

## MODELING LIFETIME EARNINGS PATHS: HYPOTHETICAL VERSUS ACTUAL WORKERS

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Understanding the distributional impact of Social Security benefits and taxes over the lifetime is a subject of growing interest in the policy arena. For instance, the Office of the Chief Actuary (OACT) at Social Security assessed the likely distributional impacts of alternative program reforms according to their effects on three types of hypothetical workers for the 1994-96 Social Security Advisory Council. In 2001, the Commission to Strengthen Social Security requested analysis from the OACT at Social Security to better understand the impact of alternative reform scenarios on low, medium, and high earners. Most recently, the 2003 Technical Panel Report to the Social Security Advisory Board proposed that the Social Security Administration (SSA) generate an annual Benefit Audit, showing how taxes paid and benefits received varied across workers of different types.

For many years, the Social Security Administration has used the Average Wage Index (AWI) as a measure of the average wages of covered workers in the economy. This concept reflects the weighted average of cohort covered earnings for all birth cohorts of workers in a given year. Since it is a group average, the AWI does not match the earnings of any specific birth cohort: That is, it tends to be higher than average earnings early in the worklife of a young cohort, but slightly lower than average later in the worklife. To offer insight into the distributional impact of possible reform scenarios, the SSA also has developed some additional hypothetical worker earnings profiles. For example, it models steady and scaled low, medium, and high average earnings profiles derived from the SSA's Average Wage Index (AWI). It is interesting that this AWI concept was actually developed for benefit determination rather than for distributional analysis. As a result, it is likely that these hypothetical profiles might not be representative of any particular cohort's employment and earnings experience.

This project uses data from the Health and Retirement Study (HRS), a nationally representative sample of older Americans, to derive actual lifetime earnings profiles for HRS sample members. We use administrative data linked to respondent information on demographic and other characteristics. We then evaluate how well the hypothetical SSA profiles represent actual workers, by comparing the shapes and lifetime averages of the hypothetical low, medium, and high profiles to earnings patterns of actual HRS workers. That is, we map the distribution of HRS earnings to establish where the low, medium, and high SSA hypothetical profiles fall, as compared to workers' actual earnings.

One finding is that the hypothetical profiles do not track actual workers' earnings very closely. For instance, the "steady" earner profile does not mimic the actual experience of many in the HRS sample: more than a third

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of HRS men and women had no covered earnings at some point during their 20s. During their 30s and 40s, roughly 5–7 percent of men had no earnings and the prevalence of zero earnings years for women was much higher, peaking at about 55 percent and never dropping below 20 percent. Comparing AWI profiles to HRS actual workers at the median shows that both the AWI and the medium scaled profiles are higher and flatter than were HRS earnings by cohort, in all years examined. In particular, the hypothetical medium earnings profile was over 50 percent above the median HRS worker's average lifetime earnings. Indeed, the median HRS earner was more similar to the hypothetical low profile than to the medium one.

In another analysis, we restrict the HRS sample to include only respondents with work histories substantial enough to make them insured for Social Security benefits. Here the results show that the medium hypothetical profile is again higher than the median HRS average lifetime earnings. Though the gap is smaller, it is still more than 25 percent. Over a 35-year worklife, the gap adds up to more than \$150,000 (1992 dollars).

In view of current proposals to reform Social Security, it is essential to develop earnings profiles which are representative of the workforce paying taxes to and receiving benefits from the Social Security system. We have shown that SSA hypothetical profiles do not effectively represent actual earnings histories for workers reaching retirement today. The hypothetical profiles are closer to earnings patterns of workers who are insured for retirement benefits under current law, but still the hypothetical earnings profiles overstate real-world earnings patterns. Policymakers are increasingly asked to evaluate policies that will change Social Security program benefit and payroll tax patterns. To address such requests, it appears that they require a more complete view of real-world work and earnings distributions.

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