7-1985

Estimating the Effects of Changing Social Security Benefit Formulas

Gary S. Fields
Cornell University, gsf2@cornell.edu

Olivia S. Mitchell
Cornell University

Estimating the Effects of Changing Social Security Benefit Formulas

Abstract
[Excerpt] The U.S. Social Security system faces serious financial difficulties in both the short and the long run. The short-run problem is that the system has very meager financial reserves. In the long run—after the year 2010, when the post-World-War-II baby-boom generation reaches retirement age—the financial problems of Social Security will intensify because of population aging and the consequent decline in the ratio of workers to retirees.

These problems have led to proposed reforms aimed at assuring the financial stability of the system. The question addressed here is: what effects would these reforms have on three variables—retirement ages, retirement incomes, and the Social Security system? This paper highlights the estimated effects of four actual or proposed policy changes. The basic model and some of the effects are drawn from previous work. However, the estimates of the effects of Social Security reforms on the Social Security system itself are new.

Keywords
Social Security, pension, retirement, aging, public policy

Disciplines
Labor Relations | Law and Politics | Public Policy | Social Policy | Social Welfare

Comments
Suggested Citation

Fields, G. S. & Mitchell, O. S. (1985). Estimating the effects of changing Social Security benefit formulas [Electronic version]. *Monthly Labor Review, 108*(7), 44-45.

Estimating the effects of changing Social Security benefit formulas

GARY S. FIELDS AND OLIVIA S. MITCHELL

The U.S. Social Security system faces serious financial difficulties in both the short and the long run. The short-run problem is that the system has very meager financial reserves. In the long run—after the year 2010, when the post-World-War-II baby-boom generation reaches retirement age—the financial problems of Social Security will intensify because of population aging and the consequent decline in the ratio of workers to retirees.

These problems have led to proposed reforms aimed at assuring the financial stability of the system. The question addressed here is: what effects would these reforms have on three variables—retirement ages, retirement incomes, and the Social Security system? This paper highlights the estimated effects of four actual or proposed policy changes. The basic model and some of the effects are drawn from previous work.[1] However, the estimates of the effects of Social Security reforms on the Social Security system itself are new.

The life cycle framework

The analytical framework is the economist's model of life cycle decisionmaking. This model maintains that intertemporal choices are made with reference to intertemporal preferences and an intertemporal budget set. Perhaps the most familiar application is to educational decisionmaking, wherein the individual is thought to decide how much schooling to acquire on the basis of his or her preferences and the income and job opportunities associated with alternate educational attainments. The retirement decision is also regarded in life cycle terms.[2] That is, the individual is viewed as deciding how long to work and when to retire on the basis of the income from various sources that would be realized at alternate retirement ages and the associated amounts of leisure.[3]

The four reforms, similar to ones actually legislated in 1983 or proposed for legislation, can be described as follows:

Experiment A, which increases the normal retirement age. This means that a worker who retires at age 65 no longer receives a benefit equal to his PIA. Experiment *A* simulates the effect of raising this age to age 68, as was widely proposed. (What in fact was legislated was a change to age 66 by the year 2009 and to age 67 by the year 2027.) Under the simulated reform, the PIA multiple is 1.00 at age 68 and the early retirement reduction factor remains at 6% percent per year. Thus, the multiples under this experiment are .60 for retirement age 62 and .80 for retirement age 65, with corresponding reductions at other ages. (The 1983 legislation set a minimum multiple of 70 percent.)

Experiment B, which delays the cost-of-living adjustment. Rules in effect in 1982 specified that a cost-of-living adjustment would take place each July, reflecting increases in the Consumer Price Index during the preceding calendar year. The 1983 legislative amendments delayed these increases by an additional 6 months. This delay reduces real benefits by half the rate of inflation, or 2.3 percent, and has a relatively small effect.

Experiment C, which raises the late retirement credit. This means that benefits are increased faster than 3 percent if retirement is postponed beyond age 65. We simulated a 6% percent per year late retirement credit, the same as the early retirement reduction factor. The multiple for retirement at age 68 would have risen from 1.09 to 1.20. (As it turned out, in 1983, Congress mandated a gradual increase in the late retirement credit, eventually reaching 8 percent per year as of the year 2009.)

Experiment D, which changes the early retirement reduction factor. This proposal reduces early benefits by 15 percent per year, rather than by the existing 6% percent. The multiple for retirement at age 62 would therefore be .55, rather than .80 as at present. (A similar proposal was rejected in Congress in 1981.)

Effects on the intertemporal budget set

Increasing the normal retirement age to 68 (Experiment *A)* lowers retirement benefits by more than $1,000 per year, or about $17,000 for men retiring in their early sixties; the reduction is almost as large for those deferring retirement until age 65. Another effect of Experiment *A* is to tilt the Social Security benefit structure toward actuarial neutrality, in stark contrast to the pre-reform situation, which contained a penalty for continuing to work. Thus, increasing the normal retirement age lowers benefits at all early retirement ages and provides new financial incentives to remain on the job longer.

Experiment *B,* in which the cost-of-living adjustment is postponed 6 months, reduces annual benefits by $100 to $200, which translates into diminished present discounted values of at most $1,600. Because the income amounts involved are small, this reform does not appreciably alter the pattern of discounted benefit gains obtained by deferring retirement.

