Comment   Michael D. Hurd

The actual progressivity of Social Security has become an important topic in connection with proposals to replace some of the existing system with private accounts. Opponents of these proposals argue that an important component of the existing system is progressivity, whereby benefits are related in a redistributive manner to a measure of lifetime earnings. However, it has long been recognized that individuals with higher socioeconomic status, whether measured by education, income, or wealth, live longer than individuals with lower socioeconomic status. Because Social Security is an annuity, a longer life means that total expected lifetime Social Security benefits will be higher among high lifetime earning individuals than would be the case if they survived according to a population life table. These higher payouts may reduce progressivity when measured in this way and could even reverse progressivity. This possibility has noted previously and the effect on progressivity has been estimated with varying results depending on the assumptions made by different authors. For example, Gustman and Steinmeier (2001) use actual Social Security earnings histories linked to the Health and Retirement Study and find that indeed there is significant redistribution from high lifetime earning individuals to low lifetime earning individuals when measured by the expected present value of Social Security benefits. But much of that redistribution disappears when the calculations are put in a household basis due to spouse benefits and survivor benefits. The main contribution of Goda, Shoven, and Slavov is to use more contemporary life tables in these types of calculations. To the extent that there has been a drift in differential mortality it is informative to find how these measures of redistribution are affected. Their findings are more or less in line with those of Gustman and Steinmeier: the greater life expectancy of high earning individuals offsets the concavity of the function relating lifetime earnings to Primary Insurance Amount reducing or eliminating progressivity.

My comments will be about two subjects. First, this lack of progressivity is not found by all researchers. I will give a prominent example of differing results and point out some possible reasons for the difference. Second, I will ask about the use of the word "progressivity" in this context, and will argue that the implications of a lack of progressivity, as measured here, are much less clear than in traditional discussions about tax policy.

The Congressional Budget Office (CBO) has released several studies about the progressivity of the Social Security system (Harris and Sabelhaus 2005; CBO 2006). Their estimates are based on actual work histories of a large sample of workers and projections of lifetime Social Security

Michael D. Hurd is a senior principal researcher and director of the Center for the Study of Aging at RAND, and a research associate of the National Bureau of Economic Research

benefits using life tables that account for differential mortality. They differ from Goda, Shoven, and Slavov, who use stylized workers from the twenty-fifth, fiftieth, and seventy-fifth percentiles of lifetime earnings distribution. The main findings from the CBO reports are that Social Security is quite progressive when measured by the variation across lifetime earnings quintiles in the ratio of lifetime Social Security benefits to lifetime taxes. For example, individuals from the lowest earnings quintile can expect to receive about twice as much in benefits as taxes, and this ratio is fairly constant across the birth cohorts from the 1940s to the 1990s (CBO 2006). Those in the highest earnings quintile have a ratio of benefits to earnings of about 60 percent. These numbers indicate a strong progressive system.

What accounts for the difference between these results and those of Goda, Shoven, and Slavov? First, and most importantly, the CBO estimates account for the entire Social Security system: retired worker benefits, disability benefits, and auxiliary benefits (surviving spouse and underaged children of a decreased or retired worker). The disabled worker part of the program is particularly progressive. Auxiliary benefits are also progressive: Social Security provides what is essentially a rather generous life insurance benefit. Obviously, those who die early will have had lower lifetime earnings and so the life insurance program will be progressive; but also because lower socioeconomic status (SES) individuals as measured by, say, education are expected to die earlier, the program is progressive ex ante.

However, the difference between the CBO estimates and Goda, Shoven, and Slavov are not due solely to the fact that Goda, Shoven, and Slavov confine themselves to the retired worker part of the program. Indeed, again measuring progressivity by the variation in the ratio of lifetime Social Security benefits to lifetime earnings, the CBO finds that this ratio varies by a factor of about 1.65. Some reasons for the difference include the rather coarse classification by Goda, Shoven, and Slavov of lifetime earnings into just three groups. The CBO results show that most progressivity is at the lower end of the earnings distribution, where progressivity increases rather sharply as lifetime earnings decrease from about the thirtieth percentile to about the fifth percentile. This variation would be obscured by the coarse Goda, Shoven, and Slavov classification. That cannot be the entire explanation, however, because CBO shows progressivity throughout the entire earnings distribution. Another difference is that CBO is based on household earnings rather than stylized earnings of an individual. Again, that cannot be the explanation because progressivity is higher when only individual workers are considered rather than households (Harris and Sablehaus 2005, table 1). Other differences include the measure of income that is used in the classification both for economic status (to determine progressivity) and for differential mortality. Consider, as an extreme hypothetical example, a wealthy person with high lifetime income (from dividends and interest) but low lifetime earnings (because she worked just enough to quality for Social

Security benefits). Such a person is likely to have elevated survival. Classifying by lifetime Social Security earnings would reduce differential mortality and increase progressivity because a low lifetime earner would have a very high ratio of lifetime benefits to contributions; classifying by lifetime income would have an uncertain effect on progressivity relative to the first classification because a high income person would both survive longer and have a high ratio of lifetime benefits to contributions.

