

# *Does a Trend toward Early Retirement Create Problems for the Economy?*

*Gary Burtless and  
Alicia H. Munnell*

*Senior Fellow, The Brookings Institution, and Senior Vice President and Director of Research, Federal Reserve Bank of Boston. This article will also appear in the proceedings of the second annual conference of the National Academy of Social Insurance, Retirement and Public Policy, 1990, Kendall/Hunt Publishing Co., Ames, Iowa.*

**M**any politicians, gerontologists, and editorial writers have come to deplore the trend toward early retirement. This trend, which began after World War II and accelerated in the 1960s and 1970s, has led to a dramatic decline in work effort and earnings among the elderly. Opponents of earlier retirement believe that keeping people in the work force longer will raise the nation's output, reduce the costs of Social Security, and improve the well-being of older Americans. In contrast, the groups most directly affected by retirement patterns—employers, labor unions, and especially older workers themselves—show little interest in reversing recent retirement trends. Personnel practices in most large firms tend to encourage rather than discourage early exit from the work force. Labor unions generally favor these practices. And older workers often seem eager to seize the opportunity to retire early when it is offered to them.

The concern about the trend toward early retirement has taken on increased urgency in the face of the projected slow growth of the labor force in the 1990s and a sharp increase in the size of the elderly population when the baby boom generation retires after the turn of the century.<sup>1</sup> Advocates of delayed retirement worry about the costs of supporting a large retired population after 2010 and view the 1990s as an opportunity to head off unbearable financial burdens. The next decade may be a period when the attitudes of employers and the elderly change and their interests coincide. The slowdown in the influx of new workers may make employers more eager to eliminate early retirement incentives and develop flexible job options to hold on to the skilled older worker. Improved job prospects for the elderly may make them more eager to work.

This article takes a closer look at the economic arguments behind the widespread call for the continued employment of older workers, particularly in view of the substantial aging of the population. It begins with a discussion of the implications of early retirement in an

economy without social insurance, and then looks at an economy with a social insurance system. The second section delineates the extent to which in the United States the costs of the Social Security program are insulated from reductions in the retirement age. The third section explores the effects of early retirement on economic performance outside Social Security and then highlights possible ways in which real world outcomes may deviate from the theoretical optimum.

The conclusion that emerges from the analysis is straightforward. Once social insurance costs are insulated from individual retirement decisions and in-

---

*The next decade may be a period when the attitudes of employers and the elderly change and their interests coincide.*

---

dividuals and their employers make their own provisions for support before the official Social Security retirement age, no strong economic reason exists to resist the trend toward early retirement, if that trend reflects the preference of the retiring individuals for more leisure and fewer goods. As noted, this conclusion rests solely on an analysis of the impact of the early retirement trend on national output and retirement programs, and does not incorporate consideration of any potential beneficial effects that continued employment might have on the health or psychological well-being of older workers themselves.

### *The Concern about the Increasing Costs of Early Retirement*

The argument for keeping people in the work force is simple and appealing. The United States, like many other industrialized countries, is experiencing an aging of its population, as a result of a sharp decline in the fertility rate and improvement in life expectancy. Population aging increases the number of elderly, mostly retired, people who rely on Social Security as their primary source of income. Social Security payments, which are financed mainly by current payroll tax payments, involve the transfer of national product from the working population to the

nonworking population. With an aging population, the cost of supporting older people will increase sharply as a relatively smaller working population must support a relatively larger retired elderly population. The burden of support is exacerbated by the increasing trend towards early retirement, since the aged must be supported for a longer period and out of a smaller pie due to the decline in the number of productive workers.

Much of the above is true. The population is aging and the proportion of those sixty-five and over is expected to increase substantially. The intermediate projections prepared by the Social Security Administration show the elderly population (sixty-five and over) as a percentage of the working-age population (twenty to sixty-five) doubling from its present level of 20 percent to 40 percent in 2035, where projections show it will remain. The reason for this increase is a drop in the total fertility rate from a postwar peak of 3.7 children per woman in the late 1950s to an ultimate rate of 1.9 children per woman. At the same time that fewer babies are being born, older people are living for a longer time. Life expectancies at age sixty-five, which were thirteen years for men and sixteen years for women in 1960, are now fifteen and nineteen years, respectively, and are projected to be seventeen and twenty-one years in 2035.

### *An Economy without Social Insurance*

In thinking about the burdens placed on active workers by a growing retired population, it is useful to consider a simple baseline case of an economy without social insurance. The following analysis, which is based on a highly stylized version of reality, is designed to highlight the difference between a world without and with a social insurance system.

Suppose the population consists of workers and retirees of different ages who each expect to live exactly  $T$  years. People begin work at birth, earn  $E$  dollars per year while at work, and retire at age  $R$ . This leaves workers  $T - R$  years in which to enjoy leisure, during which time they earn no wages. In the absence of a social insurance system and without interest on savings, an individual's lifetime income ( $Y$ ) is

$$(1) \quad Y = RE,$$

or the product of years at work and wage earnings per year.

Workers wishing to avoid starvation during their retirement will save during their working years.<sup>2</sup> Under a common assumption adopted here, they will save and dissave exactly enough each year so their annual consumption,  $C$ , is identical in each year of their life span, including periods at work and in retirement:

$$(2) \quad C = \frac{RE}{T}$$

This consumption pattern implies that annual savings while at work will be (3)

$$(3) \quad S = E - \frac{RE}{T} = \frac{T - R}{T} E$$

Individuals prefer more consumption to less, holding the retirement age constant, and prefer additional years in retirement to fewer years, holding annual consumption levels constant. This assumption yields a utility function defined in terms of  $C$  and  $R$ :

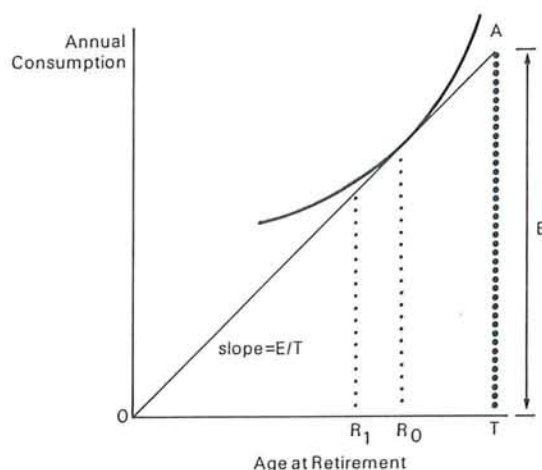
$$(4) \quad U = U(C, R),$$

where  $dU/dC > 0$  and  $dU/dR < 0$ . The problem for the worker is to select consumption and a retirement age in such a way as to maximize utility, subject to the budget constraint and the assumption of smoothed consumption. This choice is graphically represented in Figure 1, which shows the worker's annual consumption level on the vertical axis and the retirement age on the horizontal axis. The straight line  $OA$  represents the budget constraint. It has a slope equal to  $E/T$ , which is the amount of extra yearly consumption the worker can enjoy by postponing retirement one additional year. In the figure, the highest level of satisfaction is attained when the chosen retirement age is  $R_0$ .