Experiment *C* raises the late retirement credit to match the early retirement reduction factor. Benefits are increased after age 65, raising annual benefits by as much as $800 at

Gary S. Fields is a professor at Cornell University's Department of Economics and the Department of Labor Economics, New York State School of Industrial and Labor Relations. Olivia S. Mitchell is an associate professor at Cornell University's Department of Labor Economics, New York State School of Industrial and Labor Relations and a Research Associate at the National Bureau of Economic Research.

age 68. Present value at age 68 increases by $6,000—still not enough to achieve actuarial neutrality, but substantially reducing the penalty (in present discounted value terms) for continuing to work beyond age 65.

Experiment *D* lowers early Social Security benefits, holding benefits beyond age 65 the same. For a worker retiring at age 62 or before, the annual benefit would have fallen by $1,700 and present discounted value by some $21,000. The gain in present discounted value of Social Security benefits for an extra year of work before age 65 would be $6,000 to $9,000. This reform would create a powerful penalty for retiring early and a powerful incentive for continued work. Yet, as we shall see, even those forces would not change retirement ages very much.

Effects on retirement ages

In predicting the changes in retirement ages for each of the four reforms, we find the largest effect under Experiment D, which cuts benefits al the earliest retirement age while offering a larger reward for continued work after age 62. Workers would retire about 3 months later on average, as a result of this reform. Intermediate retirement responses are found under Experiment A, which changes the normal retirement age. Benefits are lowered by approximately the same dollar amount at every age but the gain from working an additional year is unchanged. We predict that Experiment *A* would delay retirement by about $1^{x}h$ months, on average. The smallest responses occur when early retirement benefits are altered the least. Both Experiment *B* (delaying cost-of-living adjustments) and Experiment C (raising the late retirement credit) are of this type. These reforms are estimated to delay retirement by an average of less than 1 week each.

All in all, the results suggest that workers will work longer if Social Security benefits are cut, but not much longer. This generic conclusion is consistent with estimates obtained by others using different models and simulating different reforms.

Effects on retirement incomes

Some may have thought that in response to a lower benefit schedule, workers would postpone retirement by enough to keep their retirement incomes unchanged. However, small changes in retirement ages suggest otherwise. Indeed, the reforms would cut the Social Security benefits received, even after taking account of this lengthened worklife and consequent increase in annual Social Security benefits. These cuts are as large as 22 percent under Experiment *A*, which increases the normal retirement age. The effects are largest under this experiment than under the others, because it reduces early retirement benefits a great deal while retaining a small incentive for prolonged work. Even though retirement is deferred somewhat, increased employer-provided pensions and earnings do not make up the difference.

Effects on the Social Security system

The Social Security system's financial problems are alleviated under the various reforms to the extent that workers work longer or retirees receive less, or both. The increased contribution effect is found by multiplying the average deferral of retirement by the average gross earnings in each year, and then applying the combined employer/employee contribution rate to the result (6.7 percent for each in 1982, the year for which calculations were made). The savings to the Social Security system from lower benefit payouts is simply the mirror image of the loss to workers in present discounted value of Social Security benefits.

In each case, the Social Security system comes out ahead: by more than $15,000 in the case of Experiment *A* (increasing the normal retirement age) and by more than $8,000 for Experiment *D* (changing the early retirement reduction factor). Given that there are millions of Social Security recipients, the system would gain billions of dollars if these reforms were implemented. For example, if 20 million workers (the number now receiving Social Security benefits) were each to receive $15,000 less on balance in the course of their lifetime, the system would gain some $300 *billion.* This surpasses by more than $100 billion the Social Security deficit that was viewed as unacceptable and which prompted the Social Security amendments of 1983. Yet, even this huge sum would go only a small part of the way toward meeting the *multi-trillion* dollar long-term deficit of the system. •

FOOTNOTES

'See Gary S. Fields and Olivia S. Mitchell, *Retirement, Pensions, and Social Security* (Cambridge, MA, MIT Press, 1984).

[2] Says Robert P. Quinn (forthcoming), who formulated one of the earlier models: "Until relatively recently, analysts tended to describe the magnitude of retirement income rights by the size of the annual benefit, or by its close relative, the replacement rate. Though useful summary statistics, these annual flow concepts ignore key aspects of the retirement incentives, in particular, how annual benefits change with continued work or with inflation after retirement."

'Some might question whether retirement is a choice at all or whether it is compelled by poor health or mandatory retirement. The U.S. evidence shows that the great majority of workers could go on working (that is, their health is sound and they have not yet reached the age of mandatory retirement in their firms) but elect to retire earlier, presumably to enjoy more leisure. See Fields and Mitchell, *Retirement, Pensions, and Social Security,* for a summary of this literature.

To estimate how Social Security and other income sources affect workers' choices of retirement ages, information is required on the actual retirement age chosen and the intertemporal budget set facing each worker. We constructed the necessary data for a sample of 1,024 white males covered by the Longitudinal Retirement History Survey for the years 1969 through 1977. To these data, we fit an ordered logit model.