrue from a life-cycle perspective when workers retire at later ages than they do under current law and actuarial adjustments remain unfair. This will be partly accomplished because the National Commission proposal would prohibit retirement at age 62. However, if workers retired at 65 this would have little additional affect on life-cycle savings for the system. Total lifetime liabilities would fall only if such workers continue to work beyond age 65.

10.3.4 Changes in Net Social Security Wealth: The Welfare Transfer Component of OASI

Implementation of the proposal would reduce Social Security wealth net of contributions over the life cycle, which we have called the welfare component of OASI (T_R) and others would call true Social Security wealth (see Moffitt in this volume). If the Social Security system resembled private sector insurance, T_R would be zero. The fact that benefits are only loosely related to contributions and that the system has paid benefits to workers as though they contributed to the system throughout their work lives means that most workers have received a positive T_R.

Raising the normal retirement age to 68 will reduce T_R. This is seen in table 10.3. The table entries are derived from column 8 of table 10.1 and are equal to the difference in the values of T_R for the paired scenarios divided by T_R for the current retirement year. For example, the reduction experienced by our median-wage worker who retires at age 62 under both current law and the proposal is equal to ($29,920 − $17,031)/$29,920 or 43 percent. Entries in excess of 100 percent indicate that a positive welfare component under current law is replaced by a negative transfer component under the proposal; that is, under the proposal actual Social Security wealth is less than the value of lifetime contributions into the system.

A review of table 10.3 indicates that the welfare component of Social Security wealth is significantly reduced under the proposal. The reduction increases dramatically as retirement is postponed past 65. Our median-wage worker currently retiring at 62 would see T_R cut in half if he retired at 65 under the proposal. Postponement of retirement to 71 completely eliminates T_R (a reduction of 108 percent) and leaves him with Social Security wealth ($32,147) which equals only 93 percent of contributions ($34,530). Table 10.3 suggests that the proposal to raise the normal retirement age to 68 would have the effect of bringing Social Security benefits much closer to what might now be obtained in a private insurance system and for some workers might actually result in benefits below those obtainable in the private sector.

Table 10.3 **Percentage Reduction in the Portion of a Worker's Social Security Wealth Representing a Welfare Transfer**

	Current Law		
	62 (.80) (1)	65 (1.00) (2)	68 (1.09) (3)
	(a) Low-Wage Earner		
62 (.64)	34%	*	*
65 (.81)	38	34	*
68 (1.00)	49	46	18
71 (1.09)	78	76	64
71 (1.28)	60	57	35
	(b) Median-Wage Earner		
62 (.64)	43%	*	*
65 (.81)	51	45	*
68 (1.00)	69	65	31
71 (1.09)	108	109	117
71 (1.28)	86	84	69
	(c) High-Wage Earner		
62 (.64)	52%	*	*
65 (.81)	53	52	*
68 (1.00)	68	79	37
71 (1.09)	114	115	128
71 (1.28)	84	83	68

*See note at table 10.2.

10.3.5 How Changes in Interest Rates Affect Workers' Wealth

Up to this point we have assumed that all workers have a discount rate of 2 percent. While it is true that a 2 percent real rate may be the appropriate market value of future benefits, or in the case of the government, the appropriate opportunity cost of current liability, it is not clear that it is appropriate as a measure of all workers' discount rates.[7] In the case where low-wage workers have a higher discount rate than high-wage workers and are unable to borrow against their Social Security wealth, the picture changes dramatically. Now rather than being virtually indifferent between taking benefits between age 62 and 65, as was the case at 2 percent, low-wage workers who wait until age 65 to retire experience significant reductions in their Social Security wealth. Under current law, W_R at age 65 is 11 and 21 percent less than at age 62 for discount rates of 5 and 10 percent, respectively (table 10.1, columns 6 and 7, rows 1 and 2). At a 5 percent discount rate, a worker who currently retires at 62 but is forced to retire at 65 under the proposal faces a 28 percent reduction in W_R ([\$28,200 − \$20,273]/\$28,200) compared to a 23 percent reduction at a discount rate of 2 percent. This reduction of 28 percent is 40 percent

more than his high-wage counterpart's reduction (table 10.2, row 2, column 1). At 10 percent he loses 37 percent of W_R or 85 percent more than his high-wage counterparts. The losses for postponement past age 65 are even greater. A similar result would occur if low-wage earners had systematically higher mortality rates than their higher wage counterparts. In either of these cases, workers with higher discount rates would prefer across-the-board benefit cuts to increases in normal retirement age.