This model can illustrate how workers and the economy are affected when the population ages. First, assume that people live exactly fifty years and typically retire when they reach age forty (that is,  $T = 50$  and  $R = 40$ ). If they earn \$10,000 a year while at work, they must set aside \$2,000 a year while working in order to maintain a constant consumption level of \$8,000 throughout their lives. In assessing the impact of population aging on these outcomes, it is important to remember that the population could grow older for one of two reasons: the rate of population increase might slow, thereby reducing the

Figure 1

*Trade-off between Annual Consumption and Age at Retirement*



fraction of people who are young, or life expectancy might rise, increasing the proportion of people who are old.

Suppose initially the number of people born doubles every decade. For every person aged forty to forty-nine, two are aged thirty to thirty-nine, four aged twenty to twenty-nine, eight aged ten to nineteen, and sixteen under age ten. A little arithmetic shows that when the population rises this fast, the ratio of retired people (forty and older) to workers (people under forty) is 1 to 30. Only about 3 percent of national consumption is received by the elderly; nearly 97 percent is received by workers. If population growth slows down, a much higher fraction of consumption will go to the retired elderly. For example, if the population is constant in size, so the number of people born in each decade is the same, the retiree-worker ratio will be 1 to 4. Fully one-fifth of national consumption will be enjoyed by the retired population. While the rise in the fraction of consumption going to the elderly might seem alarming, it has no unpleasant consequences for the working population. Workers continue to earn \$10,000 a year, saving \$2,000 for their old age and consuming \$8,000, just as they did when the population was rising rapidly. The aging of the population places no extra burden on individual workers. To be sure, the fraction of national consumption going to the retired

elderly could be reduced if the average age at retirement rose. Were the retirement age to rise from forty to forty-five, the share of consumption received by retirees would drop from 20 percent to just 10 percent, the share received by current workers would increase, and national income would rise 12.5 percent. But workers would not necessarily be any happier, because they would be forced under this arrangement to accept more consumption and less retirement leisure than they would have chosen if left to their own devices.

The situation is slightly different when the population is aging as a result of increased life expectancy. Suppose life spans rise by one-fifth, jumping from fifty to sixty years. To maintain similar levels of annual consumption, workers must delay their retirements. If they wish to continue consuming \$8,000 each year, equation (2) shows that their retirement age must also rise by one-fifth, from forty to forty-eight. Of course, some workers might prefer instead to maintain their retirement age at forty and cut their annual consumption to \$6,667. Critics of early retirement may deplore this decision, but it has no adverse consequences on other workers. The burden of longer retirement, in the form of reduced annual consumption, is borne entirely by the individual workers who choose to spend more of their lives outside the work force.

The same conclusion follows if, even in the absence of greater longevity, some workers should plan to retire before reaching the average retirement

---

*In an economy without social insurance, early retirement would have no adverse consequences on other workers.*

---

age, retiring at age  $R_1$  rather than  $R_0$  in Figure 1. This trend toward early retirement affects the consumption levels and saving behavior of workers who exit the labor market early, but it does not impose any cost on workers who continue to retire at the normal job-leaving age. If early retirees derive satisfaction from additional leisure that offsets their loss of utility from forgone consumption, and if they provide for their own retirement through reduced consumption while at work, politicians, editorial writers, and oth-

ers favoring late retirement have no legitimate reason to question their decision to retire early.

In the absence of social insurance, it is hard to understand, within the confines of this simple model, why workers should be concerned about the retirement behavior of other workers. The retirement decisions of others, who have provided for their own retirement, in no way impinge upon the ability of an individual worker to earn wages and to spend those earnings in an optimal way over the life cycle.<sup>3</sup> The introduction of a social insurance system, however, can theoretically link one worker's lifetime consumption directly or indirectly to the retirement behavior of others.

#### *An Economy with Social Insurance*

In its simplest form, a social insurance system consists of a tax formula, a payment formula (including retirement ages and other eligibility factors), and an overall budget constraint that ties annual or future outlays in the system to past, current, and future revenue. In the U.S. system, revenues are obtained largely through a proportional tax,  $t$ , on earnings up to a maximum taxable amount.<sup>4</sup> The current tax for Old-Age, Survivors, and Disability Insurance is 12.4 percent on earnings up to \$53,400 (1991 estimate) a year; the rate for Hospital Insurance is 2.9 percent on earnings up to the same limit.

Retirement pensions are payable to eligible workers who have attained age sixty-two and who have substantially withdrawn from active labor force participation. Full benefits are payable to all participants at age seventy regardless of their labor force activity. Old-age benefits are calculated under a complicated formula that depends on a worker's year of birth, current and prior taxable earnings, age at retirement, and number of eligible dependents. For simplicity, assume that the annual benefit payment,  $P$ , is determined solely by the worker's average earnings ( $E$ ) and retirement age ( $R$ ):

$$(5) \quad P = P(E, R),$$

with  $dP/dE > 0$  and  $dP/dR > 0$ .

Annual spending in the United States Social Security system cannot exceed annual revenues plus the amount of reserves held in the trust fund. If spending threatens to exceed that threshold, Congress would be forced to appropriate funds from the Treasury or, more likely, raise the payroll tax rate ( $t$ ) or trim the average payment ( $P$ ). Even though the

system is now scheduled to accumulate substantial reserves in order to offset the rising costs associated with the retirement of the baby boom generation, the pay-as-you-go model is a useful approach for calculating the current costs of the program.

If the system were financed on a strict pay-as-you-go (or current cost) basis, the tax rate would be set each year so that total revenues were just equal to total benefit payments in that year. Revenues from the payroll tax depend on the tax rate ( $t$ ), the number of workers in covered employment in that year ( $W$ ), and the average annual taxable earnings per worker ( $E$ ). Outlays are the product of the number of beneficiaries ( $B$ ) and the average payment per beneficiary ( $P$ ). If revenues are exactly equal to outlays,

$$(6) \quad (t)(W)(E) = (B)(P),$$

and the pay-as-you-go cost of financing the program is

$$(7) \quad t = P/E \times B/W.$$

Thus, the annual cost is the ratio of the average benefit to average earnings times the ratio of beneficiaries to workers. Assuming that the benefit to earnings ratio holds steady at 0.35, the current cost for beneficiary-to-worker ratios of 0.2, 0.3, 0.4, and 0.5 would be 7, 10.5, 14, and 17.5 percent of taxable payrolls, respectively.

For any given set of demographic factors, the ultimate costs will also depend crucially on the labor force participation of the population. A trend towards early retirement would both reduce the number of workers and increase the number of beneficiaries. For example, defining the working population as people aged twenty to sixty-four and the retired population as people aged sixty-five and over, the ratio of beneficiaries to workers in 2035 would be 0.40. If benefits were made available at age sixty and all workers retired at that age, the ratio increases to 0.55; if all workers received benefits upon retiring at age fifty-five, the ratio of beneficiaries to workers in this simple example becomes 0.75. The current costs of the program under these assumptions would be 14 percent, 19 percent, and 26 percent of taxable payrolls, respectively.

