National Bureau of Economic Research

DISABILITY RESEARCH CENTER
SEPTEMBER 2013

Social Security Forecasts and the Future Health of the American Population

JAYANTHA BHATTACHARYA

Accurate forecasts of Social Security finances depend to a significant extent on future trends in population health. Future longevity is particularly important in forecasting expenditures from the retirement component of Social Security (OASI), while other aspects of health and functional ability are important to Supplemental Security Income (SSI) and Social Security Disability Income (DI) forecasts. Recent changes in the health status of Americans have included both improvements and declines, complicating health forecasts going forward. There is considerable evidence, for instance, that newer cohorts of elderly Americans have become healthier than previous cohorts with declining rates of disability. Rates of smoking and the cancers that it causes have also declined, which makes the population as a whole healthier. At the same time, obesity rates and many chronic diseases associated with it have increased throughout the population, including in particular the near-elderly. Disentangling these competing health trends requires a sophisticated approach to disease and mortality modeling.

In this paper, we apply an updated version of the Future Elderly Model (FEM) to Social Security forecasting. The FEM has been used extensively over the last decade to forecast health and medical spending, as well as the effects of changing medical technology on future expenditures. The parameters underlying the FEM are estimated using large nationally-representative longitudinal databases, including the Health and Retirement Study (HRS) and the Medical Expenditure Panel Survey (MEPS). The FEM provides detailed forecasts for cohorts of Americans 51 years old and above. One key feature of the FEM is its ability to handle the problem of competing risks, where declines in the mortality associated one condition (or increases in the prevalence of that condition) lead mechanically to increases in the mortality and prevalence of other conditions (since dead people cannot develop any new chronic diseases).

We use the FEM to address a key question that all Social Security forecasting models must address – how do different assumptions about secular trends in mortality conditional on health status affect forecasted Social Security participation and expenditures? We begin by estimating a baseline model that is consistent with the OACT model's intermediate assumptions about mortality reductions. We then estimate a model that assumes no future changes in conditional mortality; only changes in the future prevalence of chronic disease drive Social Security expenditure changes. In a third scenario, we assume that conditional mortality reductions will only apply to people above 52 years of age, and that there will be no improvements in conditional mortality for younger incoming cohorts. This is an important scenario because it allows us to explore the relative importance of investments in mortality rate reductions among younger populations on Social Security expenditures.

Our main findings are as follows: First, due to changes in the health status of the American population alone, we project mortality rates to decline in the 51+ population until about 2025, and then rise sharply until about 2050. Second, under all our scenarios, the size of the American 51+ population will increase steadily throughout the coming decades, reaching a total of between 145 and 160 million people (depending on the assumptions about reductions in conditional mortality rates). Third, the age structure of the 51+ population will shift dramatically toward older ages, with the size of the 85+ population in particular experiencing the sharpest growth. Fourth, under all scenarios, diabetes, hypertension, stroke, heart disease and cancer prevalence will increase (in many cases sharply) in the age 51+ population throughout the coming decades. Firth, the proportion of the age 51+ population claiming OASI will increase sharply in the coming decades, reaching a plateau in 2030; OASI expenditures, by contrast, will increase steadily through 2060, reaching between $1.5 trillion and $2 trillion in annual payouts (depending on conditional mortality rate assumptions). Sixth, the proportion the age 51+ population claiming SSI will increase sharply until 2020, and then reach a plateau through 2060. As with OASI payments, SSI payments will increase steadily through 2060, reaching a level of about $50 billion per year for the 51+ population. Seventh, DI participation rates will fall sharply through 2030 and then plateau. Despite this fall, DI expenditures will rise to nearly $100 billion in expenditures for the 51+ population by 2060.

Our finding reinforce the well-accepted sense among demographers that the upcoming decades of the 21st century will impose a steep burden on the federal government to finance Social Security. The FEM highlights the role that the future health of the population will play in a transparent way. Our main, dispiriting, finding is that whether or not medical technology improves or stagnates in its ability to keep chronically ill patients alive, the worsening health of the future elderly population, combined with presently low conditional mortality rates will combine to make the financial position of Social Security worse over the coming decades.

JAYANTHA BHATTACHARYA is an Associate Professor at Stanford University School of Medicine and an NBER Research Associate.

This research was supported by the U.S. Social Security Administration through grant #DRC12000002-01-00 to the National Bureau of Economic Research as part of the SSA Disability Research Consortium. The findings and conclusions expressed are solely those of the author(s) and do not represent the views of SSA, any agency of the Federal Government, or the NBER.