10.3.6 The Interaction of OASI and SSI

This effect is mitigated to some degree when the Supplemental Security Income program (SSI) is brought into the analysis. SSI is a federally funded guaranteed income program for the low-income aged (65 and over), blind, and disabled. Although eligibility for SSI is conditioned on both income and assets, persons 65 years and older may continue to work and still be eligible for SSI benefits. The first \$65 of earnings per month are totally disregarded and each additional dollar of earnings in excess of \$65 reduces the guarantee by fifty cents. Thus in 1982, an aged worker with no other income could earn up to \$7488 and still be eligible for SSI. After an initial disregard of \$20 per month, Social Security benefits reduce the SSI guarantee dollar for dollar. Whether working or retired, the hypothetical low-wage worker in our simulations is eligible for SSI benefits under each of the eight scenarios except number 2.[8] Although it is true that almost half of those aged persons eligible for SSI choose not to participate (Warlick 1982), the picture created by panel (a) of table 10.1 is inappropriate for the low-income worker who is eligible for and accepts SSI. Consequently, in table 10.4 we simulate the case of such a low-wage worker. SSI benefits have been added to OASI benefits in the calculation of the total annual benefit (column 4) and the combined value of SSI and OASI wealth (W_R') (columns 5, 6, 7).

The interaction of SSI and OASI has two important effects on our low-wage worker. First, the addition of SSI substantially increases combined OASI and SSI wealth. For instance in the case of early retirement (scenario 1) W_R evaluated at 2 percent increases from \$35,341 in table 10.1 to \$41,969 in table 10.4 when SSI is included.

Second, it substantially alters the relative values of W_R' across scenarios. This change in W_R' is confirmed by comparing table 10.2 with table 10.5. The entries in table 10.5 are constructed in the same manner as those in table 10.2, with each entry defined as the difference in W_R' for the relevant pairs of scenarios divided by W_R' for the current age of retirement. Under current law, a low-wage worker retiring at age 62 receives \$2801 in OASI benefits at ages 62–64 (table 10.1, scenario 1). At age 65 and over, his annual OASI benefit is supplemented by \$679 of SSI. Total Social Security wealth (W_R') evaluated at 2 percent is equal to \$41,969 rather than the \$35,341 shown in table 10.1. If this worker postpones

Table 10.4 **Simulation Results Including SSI for a Low-Wage Worker**

Scenario	(1) Age of Retirement (R)	(2) Full Benefits Available at Age:	(3) Actuarial Adjustment Factor	(4) Annual Benefit (b_R)	(5)	(6) W'_R	(7)	(8) Transfer Component (T_R)
					2%	5%	10%	
1	62	65	.80	$3,480*	$41,969	$33,149	$24,256	$27,666
2	65	65	1.00	3,550	33,941	25,187	16,483	19,638
3	68	65	1.09	3,934	29,217	20,479	12,147	14,914
4	62	68	.64	3,480**	40,366	31,590	22,763	26,063
5	65	68	.81	3,480	33,258	24,677	16,145	18,955
6	68	68	1.00	3,610	26,841	18,820	11,169	12,538
7	71	68	1.09	4,016	20,887	13,599	7,104	6,584
8	71	68	1.28	4,715	24,589	16,013	8,372	10,286

*Benefit at ages 62–64 consists only of OASI benefits and equals $2,801.