To understand the nature of the potential burden on individual workers created by the introduction of a social security system, it is helpful to define "burden" with some care. One definition of the net social security burden (SSB) is the difference between what

individuals pay in tax contributions and the amount they receive in the form of retirement benefits.<sup>5</sup> This is somewhat different from the definition of burden typically used by journalists, which refers only to the tax rate paid by current workers and disregards the benefits workers will eventually receive when they retire. Assuming interest to be zero, the net social security burden for an individual is shown by the following equation:

$$(8) \quad \begin{aligned} \text{SSB} &= tRE - (T - 40)P, \text{ if } R < 40; \text{ and} \\ &= tRE - (T - R)P, \text{ if } R \geq 40, \end{aligned}$$

where forty is the earliest age at which benefits can be claimed.<sup>6</sup> Lifetime taxes are equal to the tax rate ( $t$ ) times lifetime earnings ( $RE$ ), and lifetime benefits are annual benefit payments ( $P$ ) times the number of years collecting benefits ( $T - 40$  or  $T - R$ , whichever is smaller). If benefits exceed taxes, the system yields net benefits to the worker and the net burden is negative; if taxes exceed benefits, the net burden is positive and the sum of the worker's benefits is less than his lifetime contributions.

To see whether workers are likely to be burdened by the system, the expression for the tax rate ( $t$ ) shown in equation (7), can be substituted into equation (8). When the average retirement age is at least forty (the early retirement age), the net social security burden (SSB) is:

$$(9) \quad \begin{aligned} \text{SSB} &= R \frac{P}{E} \frac{B}{W} E - (T - R)P \\ &= R \frac{PB}{W} - (T - R)P. \end{aligned}$$

Holding the payment level and average retirement age constant, the effects of population aging on the net social security burden are immediately evident. If the population is growing very fast, the ratio of beneficiaries to active workers ( $B/W$ ) will be low. Consequently, lifetime taxes will be low and the net social security burden will be negative, meaning that workers receive more in benefits than they have contributed. On the other hand, with slow population growth (and the same retirement age), a smaller proportion of the population will be at work, resulting in higher lifetime tax contributions. Under those circumstances, workers are more likely to be burdened by the system.

The fact that the net burden of social security varies with the ratio of beneficiaries to workers means that, once social insurance is introduced, workers' lifetime incomes and consumption are affected by the retirement decisions of other workers.<sup>7</sup> If workers decide to retire at age forty rather than forty-eight, they will have to pay higher social insurance taxes to finance a longer period of benefit payments. Even those workers who wish to work until age forty-eight

---

*Once social insurance costs are insulated and individuals make their own provisions for support, no strong economic reason exists to resist the trend toward early retirement.*

---

will face the higher tax rate, possibly reducing their lifetime consumption below the amount they could obtain without social insurance.<sup>8</sup> For this reason, workers who wish to retire near the very end of life might legitimately object to a system providing generous retirement benefits for early retirement.

A social security program can, however, incorporate some mechanisms that partially protect it against the adverse effects of early retirement. One protection is an early retirement age. For example, workers cannot claim benefits until reaching a minimum age—age forty in equation (9)—thus limiting the maximum lifetime benefit to  $(T - 40)P$ . Workers retiring before that age do not obtain any extra benefits, though they pay lower lifetime taxes than workers who retire later.

An additional protection is tying the annual payment ( $P$ ) to the worker's lifetime earnings history and age at retirement. For a worker who retires past the early retirement age, this means that the net social security burden is

$$(10) \quad SSB = tRE - (T - R)P(E,R), \text{ if } R \geq 40,$$

and the *change* in social security burden as retirement is delayed one year is

$$(11) \quad \frac{dSSB}{dR} = tE + P(E,R) - (T - R) \frac{dP(E,R)}{dR}.$$

Each of the terms in (11) has a straightforward interpretation. When retirement is delayed a year, the worker pays one more year's taxes,  $tE$ , and loses one year's benefits,  $P(E,R)$ . As an offset, however, the worker gains additional benefits over the remainder of his lifetime,  $(T - R) \frac{dP}{dR}$ . For a worker retiring *before* the early retirement age, the change in social security burden from delaying retirement is

$$(11') \quad \frac{dSSB}{dR} = tE - (T - 40) \frac{dP(E,R)}{dR}.$$

The main difference between (11) and (11') is that a worker retiring before the early retirement age does not give up a year's social security benefits when retirement is delayed a year. In either case, the change in the net social security burden can be positive or negative, depending on the nature of the benefit formula,  $P(E,R)$ .

Equations (11) and (11') suggest that early retirement provisions and the nature of the pension formula are mechanisms for controlling the extent to which the choice of retirement age of one worker affects the welfare of other workers. The degree to which this occurs under the U.S. Social Security system is an empirical question, and one addressed in the next section. One important conclusion, however, can be stated immediately: tax rates in a pay-as-you-go social security system may be raised or lowered by a trend toward early retirement, depending on the exact benefit formula linking pensions to past earnings and work experience.

### *The Extent to Which the Current U.S. Social Security System Is Insulated from Changes in Retirement Patterns*

While the generalization is correct that the costs of a social insurance system depend on the working habits of the covered population, the United States Social Security program has provisions that influence the extent to which long-run benefit costs are affected by the retirement decisions of individual workers. The benefit provisions consist of two elements: a formula for the basic yearly pension (also known as the "primary insurance amount" or PIA) and an actuarial adjustment that reduces or raises the basic pension depending on whether benefits are claimed before or after the normal retirement age. Together these two elements determine the relationship between age at retirement and Social Security costs.

### Actuarial Adjustments

Regardless of the age when an individual withdraws from the labor force, no retirement benefits are payable under the Social Security program before age sixty-two and full benefits are not payable until age sixty-five. Because benefits are actuarially reduced for retirement between ages sixty-two and sixty-five (5/9 of 1 percent for each month of retirement before age sixty-five, which amounts to 20 percent at age sixty-two), lifetime benefit costs are not affected by the worker's choice of retirement within this range. Table 1 shows that 75 percent of men and 81 percent of women opt for benefits before age sixty-five. Indeed, the majority of workers of both sexes opt for benefits as soon as they become available. Since annual payments are actuarially reduced, the selection of this option has only a slight impact on lifetime benefits or costs.<sup>9</sup>

Table 1  
*Initial Benefit Awards and Average Benefit Amounts, by Age at Award and Sex, 1988*

Age at Award	Men		Women	
	Percent of All Awards	Average Benefit	Percent of All Awards	Average Benefit
62	55	\$546	65	\$339
63	9	618	8	409
64	11	667	8	447
65 and over	25	694	19	496

Source: U.S. Department of Health and Human Services, Social Security Administration, *Social Security Bulletin, Annual Statistical Supplement, 1989*, Tables 6.B1 and 6.B2, pp. 252-253.

Workers who claim benefits after the normal retirement age are penalized under the current provisions, however. The delayed retirement credit for waiting to claim benefits past age sixty-five is now just 3 percent a year, which is far too low to compensate a worker fairly for the loss of one year's benefits. The formula gives smaller lifetime payments to workers who retire after sixty-five than it does to those retiring at age sixty-five or earlier.

The delayed retirement credit, which amounted to only 1 percent per year for those attaining age sixty-five before 1982, is scheduled to reach 8 percent in 2008. Since this eventual amount is very close to a fair actuarial adjustment (9 or 10 percent), the system will gain little, if anything, from individuals postpon-

ing retirement beyond the normal retirement age (Myers 1985, p. 95).