One aspect that is partially but not completely outside of the Social Security system is the taxation of Social Security benefits. There is a complex interaction between the Federal income tax system and the level of Social Security benefits. A concise summary is that low income people who nevertheless face a positive marginal tax rate on earnings may face a zero marginal (and average) tax rate on Social Security benefits, whereas high income people pay taxes on up to 85 percent of Social Security benefits. Thus, for example, single persons aged sixty-five to sixty-nine in the Health and Retirement Study who lack a high school education will pay about 2 percent of their Social Security benefits in income taxes, whereas single college graduates will pay about 14 percent of their benefits in taxes.[1]

One conclusion about the progressivity of the retired worker part of the Social Security system is that there are unexplained differences between the results of Goda, Shoven, and Slavov and the results of CBO and Harris and Sabelhaus. It would be useful to understand the sources of the differences. In addition, however, because of the special treatment of Social Security under the income tax, some additional progressivity should be attributed in addition to that induced by the concave benefit schedule. Although there is value in considering the retired worker part of the system in isolation because we would like to know the consequences of modifying that part of the program only, the program should be viewed as a social program that has a number of insurance components, which taken together have considerable progressivity.

My second topic is how to think about progressivity in a multiperiod setting and how the policy implications might differ from those in a static setting. The basic statement about the progressivity of the Social Security system is based on the comparison of two measures: economic position as measured by lifetime income or a close approximation, and economic benefits as measured by pension wealth. Pension wealth increases in economic position both because of increases in lifetime contributions and because of differential mortality. If survival increases rapidly enough, pension wealth relative to lifetime contributions could be an increasing function of lifetime income, leading to a regressive system according to this measure. However, the language of "progressive" and "regressive" comes from a simpler situation, one associated with taxation. In that setting consider two people

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1. Author's calculations based on HRS income data.

with the same utility function. One person is more wealthy than the other. Under standard and reasonable assumptions of declining marginal utility of consumption, redistribution from the wealthy person to the poor person increases total utility, and we would call the tax progressive. Redistributing from poor to wealthy would decrease total utility and it would be regressive.

Now consider two periods with two people that have the same within-period utility function. Person A lives one period and has no wealth; person B lives two periods and has some wealth. The interest rate is zero and the subjective time rate of discount is also zero so that person B consumes the same amount each period. If their pension flows are the same, person B has twice the pension wealth as person A. If, to make pension wealth the same for the two people, the pension of B were reduced and the pension of A were increased so as to keep total pension payments constant, the effect on total utility is uncertain. For example, if the initial wealth of B is small relative to pension level, following the redistribution consumption by person B in the first period could be substantially lower than consumption by person A in the first period. Then, because of declining marginal utility, the total utility of person B could decline more than the increase in utility of person A. That is, total utility would be decreased by the apparently progressive redistribution. Unlike the simple within-period example, redistribution to offset mortality differentials could reduce total utility. Of course, under different initial conditions total utility could increase from the redistribution. But, the situation is very different from the simple one-period case where progressive taxation always increases total utility under reasonable assumptions.

The authors do not advocate policies to increase progressivity in the Social Security system based on differential mortality. We do not understand the causal mechanisms behind the correlation between income and survival, but understanding those mechanisms would be an important input when considering policy options. Furthermore, the relationship between income and mortality is not stable across countries, within countries by age, or within countries over time. Thus, any policy aiming to achieve a more equal expected present value of Social Security benefits may require constant adjustment as the relationship between income and mortality changes.

References

Congressional Budget Office (CBO). 2006. Is Social Security progressive? Economic and Budget Issue Brief, December 15. Washington, DC: GPO.

Gustman, A. L., and T. L. Steinmeier. 2001. How effective is redistribution under the Social Security benefit formula? *Journal of Public Economics* 82 (Oct): 1–28.

Harris, A. R., and J. Sabelhaus. 2005. How does differential mortality affect Social Security finances and progressivity? Congressional Budget Office Working Paper no. 2005-5.