**Benefit at ages 62–64 equals $2,241.

Table 10.5 **Percentage Change in Total System Benefits to a Low-Wage Worker Resulting from Raising the Normal Retirement Age to 68**

	Current Law		
Proposal	62 (.80)	65 (1.00)	68 (1.09)
62 (.64)	4%	*	*
65 (.81)	21	2	*
68 (1.00)	36	21	8
71 (1.09)	50	38	29
71 (1.28)	41	28	16

*See note at table 10.2.

retirement to age 65 (scenario 2) he receives annual OASI benefits of $3550, an amount too large for him to be eligible for SSI. W_R' in this case is $33,941. Thus postponement of retirement in the presence of SSI reduces W_R' by 21 percent compared to the world without SSI in which wealth is approximately equal at 2 percent whether benefits are accepted at age 62 or age 65.

Thus the age of first eligibility critically affects low-wage workers. If these workers are no longer permitted to retire prior to age 65, they will experience a 21 percent reduction in Social Security wealth (W_R') regardless of SSI (see table 10.5, row 2, column 1). In contrast, if they are permitted to retire at age 62, SSI will continue to offset the actuarial reduction and they will experience only a small decline in wealth (4 percent). Even if low-wage workers are not permitted to retire prior to age 65, SSI will play an important part in protecting those workers from additional losses and in almost totally mitigating the losses of low-wage workers who retire at age 65 under the current rules. Notice in table 10.5 that a worker who retires at age 65 under the proposal is only 2 percent worse-off than he is under current law. This is the case because SSI offsets the actuarial adjustment between ages 65 and 68 in the same manner that it does for workers who take benefits early under the current law. Comparing scenarios 2 and 5 of table 10.4 shows that W_R' evaluated at 2 percent falls by a mere 2 percent from $33,941 to $33,258. Thus, although a proposal disallowing acceptance at age 62 would significantly disadvantage low-wage workers who would currently opt for early retirement, low-wage workers who would retire at 65 under both systems could protect themselves from the substantial reductions experienced by their high-wage counterparts by enrolling in SSI.

Because SSI benefits are financed by general revenues and OASI by the payroll tax, the increased use of SSI by those receiving low OASI benefits will shift the revenue burden of supporting such workers toward general revenues. Therefore the effect on OASI savings in table 10.2 greatly overestimates the savings on total revenues. In addition, to the

degree that low-wage workers currently take OASI benefits at age 62, table 10.5 shows that virtually no savings will occur unless the option to receive benefits at age 62 is removed from OASI.

10.4 Conclusion, Qualifications, and Policy Implications

In this paper we have estimated a life-cycle measure of the savings that would accrue from implementation of the proposal of the National Commission on Social Security to raise the normal retirement age to 68. Our estimates reveal that the greatest savings accrue when workers elect to retire at later ages under the proposal than under current law and when delayed retirement credits are less than actuarially fair. It remains to be seen how workers will adjust their retirement decisions in response to a higher retirement age. Clearly an unexpected change in Social Security wealth will lower the wealth of individuals and lead them to work more than they anticipated over the life cycle. The closer they are to their planned retirement age when this occurs, the more likely they are to postpone retirement rather than work more hours per year. But this increase in years of work would be offset to some degree by actuarially unfair Social Security adjustments. For instance, workers with discount rates greater than 2 percent are likely to accept Social Security benefits before age 68. The same is true for low-wage workers eligible for SSI.

Postponing normal retirement is in many ways the equivalent of an across-the-board reduction in benefits, and both types of cuts would substantially reduce the welfare component of Social Security causing the system to yield benefits much closer to those provided by private insurance. But if low-wage workers have higher discount rates or lower life expectancies than their higher-wage counterparts, postponing the age of Social Security acceptance as a means of reducing benefits puts a disproportionate burden on low-wage workers and is clearly worse than across-the-board cuts in benefits from their perspective. This burden is mitigated by SSI for those low-wage workers who choose to participate in this program, especially if OASI acceptance at age 62 is still allowed. But obstacles such as the lack of information, the stigma of welfare receipt, and the complexity of the enrollment process currently discourage almost one-half of all eligible aged persons from participating in SSI.