The preceding discussion has focused on the sensitivity of Social Security costs to deviations in retirement patterns from the normal retirement age, now sixty-five. This still leaves the question of changes in the normal retirement age itself, and whether the trend toward early retirement precludes extending the age at which persons are eligible for full benefits. The answer, at least for the United States, is that actual and legislated retirement ages are perfectly capable of moving in opposite directions. Despite a sharp decline in the labor force participation of men fifty-five and over during the 1970s (Table 2), Congress decided in 1983 to advance the normal retirement age as a method of eliminating the long-run deficit in Social Security. As a result of the 1983 Social Security Amendments, the age at which full benefits are payable will be extended gradually to sixty-six by 2009, then to sixty-seven by 2027. People can still elect early retirement at sixty-two, but benefits paid to early retirees will be reduced 25 percent in 2009 and 30 percent by 2027, as compared to the current reduction of 20 percent. This will ensure that system costs remain unaffected by individual decisions to retire at sixty-two rather than sixty-seven. The delayed retirement credit, which will be fully phased in by 2008, will also hold costs more or less constant for retirements between the ages of sixty-seven and seventy.

Table 2  
*Labor Force Participation Rates by Age and Sex, 1973, 1978, 1983, 1988*

	1973	1978	1983	1988
Men				
50-54	91.6	89.7	89.1	88.4
55-59	86.2	82.9	80.7	79.3
60-61	78.0	73.0	69.7	67.0
62-64	62.6	54.2	47.1	45.4
65-69	34.2	30.1	26.1	25.8
70+	15.7	14.2	12.2	10.9
Women				
50-54	53.2	54.5	58.5	64.8
55-59	47.4	48.6	48.8	53.3
60-61	41.3	39.7	40.5	41.7
62-64	29.2	28.5	29.1	28.5
65-69	16.0	14.9	14.7	15.4
70+	5.3	4.8	4.5	4.4

Source: U.S. Bureau of Labor Statistics, unpublished tabulations from Current Population Survey.

### *Primary Insurance Amount*

Far more complicated than the actuarial adjustment for delayed retirement is the formula for the basic pension amount, or PIA. At a particular point in time, a worker's PIA is based on his average indexed monthly earnings (AIME) in employment covered by Social Security. For workers reaching sixty-two after 1990, the computation is based on the worker's average earnings in the thirty-five years of highest earnings after 1950 up to age sixty-two or the age when benefits are first claimed, whichever occurs later. The formula is also explicitly redistributive, so that workers with lower average lifetime earnings are provided with a PIA that represents a higher percentage of their past earnings.

Two features of the PIA formula link a worker's retirement age and the level of the basic pension. The first is the number of years used to calculate average earnings. People who have worked fewer than thirty-five years can always raise their basic pensions by working an additional year. This is as true for someone age sixty-seven as it is for someone age fifty-five. After working thirty-five years, however, workers gain little from an additional year of employment, particularly if their current (indexed) wage is similar to the lowest (indexed) wage in their previous earnings history. In the thirty-sixth year of a career, a worker is obligated to pay the same Social Security tax paid in the thirty-fifth year, yet the thirty-sixth year of work contributes very little to a higher basic pension amount or PIA. This provision should constitute an inducement for workers to retire after thirty-five years in the work force.

A second important feature of the PIA formula is the explicit provision to redistribute in favor of workers with low lifetime earnings. This aspect of the formula carries a price for both high-wage and average-wage workers who wish to delay retirement. Because the formula treats low earnings so favorably, it does not generously reward marginal gains in average earnings, even if they arise because a worker has decided to refrain from early retirement. Thus, average-wage or high-wage workers who work one additional year may find they receive less in future benefits than they give up in current Social Security taxes as a result of the extra work. (In terms of equations (11) and (11'),  $dSSB/dR$  is positive.) Even if the Social Security system *on average* imposes no net burden on average-wage and high-wage workers late in their careers, *on the margin* these workers may receive a smaller net transfer from Social Security

as they postpone their retirement one additional year.

In short, the thirty-five-year averaging provision and the progressivity of the benefit formula are mechanisms through which workers could potentially influence their net burden under Social Security. By altering their retirement age, workers can improve the relationship between their lifetime taxes and benefits and thereby increase the net costs that they impose on other workers. Higher costs would translate into a higher tax rate and lower lifetime consumption for those covered by the system.

### *Payroll and Income Tax Revenues*

In addition to affecting the benefit payments received by retired Americans, early retirement also affects Social Security and personal income tax revenues. The issue is the size of the revenue loss resulting from labor force withdrawal prior to age sixty-five. In 1988, 2.5 million retired workers between sixty-two and sixty-four were receiving benefits. If all those people had been working and earning the average reported taxable amount of \$16,450, total Old-Age, Survivors, and Disability Insurance payroll revenues and personal income tax receipts would each have been roughly \$5 billion higher. The additional payroll tax revenues would have allowed a 0.2 percentage point reduction in the combined employer-employee payroll tax. While this effect and the additional income tax receipts are not trivial, they hardly seem large enough to serve as the motivation for a call to reverse the trend toward early retirement.

### *Overall Assessment*

The cost of benefit payments in the United States Social Security system is substantially, though not fully, protected against a continued trend toward early retirement. By establishing age sixty-two as the age of eligibility for first benefits, reducing benefits on an actuarially fair basis for retirement before the normal retirement age of sixty-five, and increasing benefits by what will be approximately an actuarially fair delayed retirement credit for work between sixty-five and seventy, system costs are insulated from individual decisions about when to withdraw from the labor force. Moreover, Congress appears not to be constrained by actual retirement patterns when setting the age of eligibility for full benefits, as indicated by the retirement age reform in the 1983 Amendments.



The impact on future Social Security revenues posed by the trend to early retirement is a somewhat different story. Payroll and income tax receipts are lost when people stop working, before or after the normal retirement age. At the moment, the revenue loss is not large enough to justify the call for reversing the trend toward early retirement. In the future, however, the loss will become more significant, as the share of the potential work force past the age of fifty rises.

The current Social Security benefit formula provides little inducement for many workers in their fifties to remain at work. To insulate the Social Security system against the adverse effects of early retirement, it might eventually be desirable to raise the incentive for postponing retirement or, alternatively, raise the penalty for very early retirement. One simple way to accomplish this is to increase the number of years of employment that are counted in determining a worker's average lifetime earnings.

At the moment, however, the economic justification for this kind of reform does not seem compelling. To the extent that people worry about the heavy economic burden arising from early retirement, an explanation must be sought outside of its impact on the Social Security program.

### *Early Retirement and Economic Performance outside Social Security*

Many people concerned about the economic implications of the trend toward early retirement are not worried solely about the financial condition of the Social Security program; rather they are disturbed about the implications for broader measures of economic performance. Some indexes of performance would undoubtedly suffer if the early retirement trend continues. National output would be lowered by the reduction in the number of active workers and, as noted earlier, the share of national consumption going to the retired elderly would rise. The issue is whether these outcomes should cause concern.

Most economists would argue that the sense of loss and alarm stems from a failure to attach any value to leisure in the measured statistics. In the absence of any distortions created by taxes, transfers, or government regulations, virtually all economists concede that workers who value leisure more than the going wage will not and should not consent to remain employed. They are content to give up wage income for time off. National output will be lowered

by the reduction in their hours, but this decline simply measures the goods that they are willing to forgo in order to enjoy more leisure, which they value just as highly as the goods and services they give up.

