INSTITUTE FOR SOCIAL RESEARCH • SURVEY RESEARCH CENTER
MICHIGAN RETIREMENT RESEARCH CENTER
UNIVERSITY OF MICHIGAN

Promoting research on retirement and Social Security policy

Research Brief 314 | October 2014

The implications of differential trends in mortality for Social Security policy

John Bound, Arline Geronimus, Javier Rodriguez, and Timothy Waidmann *

Increasing the Normal Retirement Age (NRA) is a frequently discussed reform to U.S. Social Security system. Given that life expectancy in the U.S. has increased substantially more than the retirement age since the establishment of the program, raising the normal retirement age further would seem a natural way to relieve financial pressure on the system. Indeed, simple models of optimal retirement policy have the property that individuals should work a constant fraction of their lives. However, one objection that has been raised to increasing the normal retirement age is that increases in life expectancy have not been equally shared across the U.S. population. Past research has demonstrated that in the U.S., mortality rates tend to drop and life expectancy to rise with income, education, and other measures of socioeconomic status. There is also a recent literature that has argued that these differentials have been rising, and one recent study has found that life expectancies have actually decreased for some low-education groups since 1990 (Olshansky et al., 2012).

While it is not hard to understand reasons why higher income, better educated individuals might disproportionately gain from medical advances, significant drops in life expectancy are surprising and largely unprecedented in developed countries outside of periods of large-scale wars. A number of authors have argued that the increased prevalence of such chronic diseases as diabetes foreshadows a drop in life expectancy in the U.S. and other developed countries, and the rise in the prevalence of diabetes has been concentrated amongst the less well educated, but few imagined that dramatic declines had already occurred in subsets of the U.S. population. Given the potential significance of this finding in many arenas, including health and retirement, in this paper we examine the robustness of these results to a number of alternate assumptions.

First, the Olshansky analysis examines mortality at all ages. Because there is no way to meaningfully impute educational attainment for children, and measurement of mortality at very old ages is prone to errors, we restricted our attention to mortality between ages 25 and 84. If life expectancy for those with low levels of education is falling, we would almost certainly observe the phenomenon in this age range. Indeed, we do find that in this range, age-specific mortality rates among non-Hispanic whites with less than a high school education were higher in 2010 than in 1990, and as a result, period life table calculations show a decreased probability of survival to older ages.

Second, because educational attainment in the U.S. increased dramatically during the 20th century, focusing on mortality rates of those with less than a high school education over a 20 year period means looking at a different, and shrinking, segment of the population in each year. As an alternative, we stratify the population by relative educational rank, using

* ***John Bound*** *is the George E Johnson Collegiate Professor of Economics at the University of Michigan and research professor at the Institute for Social Research.* ***Arline Geronimus*** *is a research professor at the Institute for Social Research's Population Studies Center, University of Michigan.* ***Javier Rodriguez*** *is an NICHD postdoctoral fellow at the University of Michigan.* ***Timothy Waidmann*** *is a senior fellow at the Urban Institute. This Research Brief is based on MRRC Working Paper 2014-314.*

historical census data to identify education level that constitutes the 25th percentile of each birth cohort's distribution. Holding rank constant rather than level, we do not find that survival among low-education non-Hispanic whites fell between 1990 and 2010. Rather low-education white men had increases in survival probabilities, and low-education white women had no change between 1990 and 2010. Higher education groups did have greater increases in survival probabilities than low education groups.

All of these analyses, however, rely on the ability to align information on education collected on death certificates with that collected in U.S. Census survey instruments. This presents several difficulties, including changing coding schemes for education over time in both sets of instruments and changing rates of missing education information on death certificates. Additionally, the source of information on death certificates is always a proxy, while census data come from a mix of self and proxy respondents. Research on matched survey and death certificate records by National Center for Health Statistics has shown systematic biases in reporting high school graduation that can have substantial impacts on life table calculations. In order to avoid these issues, we examine changing survival in a different way, not relying on alignment of education information. If the mortality experience of different groups of the non-Hispanic white population are diverging in the way the Olshansky group finds, we should be able to observe changes in the period-life table for the white population as a whole. Specifically, we should see decreases in the probability of survival to younger ages along with increases in the probability of survival to older ages. In Table 1, we present probabilities of survival to age 35,45, 55, 65, 75, and 85 in 1990 and 2010. While we do find a very small decrease in the probability that a white woman survives to ages 35, 45, and 55, along with much bigger increases in probabilities at older ages, it is difficult to believe that this finding could be classified as a substantial decrease in life expectancy for a segment of this population. Among white men, we find that survival probabilities increase at each of these ages.

Table 1: Probability of Survival to specific ages among non-Hispanic white women and men, conditional on survival to age 25

	White Women		White Men	
Age	**1990**	**2010**	**1990**	**2010**
35	0.994	0.993	0.984	0.985
45	0.983	0.980	0.960	0.964
55	0.954	0.950	0.911	0.916
65	0.881	0.889	0.791	0.820
75	0.730	0.755	0.565	0.644
85	0.445	0.489	0.247	0.349

Taken together, these findings suggest that care should be taken in interpreting evidence of falling life expectancy among low SES groups. However, it does appear that low SES groups are not sharing equally in improving mortality conditions, which raises concerns about the differential impacts of policies that would raise retirement ages uniformly in response to average increases in life expectancy.

Reference

Olshansky, S Jay, Toni Antonucci, Lisa Berkman, Robert H Binstock, Axel Boersch-Supan, John T Cacioppo, Bruce A Carnes, Laura L Carstensen, Linda P Fried, Dana P Goldman, James Jackson, Martin Kohli, John Rother, Yuhui Zheng, and John Rowe. 2012. "Differences in Life Expectancy due to Race and Educational Differences Are Widening, and Many May Not Catch up." H*ealth Affairs* 31 (8): 1803–13.

University of Michigan Retirement Research Center
Institute for Social Research 426 Thompson Street Room 3026
Ann Arbor, MI 48104-2321 Phone: (734) 615-0422 Fax: (734) 615-2180
mrrcumich@umich.edu www.mrrc.isr.umich.edu

Sponsor Information: The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) through the Michigan Retirement Research Center (MRRC). 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 MRRC.