These conclusions require qualifications on several grounds. First, they are based on simulations for hypothetical workers with low-, median-, and high-wage histories which may not reflect the actual experience of current or future beneficiaries. Interpretation of the results for the median-wage earner requires special caution because the median earnings used in the calculations are a mixture of the earnings for part-time and full-time workers, rather than the earnings of a worker in the approxi-

mate middle of the earnings distribution (Schulz 1981). Second, the simulation results are sensitive to the assumptions regarding the interest rate at which contributions are compounded, the method used to project earnings records into the future, and life expectancies used in the calculation of Social Security wealth. The percentage changes in Social Security benefits (table 10.2) show only slight sensitivity to the choice of discount rate, however. Third, the simulations refer to the cohort of workers attaining age 62 in 1982. It is likely that future cohorts will do slightly worse and thus more workers will have negative T_R.

In light of these qualifications an obvious extension of this paper is to repeat the simulations with the earnings histories of actual workers from the entire distribution of earnings. So doing would allow examination of the redistributive effects of the proposal across workers occupying different positions in the income distribution and of different marital and entitlement status.

Three policy implications flow from these conclusions. First, our analysis indicates that the largest savings accrue only when workers postpone retirement past age 68. While the fall in Social Security wealth will increase work effort, it is still the case that, given the option, workers will tend to preserve their diminished Social Security wealth by taking it at the earliest age possible. Hence few workers are likely to wait until age 68 or beyond to retire. Workers would be more likely to retire past 68 if the National Commission's proposal to increase actuarial adjustments past this age were achieved, but to do this would reduce system savings.

Second, up to this point in the history of the system virtually all workers have received a positive T_R. As Moffitt shows (this volume) and as we showed in Burkhauser and Warlick (1981), T_R is falling. Raising the normal retirement age to 68 will substantially reduce T_R for all workers within OASI. For low-income workers, however, the welfare transfer aspect of OASI will to a larger degree be picked up by SSI, if they apply for benefits and if OASI benefits are still available at age 62. For those who favor a disentangling of the annuity and redistributive goals of OASI this is a plus, but for others it is another example of a two-track system in which the poor are singled out for stigma-inducing treatment. For those concerned with overall budget reductions, we show that OASI savings will be offset to some degree by increases in SSI.

Finally, the argument has been made that portions of Social Security benefits in excess of payroll tax contributions should be subject to income taxation (Levy 1980). Because high-wage as well as low-wage earners receive substantial transfers under the current system, taxing this component of Social Security benefits would redistribute benefits toward those with the greatest need. The general decline of the transfer component under the most likely of the proposal scenarios and its total elimination for some median- and high-wage earners mitigates this argument.

Appendix

Under current law, monthly retirement benefits are derived from a figure referred to as the Primary Insurance Amount (PIA).[9] The PIA is based on an individual's earnings averaged over the work life (AIME). Earnings for years 1951 up to and including the year the individual becomes eligible for benefits (currently age 60) are indexed to compensate older workers for general increases in real wages and in the taxable wage base under Social Security which would otherwise advantage younger (disabled) workers. The index in each year is equal to the ratio of median earnings of the covered population in the year the worker reaches age 60 to median wages in that year. Earnings for the year in which the worker becomes 60 and all years thereafter up to the year of retirement are not indexed. Not all years are included in the calculation of AIME. The number of years averaged (the "computation years") is equal to the number of years which elapsed between 1951 or the individual's twenty-first birthday, whichever is later, and the year in which the individual reaches age 62, minus five. Thus the number of computation years for the individuals reaching age 62 in 1982 in our examples is 26 (1982 − 1951 = 31 − 5 = 26); for an individual reaching 62 in 1985, 28 years are used, and so on up to a maximum of 35 for cohorts reaching 62 in 1991 and later. Years with the highest earnings are selected for the computation years. Any years up to the year of retirement may be included. AIME is equal to the total earnings (some of which will be indexed) in the "computation years" divided by the number of months in those years. AIME may be recomputed in years following retirement to take account of high earnings in those years if doing so increases AIME. AIME cannot be lowered by low-earning years subsequent to retirement.