Absent economic distortions, workers still in the labor force should be in no way adversely affected by the lack of participation by those who value leisure. Workers are earning a wage that compensates them for their loss of free time, and their wage equals the value of goods and services that will be available for

---

*Most economists would argue that the sense of loss and alarm stems from a failure to attach any value to leisure in the measured statistics.*

---

them to consume. Per capita output reported in traditional terms will be lower than if everyone worked, but this has no significance except to myopic consumers of economic statistics. The well-being of the nation is the sum of the well-being of its citizens, not the sum of goods and services that happen to circulate in the market. If leisure, which contributes to individual well-being, were properly valued in national income statistics, it would be clear that early retirement can contribute to an improved allocation of resources.

The question is: Does this basic economic model tell the whole story? Do instances occur where the decision not to work makes retirees less well-off than they could have been? Or does early retirement adversely affect those who remain in the labor force or future generations of workers? Several factors complicate the analysis, particularly lack of information about retirement needs and the stability of retirement income on the part of retirees, and the extent to which retirees create burdens for other members of society. An intergenerational issue also arises. Even though the current generation is happy to forgo goods and services for leisure, the next generation may find itself with a smaller capital stock than it would have desired. In sum, three different groups could be adversely affected by a trend toward early retirement: the early retirees themselves, workers

who remain actively employed, and future workers. This section examines each of these groups.

### *Early Retirees*

Those who decide to withdraw from the labor force will fare less well than a simple model of perfect competition would indicate if their withdrawal is in any sense involuntary or if they incorrectly forecast their retirement needs or the adequacy of their retirement income.

*Possibility of involuntary retirement.* Except in a handful of occupations, involuntary retirement is no longer possible in the sense that people are forced out by explicit mandatory retirement provisions. Indeed even when mandatory retirement rules existed, only a small percentage of people were actually affected by these provisions (Schulz 1988, Figure 3-5, p. 85). Despite the lack of bite in companies' mandatory retirement policies and the continued move toward early retirement, Congress passed legislation in the 1970s that allowed workers to extend their work life. The bill amending the Age Discrimination in Employment Act, which swept through Congress in 1977 with only a sprinkling of dissenting votes, extended protection against age discrimination to nonfederal employees up to age sixty-nine and eliminated the upper limit entirely for most federal workers. In October 1986, the Age Discrimination in Employment Act was amended again. The new provisions now prohibit the termination of employment on the basis of age at any age.

Retirement of an unemployed older worker could still be involuntary, however, if the price of hiring an older worker were artificially inflated; that is, if the total compensation costs faced by the firm exceeded the wage for which older employees were willing to work. Such a situation could occur if pension and health care costs increase sharply with age and these additional costs were not shifted back to the employee in the form of lower cash wages.

The relationship between pension costs and age depends critically on the nature of the retirement plan. The cost of Social Security, which is financed by a flat payroll tax on earnings, does not increase with the age of the worker. In the case of supplementary private plans, the relationship between cost and age hinges on whether benefits are provided under a defined benefit or a defined contribution plan. The defined benefit plan is the traditional pension plan and continues to be the dominant form. Under such a plan, the worker is promised a specified benefit at

retirement, based on earnings and years of service. In contrast, benefit levels under a defined contribution plan are based solely on the value of the individual worker's account at the time of retirement. This value is determined by the amount contributed to the account by the employer and/or the employee and any accrued earnings on the amounts invested.

Whereas the cost to an employer of funding a defined contribution plan remains constant, generally as a percent of earnings, over the life of the employee, the cost of funding a defined benefit plan increases dramatically with the age of the employee under most funding schemes. Cost methods based on projected benefits assume that the cost of the pension for a given year is equal to the present discounted value of benefits attributable to service

---

*The trend toward early retirement probably reflects the genuine preferences of older individuals rather than simply a new distortion in the price system.*

---

during that year. The closer the worker is to retirement, the larger the required contribution since the amount will be discounted over fewer years.

Health care expenses also increase with age, and this increase is reflected in employers' costs for health insurance. Although individual employee premiums and employer contributions per employee do not vary with the age of the worker, an employer's total cost for health insurance is directly affected by the age composition of its work force. Large employers that self-insure can see the evidence directly, and smaller employers that insure through one of the major carriers are made acutely aware of the influence of age on costs when they receive their experience-rated premium increases. This phenomenon, which has always existed, has taken on increased importance in light of the extraordinary surge in health care costs for everyone in the 1970s and 1980s.

The sharp increase in costs for older workers of employer-provided fringe benefits—primarily pensions and health insurance—need not necessarily translate into greater total compensation costs faced by the employer. It would be possible to keep older

workers' total compensation in line with that of younger employees through a decline in their cash wages. This has not happened, however, and several explanations are possible.

One likely hypothesis is that such an effort would be strongly resisted by labor unions, which simply would not be able to accept a situation where older workers, doing the same job as their younger counterparts, received less cash wages. Alternatively, Lazear (1986) argues that the wage profile is actually tipped in the other direction, with older workers being paid more than their marginal product in an effort to keep them motivated as they approach retirement. Finally, a reduction in cash wages to compensate for the increase in fringe benefit costs may well not be legal under the Age Discrimination in Employment Act, even if it were viewed as desirable by older workers themselves.

Each of the factors just mentioned can explain why older workers have difficulty finding a job they wish to hold at a wage employers are willing to pay. None of them satisfactorily explains why it has become *harder* to find a reasonably well-paid job over the past two decades. Laws on age discrimination in setting wages, fringe benefits, and other conditions of employment have made it more costly to hire older workers, to be sure, but they have also made it more difficult to fire and to refrain overtly from hiring them. The views of labor unions are of interest, but the influence of unions in the workplace has steadily diminished.

It seems unlikely that the rise in early retirement can be fully explained by a rise in demand-side barriers against hiring older workers. The high total compensation of employed older workers and the high compensation requirements of older workers who seek employment can be interpreted as evidence that these groups have good income opportunities outside the job market. Many older people would honestly like to continue working, but, unlike younger workers today or older workers in the 1950s and 1960s, they have reliable sources of income outside of employment. Thus, the trend toward early retirement probably reflects the genuine preferences of older individuals rather than simply a new distortion in the price system.

*Inadequate knowledge.* An entirely sanguine conclusion about the economic implications of the trend toward early retirement presupposes full knowledge about all options on the part of the people making decisions. In the case of deciding whether or not to withdraw from the labor force, this assumption pre-

sumes workers' knowledge of their income needs during retirement and a complete understanding of the capacity of their public and private pensions to satisfy those needs over a period as long as several decades.