For individuals who become eligible for retirement in 1979 or later, the PIA is determined by application of a mathematical formula to AIME. The formula is progressive, that is, the percentage of AIME replaced by benefits declines as average earnings rise. For individuals reaching age 62 in 1979 the formula is 90 percent of the first $180 of AIME, plus 32 percent of AIME over $180 and through $1085, plus 15 percent of AIME in excess of $1085. The dollar amounts in this formula, denoted the "bend points," are automatically adjusted on an annual basis for increases in average wages.

The normal age of retirement, that is, that age at which an individual may draw a benefit equal to 100 percent of PIA, is currently 65.[10] Workers may elect to receive benefits as early as age 62, but benefits are reduced by 5/9 of 1 percent for each month of entitlement before age 65 (6.67 percent annually), reflecting the fact that they will be paid over a longer period of time. The reduction approaches actuarial fairness for most workers; that is, the present value of future benefits paid over the

remaining lifetime of the beneficiary is approximately the same at any age of first receipt age 62 through 65.

An individual who wishes to work past the normal age of retirement can choose to delay receipt of benefits. This is desirable because benefits are reduced for earnings in excess of a specified limit (the "exempt amount") for workers less than age 72.[11] In the event that an individual delays retirement, benefits are increased by 1/12 of 1 percent of PIA for each month (3 percent annually) that benefits are not drawn between ages 65 and 72. This credit is less than actuarially fair: Individuals delaying retirement cannot hope to recoup foregone benefits over their remaining lifetimes.

Notes

1. This assumes that the full incidence of the Social Security payroll tax is shifted to the employer following Brittain (1971). In contrast, Hamermesh (1979) and Vroman (1971) suggest that the tax is only partially shifted onto labor.

2. Under the proposal, earnings would continue to be indexed up to and including the second year of first eligibility, but the age defined by this rule would rise from 60 to 63. The period for computing the AIME would be measured at age 62 so that the maximum number of years to be averaged would remain 35 (National Commission on Social Security 1981).

3. As seen in Moffitt (this volume), the number of couples earning Social Security benefits in their own right makes this the dominant case. The increasing work effort of women will continue the trend away from dependent spouse benefits. Another action that will further this trend is the move toward earnings sharing which would end spouse benefits and replace them with equally shared earnings records of a married couple.

4. Reduction factors of .64, .81, and 1.28 are used in rows 4, 5, and 8 following the National Commission, which asserts that when using a 2 percent real discount rate these are the actuarially fair rates. The adjustment factor of 1.09 in rows 3 and 7 is not actuarially fair but is used currently by Social Security to adjust PIA for retirement past age 65.

5. There is a growing literature on the effects of Social Security on labor supply. See Danziger, Haveman, and Plotnick (1981) for an excellent review of this literature.

6. In an actuarially fair system, W_R would be equal at all ages of retirement. Although we have employed the schedule of adjustment factors designated as actuarially fair by the National Commission, the results of our simulations show that they are only approximately fair for our hypothetical workers at discount rates of 2, 5, and 10 percent. This result underscores the importance of the worker's discount rate in his evaluation of the relative value of W_R at different ages of retirement.

7. As Blinder, Gordon, and Wise (1980 and 1981) and Burkhauser and Turner (1981) show, evaluating Social Security wealth and its effect on work depends critically on the interest rate employed.

8. In the simulations, the size of the SSI benefit varies with annual earnings until the time of retirement, at which point it is fixed in real terms. SSI benefit levels for future years are projected from 1982 at a rate equal to the historic rate of growth of low-income wages less 1 percent. We assume that wages are the sole source of income until the time of retirement. We assume Social Security benefits are the sole source of non-SSI income during retirement.

9. The description of current law is taken from U.S. Department of Health, Education, and Welfare (1978).

10. Benefits drawn at age 65 may be less than 100 percent of PIA if the individual has earnings in excess of the exempt amount under the earnings test. If the individual is married to someone who is not entitled to benefits in his or her own right, total benefits to the couple will equal 150 percent of PIA.

11. Beneficiaries between ages 65 and 72 can earn $5,500 in 1982 without affecting the amount of their benefits. The amount of exempt earnings for persons under 65 is $3960. Benefits are reduced by $0.50 for each $1.00 of earnings above the exempt amount.

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