On the needs side, the assumption of ability to forecast seems fairly reasonable. People have a good idea of the money required to maintain their living standard before retirement and can probably be expected to make a reasonable forecast for the next ten or twenty years. The exception, of course, is health care. Even here Medicare after age sixty-five can protect retirees from most contingencies, although the possibility of developing a chronic condition that requires long-term care stands out as a major risk against which almost no one is protected. For the most part, however, assessing income needs in retirement seems like a manageable task.<sup>10</sup>

On the income side also, benefits received under Social Security are quite predictable. These amounts are directly related to earnings and, once awarded, are adjusted annually to keep pace with changes in the consumer price index. This ensures that Social Security benefits retain their purchasing power over the worker's retirement. The economic well-being of retirees relative to workers will decline somewhat over time, since those employed will see their earnings increase to reflect productivity improvements as well as price increases. This effect is quite modest, however. With annual productivity growth of 1.5 percent, a retirement benefit initially equal to one-half the average wage will decline to 40 percent of the average wage by the end of 15 years.

While Social Security benefits are fully adjusted for inflation, the maximum amount payable under this program for a person retiring at age sixty-five in 1989 was only \$10,788 for a single person and \$16,176 for a couple. This means that many middle-income and upper-income people receive a significant portion of their retirement income from supplementary public and private pension plans that are paid in nominal dollars. Even if inflation rates stay at modest levels, the purchasing power of benefits fixed in nominal terms will erode and retirees' standards of living will decline noticeably. When persistent inflation is combined with the trend toward early retirement and increased longevity, the value of an undindexed pension decreases significantly (Table 3). Employers and plan sponsors have been aware of the erosive impact of inflation and have periodically adjusted benefits in response to rising prices. The problem is that these adjustments generally account

Table 3  
*Purchasing Power of \$100 of Fixed Pension Benefits under Various Rates of Inflation*

Number of Years after Retirement	Annual Rate of Inflation		
	4%	8%	12%
5	\$82	\$68	\$57
10	68	46	32
15	56	32	18
20	46	22	10

Source: Authors' calculations.

for only a small portion of the change in consumer prices.

Thus, people who retire early and for whom private pension income constitutes a sizable portion of their retirement income take a serious risk that inflation will erode their financial security. In this way, the retirees themselves may end up significantly less well off than anticipated at the time of retirement.

### Current Workers

A second group that could be adversely affected by the trend toward early retirement are those people who remain in the labor force. The major perceived threat is that those who stop working hurl themselves on the employed for support. Two pieces of evidence indicate that this does not happen. Moreover, those who are left in the labor force may actually gain by having more capital per capita to work with and by facing reduced competition from older workers who block promotion possibilities.

*Income sources of early retirees.* Although good data are not readily available with which to identify the income sources of early retirees, two pieces of information indicate that these individuals are supporting themselves. First, except in the case of the disabled, public programs provide almost no funds to individuals aged fifty-five to sixty-two. Second, the receipt of pension income has increased substantially for this group.

As noted earlier, Social Security retirement benefits are not available before age sixty-two, regardless

Table 4  
*Pension Recipients by Sex and Age, 1973, 1978, 1983 and 1987*  
 Numbers in Millions

Sex and Age	Pension Recipients								Percentage Change <sup>b</sup> 1973-87
	1973		1978		1983		1987		
	Number	Percent <sup>a</sup>	Number	Percent <sup>a</sup>	Number	Percent <sup>a</sup>	Number	Percent <sup>a</sup>	
Total:									
50-54	.3	2.7	.5	3.9	.5	4.8	.6	5.6	107.4
55-61	.8	6.0	1.4	9.2	1.9	11.8	2.3	14.9	148.3
62-64	.6	12.3	1.1	19.4	1.4	23.3	1.6	25.5	107.3
65 and over	3.7	19.6	5.7	24.5	7.7	29.1	9.3	32.5	65.8
Men:									
50-54	.2	4.6	.4	6.2	.4	7.0	.4	8.4	82.6
55-61	.5	8.2	1.0	14.1	1.3	16.9	1.5	21.0	156.1
62-64	.4	16.4	.7	27.1	.9	32.6	1.1	36.0	119.5
65 and over	2.3	29.6	3.4	35.3	4.5	42.1	5.4	45.7	54.7
Women:									
50-54	.1	1.0	.1	1.9	.2	2.7	.2	3.0	200.0
55-61	.3	4.0	.4	4.8	.6	7.4	.7	9.3	132.5
62-64	.2	8.8	.4	12.7	.5	15.3	.6	16.4	86.4
65 and over	1.4	12.5	2.3	17.0	3.1	20.0	3.9	23.2	85.6

<sup>a</sup>Pension recipients as a percentage of total population in age group.

<sup>b</sup>Percentage change in the proportion of sex-age group receiving pension.

Source: U.S. General Accounting Office, 1986. *Retirement before Age 65: Trends, Costs, and National Issues*. July. Washington, D.C.: General Accounting Office, Table 2.1, p. 22; U.S. Department of Commerce, Current Population Survey, March 1988, machine readable data.

of when an individual withdraws from the labor force. The other major sources of government support (except for food stamps) are also generally not available, since they are means-tested programs aimed at targeted groups of people. For example, Aid to Families with Dependent Children is designed for poor families with children under age sixteen; the Supplemental Security Income program is targeted on those over age sixty-five and the blind and disabled. In short, few direct government subsidies are provided for the nondisabled in the early retirement age group.

On the other hand, the receipt of pension income increased markedly between 1973 and 1987, the period when the trend toward early retirement accelerated. In 1987, 21 percent of men age fifty-five to sixty-one were receiving benefits (Table 4). Roughly half of these pensions were provided by private employers, 20 percent were from the military, and the remainder from the federal government or the states. Most of the people age fifty-five to sixty-one receiving pensions, particularly nonmilitary pensions, were out of the labor force; only 40 percent of men and 32 percent of women receiving civilian pensions described themselves as labor force participants (Table 5). Although this evidence is by no means conclusive, it does appear that those people receiving pensions are the ones not participating in the labor force, and that pension income, not the public dole, is the means by which early retirees support themselves.

The discussion so far implies that reliance on pension benefits is nearly identical to reliance on one's own saving. This is not quite correct. Saving through employer-sponsored pension plans is subsidized under the federal income tax, and this fact has implications for government revenues and tax rates.<sup>11</sup> Those who receive a portion of their compensation in deferred pension benefits pay less tax over their lifetime than those who receive all their compensation in wages. By allowing the deferral of taxes until retirement, compensation in the form of pension contributions offers three advantages over compensation in the form of wages. First, the full dollar of contribution without any reduction for income tax is available for investment during the employee's working years. This contrasts with the situation in which a dollar is paid in wages and the employee has only the after-tax dollar to invest. Second, no tax is currently paid on the investment income from accumulated assets, whereas interest earned by the employee on ordinary savings is subject to tax as income accrues.

Table 5  
*Labor Force Participation Rates for Pension Recipients and Nonrecipients by Sex and Age, March 1988*

Sex and Age	Pension Recipients			Nonrecipients
	Total	Civilian	Military	
Men:				
50-54	67.6	51.3	83.9	90.8
55-61	44.6	39.9	64.4	83.7
62-64	23.1	20.6	38.2	59.8
65 and over	10.7	10.4	16.4	21.3
Women:				
50-54	59.3	58.7	<sup>a</sup>	63.8
55-61	32.7	32.2	<sup>a</sup>	50.5
62-64	19.8	19.8	<sup>a</sup>	29.9
65 and over	6.8	6.9	2.2	8.4

<sup>a</sup>Base population less than 75,000.

Source: U.S. Department of Commerce, *Current Population Survey*, March 1988, machine readable data.

Finally, when benefits are distributed in retirement, they are likely to be taxed at a lower marginal rate than if they had been taxed when they accrued.

The tax-deferred status of supplementary pension benefits causes a loss to the Treasury of significant revenues. Although the precise amount of the revenue loss is subject to considerable controversy, the total is undoubtedly quite large. For example, the U.S. Office of Management and Budget estimates that the revenue loss for 1990 (on a cash flow basis) is roughly \$49 billion (1989, Table 6.1, p. 6-43). While only half the work force is covered by a supplementary pension plan, all taxpayers must pay higher taxes to make up for the forgone revenues. Thus the growing reliance of early retirees on supplementary pension benefits increases the tax burden on workers without pension coverage.

On the other hand, all workers reap the economic advantages from having fewer people, particularly fewer senior people, in the labor force. Economic theory indicates that output per worker will vary with the amount of capital each worker has available to work with. In the 1970s, for example, a slowdown in the rate of growth in the capital-labor ratio, associated with the entry of the baby boom generation into the labor force, contributed to the slowdown in productivity and wage growth. An alternative and somewhat more complicated version

of the same idea is the argument by Easterlin (1980) that young workers in small cohorts fare much better in the job market than those in large ones.

The history of retirement as an institution also underscores the advantages seen by both business and labor in getting older workers out of the labor force (Graebner 1980). Retirement has been supported by both groups as a means of replacing expensive older workers with cheaper younger ones, of opening up promotion opportunities, and of controlling unemployment by retiring older workers to create places for younger ones.

On balance, then, those who remain in the labor force probably gain from the trend towards early retirement. They are not asked to support substantially those who retire, and the early retirement of older workers probably increases the real wage earned by those who remain.

### *The Next Generation*

The next generation is linked in two ways to the retirement decisions of today's older employees. First, they are providing Social Security benefits far in excess of anything that could be justified on the basis of the contributions of the current elderly. Second, a question arises whether the decision to withdraw early means that less saving occurs than if everyone stayed in the labor force until age sixty-five.

*Intergenerational transfers.* Although it is difficult to decide precisely how to interpret the information, it is important to remember that those currently retiring will receive Social Security benefits that greatly exceed their contributions into the system and any reasonable rate of return. In terms of the simple model discussed earlier, this group has experienced a shift in its budget constraint because of an intergenerational wealth transfer. This increase in wealth has allowed those currently over age fifty (as well as all preceding cohorts since the introduction of the program) to purchase more leisure as well as other goods than they would have been able to buy based solely on their own earnings.

The alternative to providing extraordinarily high rates of return to these older workers would be simply to reduce the benefits payable under the program. This would presumably not only reduce the income of those affected, but also alter some labor force participation decisions. Both developments would have ramifications that offset any immediate perceived gain. To the extent that benefit levels fell below acceptable standards, society would probably

compensate with the introduction of some additional means-tested benefits that would require additional outlays on the part of the federal government. To the extent that older workers decided to continue working, their participation would preclude some of the benefits accruing to today's workers, described above.

Moreover, the issue of intergenerational transfers is one that is close to disappearing in the wake of the maturation of the Social Security system. While earlier generations received very high returns on their combined employee-employer contributions and today's older workers continue to receive a subsidy, new entrants into the work force will receive benefits that are roughly equal to their and their employers' contributions plus a real rate of return of about 2 percent. Hence, whatever the implications of existing intergenerational transfers, these transfers will become irrelevant in less than a generation.

*Saving.* A question can also be asked about whether the trend toward early retirement has any impact on national saving and capital formation. The answer in this case seems straightforward.

A trend toward early retirement would be expected to increase national saving, since people who retire early are forced to save at a higher rate over a shorter working life in order to finance a longer period in retirement. Even if each individual were a perfect life-cycle saver with zero net saving over her or his lifetime, with a growing population aggregate saving would increase because the number of savers would outnumber the dissavers. Similarly, if incomes

---

*At the moment, those who retire early do not appear to impose any burden on society at large.*

---

were rising, the amount saved by workers would exceed that dissaved by retirees. Since historically both the population and real per capita income have tended to increase each year, theory would suggest that the trend toward early retirement would have increased the rate of saving in the economy.

The saving issue, however, may be one where the real world differs from the theory. The evidence indicates that many people do not reach the end of

their lives with zero assets, but die with some resources remaining. Hence lifetime saving for many individuals is probably positive, rather than zero. The likelihood of using up resources, however, is probably greater for those who retire early than for those who retire at age sixty-five or later. The reason for this is that the value of private pension benefits declines sharply over time, since they are not indexed for inflation. This erosion is generally not foreseen, and indeed is not knowable in that it depends on the performance of the broader economy. The longer people are retired, the greater the likelihood of pension benefits becoming inadequate for their needs and the more likely they will have to draw down accumulated assets. By reducing the amount of assets remaining at the end of life, early retirement may somewhat reduce national saving.

## Conclusion

Based on economic factors alone, the widespread concern over the trend toward early retirement seems unwarranted. The trend has thus far been confined largely to American men. Women are actually more likely to work between the ages of fifty and sixty-four than they were in the past. The employment gains of women have offset a large share of the employment losses among men of the same age. Of course, the U.S. population is aging, and this must eventually raise the proportion of national consumption going to the retired elderly, regardless of retirement patterns. This fact by itself should hardly be alarming, however. In a world where workers save for their own retirement, the growing claim of the retired elderly on national consumption places no extra burden on workers.

The aging of the population imposes burdens on future generations of workers when those workers are asked to bear a substantial part of the cost of financing retirees' consumption, for example, through

---

<sup>1</sup> The flavor of this debate is suggested by titles of some recent articles in the popular press: "The Coming Conflict as We Soak the Young to Enrich the Old," *The Washington Post*, January 5, 1986, pp. D1, D4; "Our Idle Retirees Drag Down the Economy," *The New York Times*, October 18, 1988, p. A31; and "Aging America: They've Got to Eat, So Let Them Work," *The Economist*, September 16, 1989, pp. 27-34.

<sup>2</sup> This simple model treats annual earnings  $E$  as if they were given and unaffected by the level of national saving. Thus, the only economic variable affected by decisions to retire is the number of years worked, and hence the product of years worked and  $E$ . In a closed economy, of course, the aggregate of individual retirement

means-tested programs or a social insurance system. Because of the demographic structure of the United States, the consumption claims of the retired elderly will grow, whether or not a trend to earlier retirement occurs. An important question, however, is whether a trend toward early retirement will impose heavier burdens on future workers than they would have otherwise experienced. The answer to this question depends critically on the specific tax and benefit provisions of the social insurance system under consideration.

The United States Social Security system is largely protected from any increase in costs arising from retirement before age sixty-five. No benefits are payable until age sixty-two, and benefits are actuarially reduced between ages sixty-two and sixty-five. The basic pension formula, by not generously rewarding employment beyond thirty-five years, may allow individuals to control somewhat their net burden under the system, and thereby affect system costs. But this feature of the formula could be easily modified. In 1983 Congress showed that it is willing to raise the reward for delayed retirement and reduce the reward for early retirement if that is necessary to protect the integrity of the program.

If workers choose to retire at younger ages in spite of the financial penalty for early retirement, it is unclear why other workers should object. At the moment, those who retire early do not appear to impose any burden on society at large; they seem to be supporting themselves with accumulated assets and supplementary public and private pensions. Those left in the work force probably gain on balance from the earlier withdrawal of older workers. The early retirement trend does reduce income and payroll tax revenues somewhat, and national saving may be slightly lower. But it would be difficult to argue for reversing the trend on the basis of these secondary effects. If a strong case can be made against early withdrawal from the labor force, it must rest more on arguments about the physical and psychological well-being of early retirees themselves.

decisions determines aggregate saving, the capital-labor ratio, and hence  $E$ . In an open economy, however, the retirement decisions in one country would have little effect on that nation's capital stock since the stock of capital is determined by worldwide interest rates.

<sup>3</sup> In a model where the level of saving influences the average wage rate,  $E$ , a trend toward early retirement can affect the earnings and consumption of late retirees, though the effects are ambiguous (see below).

<sup>4</sup> A small amount of revenue is also raised through income taxes assessed against Social Security benefits paid to high-income recipients. The revenue raised is so small it will be disregarded here.

<sup>5</sup> This should not be interpreted to imply that the welfare gains from a social insurance system are limited to the pure financial advantages that participants under the system enjoy. Even if workers on average pay more in taxes than they receive in benefits, they may still enjoy welfare gains. For example, U.S. Social Security provides insurance against the uncertainty of the duration of life spans,  $T$ , and some protection against the uncertainty of future prices and rates of return. Nonetheless, the strictly financial aspects of the program are important and worth considering.

<sup>6</sup> The early retirement age in the U.S. system is sixty-two, which is about forty years after workers typically enter the work force.

<sup>7</sup> Although the ratio of beneficiaries to workers has risen over much of the past half century, no retiring cohort up to now has paid more in Social Security taxes than it has gotten back in Social Security benefits; the net burden of the program has been negative. Individually, members of past retiree cohorts are better off than they would have been if they had saved for their own retirement. Future cohorts may not be so lucky. Under recent projections future retirees will receive Social Security benefits equal roughly to their tax contributions plus a real return of about 2 percent.

<sup>8</sup> This will depend on the rate of population growth among other factors.

<sup>9</sup> Lifetime benefits can rise slightly as a result of the early retirement option if workers with short life expectancies choose to claim benefits at age sixty-two, while workers with longer life expectancies continue to retire at sixty-five.

<sup>10</sup> While couples may be capable of anticipating their retirement needs as a unit, many old workers make poor provision for their surviving dependents. The death of a retired husband very frequently leads to the poverty of the surviving spouse, even if the couple was not poor when the husband was alive (see Auerbach and Kotlikoff 1987, and Hurd and Wise 1989). The high poverty rate of aged widows is a strong challenge to the economic assumption that workers plan carefully and conserve their resources prudently for the likely contingencies of old age.

<sup>11</sup> It is important to note here that the tax preference for pensions is conferred on *all* pension plans and does not of itself constitute an incentive to retire early. A pension plan might encourage early or late retirement, depending upon the provisions of the plan. The tax preference only offers an inducement to establish a pension plan.

## References

- "Aging America: They've Got to Eat, So Let Them Work." *The Economist*, September 16, 1989, vol. 312, no. 7620, pp. 27-34.
- Auerbach, Alan and Laurence J. Kotlikoff. 1987. "Life Insurance of the Elderly: Its Adequacy and Determinants." In *Work, Health and Income of the Elderly*, Gary Burtless, ed., pp. 229-268. Washington, D.C.: The Brookings Institution.
- "The Coming Conflict as We Soak the Young to Enrich the Old." *The Washington Post*, January 15, 1988, pp. D1, D4.
- Davis, Kingsley. 1988. "Our Idle Retirees Drag Down the Economy." *The New York Times*, October 18, p. A51.
- Diamond, Peter A. and Jerry Hausman. 1984. "The Retirement and Unemployment Behavior of Older Men." In *Retirement and Economic Behavior*, Henry Aaron and Gary Burtless, eds., pp. 97-132. Washington, D.C.: The Brookings Institution.
- Easterlin, Richard A. 1980. *Birth and Fortune: The Impact of Numbers on Personal Welfare*. New York, NY: Basic Books, Inc.
- Graebner, William. 1980. *A History of Retirement: The Meaning and Function of an American Institution, 1885-1978*. New Haven, CT: Yale University Press.
- Hausman, Jerry and Lynn Paquette. 1987. "Involuntary Early Retirement and Consumption." In *Work, Health and Income of the Elderly*, Gary Burtless, ed., pp. 151-174. Washington, D.C.: The Brookings Institution.
- Hurd, Michael and David Wise. 1989. "The Wealth and Poverty of Widows: Assets Before and After the Husband's Death." In *The Economics of Aging*, David Wise, ed., pp. 177-199. Chicago, IL: University of Chicago Press.
- Internal Revenue Service, Statistics of Income Division. 1988. Unpublished data.
- Kessler, Denis and Andre Masson. 1989. "Bequest and Wealth Accumulation: Are Some Pieces of the Puzzle Missing?" *Journal of Economic Perspectives*, vol. 3, no. 3, Spring, pp. 141-152.
- Kotlikoff, Laurence J. 1988. "Intergenerational Transfers and Savings." *Journal of Economic Perspectives*, vol. 2, no. 2, Spring, pp. 41-58.
- Lazear, Edward P. 1986. "Incentive Contracts." NBER Working Paper No. 1917. Cambridge, MA: National Bureau of Economic Research.
- Modigliani, Franco. 1988. "The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth." *Journal of Economic Perspectives*, vol. 2, no. 2, Spring, pp. 15-40.
- Myers, Robert J. 1985. *Social Security*, 3rd edition. Homewood, IL: Richard D. Irwin, Inc.
- Palmer, John L. and Isabel Sawhill, eds. 1988. *The Vulnerable*. Washington, D.C.: The Urban Institute Press.
- Russell, Louise B. 1982. *The Baby Boom Generation and the Economy*. Washington, D.C.: The Brookings Institution.
- Schulz, James H. 1988. *The Economics of Aging*, 4th edition. Dover, MA: Auburn House Publishing Co.
- U.S. Department of Health and Human Services, Social Security Administration. 1988. *Social Security Bulletin, Annual Statistical Supplement*. Washington, D.C.: Government Printing Office.
- . 1989. Unpublished data.
- U.S. General Accounting Office. 1978. "Inconsistencies in Retirement Age: Issues and Implications." Washington, D.C.: Government Printing Office.
- . 1986. "Retirement Before Age 65: Trends, Costs and National Issues." Washington, D.C.: Government Printing Office.
- U.S. Office of Management and Budget. 1989. *Special Analyses: Budget of the United States Government, Fiscal Year 1990*. Washington, D.C.: Government Printing Office.
- Welch, Finis. 1979. "Effects of Cohort Size on Earnings: The Baby Boom Babies' Financial Bust." *Journal of Political Economy*, vol. 87, no. 5, part 2, pp. S65-S98.
- Yeas, Martynas A. and Susan Grad. 1987. "Income of Retirement-Aged Persons in the United States." *Social Security Bulletin*, vol. 50, no. 7, July, pp. 5-14.