

# Resetting Social Security

*S. Jay Olshansky, Dana P. Goldman & John W. Rowe*

*Abstract: Social Security retirement benefits were first introduced in 1935 as a financial safety net for a large and rapidly growing older American population. The program was intended to be economically self-sustaining, but population aging and rising life expectancies threaten the program's solvency. The 1983 Social Security Amendments mandated that the full retirement age increase to 67 by the year 2027. In this essay, we present evidence demonstrating that the rate of improvement in life extension at older ages accelerated after 1983. If the 1935 ratio of working years to retired years is maintained, early and full retirement ages of 66.5 and 69.4, respectively, were justified in 2009. Additional delays in the age of eligibility beyond those currently in effect would place significant financial burdens on individuals with lower life expectancies, the poor and near-poor, and the very old, and – absent additional reform – would exacerbate existing unequal access to entitlements within the system.*

In the future when there are a great many persons over 65, most of the able-bodied individuals will and should continue working to age 70 or 75 if their services seem needed.

– Robert J. Myers, Chief Actuary (1947 – 1970) and Deputy Commissioner (1981 – 1982) of the Social Security Administration (SSA) and leader of the National Commission on Social Security Reform (1982 – 1983)<sup>1</sup>

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(\*See endnotes for complete contributor biographies.)

Has the time arrived to reset the age of eligibility for Social Security retirement benefits? When President Roosevelt signed the Social Security Act (SSA) in 1935 in the wake of the Great Depression, unemployment was 34 percent, savings accounts were decimated, and almost 50 percent of the older population was dependent on family and friends for financial support. There was reason to believe large segments of the population – particularly the elderly – were facing destitution.<sup>2</sup>

To address this concern, the Committee on Economic Security was established by executive order in 1934. What we know today as Social Security began simply as a federally administered social insurance retirement program for older people, nominally financed through payroll taxes and paid for by work-

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ers and their employers. As the program was originally structured by the Social Security Act of 1935, people would earn benefits as they continued to work. If death occurred before age sixty-five, or before they received what they paid into the system even after retirement, their estate would receive the difference plus interest in the form of a one-time lump-sum payment. At the program's inception, no benefits were provided to spouses or children.

Although Social Security was originally designed to protect a limited number of American workers against loss of earnings, President Roosevelt indicated from the start that the program was expected to grow and evolve with changing economic and demographic conditions.<sup>3</sup> The first study published by the Office of the Actuary at the Social Security Board claimed that "when it is realized that too large a proportion of the population would probably be left idle with a retirement age of 65, the general feeling will undoubtedly be that a constant retirement age should be banished, or that it should be left as a balancing item."<sup>4</sup> A subsequent publication by Robert J. Myers, Chief Actuary and Deputy Commissioner of the SSA – from which we quote in our epigraph – made a more forceful statement about raising the Social Security Retirement age.<sup>5</sup>

Social Security has evolved extensively since its inception. While the program is best known for providing financial assistance to retirees, amendments to the program also added life insurance, payments for spouses and dependents, and disability benefits for those who are unable to work but are not yet eligible by age for regular benefits. The first significant change to the program was introduced in 1939, when Congress passed amendments to change the financing of the program so that workers paid into Social Security incrementally as they worked, allowing for immediate payments of benefits without increasing

Social Security tax rates.<sup>6</sup> Coverage was also extended to dependents of retired workers or workers who died prematurely. In 1948, benefits to dependents, survivors, and those with severe and long-lasting disability were increased or extended and coverage was expanded considerably.<sup>7</sup> In 1950, a revised schedule of gradual increases in tax rates for employers and employees was implemented to increase the likelihood that Social Security would remain self-supporting; coverage was also extended to several additional major categories of workers such as farmers and government workers.<sup>8</sup> Legislation in 1954 and 1956 extended coverage to 90 percent of all workers, and coverage became nearly universal in the early 1960s.<sup>9</sup> The eligibility age for Social Security was reduced from age 65 to age 62 for women in 1956 and for men in 1961, and automatic cost-of-living adjustments were authorized in 1972.<sup>10</sup> Finally, in direct response to gains in life expectancy and improvements in health (increases in active and disability-free – or what we prefer to call "healthy" – life expectancy) since the program began, amendments approved in 1983 authorized gradual increases in the age of full eligibility for workers born after 1937, with provisions fully effective for all workers born after 1959.<sup>11</sup>

These amendments gradually increased the age of eligibility for full Social Security benefits from 65 to 67 and lowered the benefits for those who choose to begin receiving them early (between 62 and the full retirement age). There have been no longevity- or health-related adjustments to the retirement age since 1983. It is also important to emphasize that, today, approximately 72 percent of new beneficiaries draw benefits before the full retirement age and 46 percent draw benefits at the earliest possible age of 62.<sup>12</sup> Despite the program's evolution, therefore, the question remains whether eligibility changes have kept pace with the substantial gains in life expect-

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tancy and healthy life expectancy that have occurred since the program's inception and, indeed, since the last retirement-age adjustment in 1983.

The current debate about raising the age of first eligibility above 62 and the age of full-benefit eligibility above 67 has been driven by a combination of factors, including: financial stress placed on the solvency of the Social Security trust fund by a much larger number of beneficiaries than anticipated (in turn caused by an unexpected baby boom and larger-than-anticipated increases in life expectancy); a substantial proportion of beneficiaries who elect early benefits; political reluctance to increase payroll taxes; and a growing number of very long-living older people who depend fully or nearly so on Social Security (called "longevity risk"). Today, two-thirds of beneficiaries rely on Social Security for more than half of their total income, and 25 percent rely on it for over 90 percent of their total income.<sup>13</sup> The shift toward retirees relying fully on the program for financial support was neither anticipated nor intended at the program's inception.

Taken together, these considerations lead to the four central questions we address in this essay:

1) How well did the two-year increase in eligibility age for full retirement benefits from the 1983 amendments correspond to the proportional rise in life expectancy at age 65 from 1935 to 1983?

2) From a demographic perspective, does the rise in life expectancy at older ages observed since 1983 warrant a further adjustment to the age of eligibility for early and full Social Security benefits?

3) How would subgroups of the U.S. population with different survival prospects be differentially influenced by further increases in the age of early and full retirement ages?

4) And what would the early and full retirement ages be today if they had been

indexed directly to rising life expectancy since the program's inception, maintaining a constant proportion of adult life spent working to life spent in retirement?<sup>14</sup>

Improvements in health care and increases in well-being at older ages have accelerated in the United States since Social Security began in 1935 with a set retirement age of 65. At that time, the average expected remaining years of life for someone reaching age 65 – notated as  $e_{(65)}$  – for men and women combined in the United States was 12.6 years, and the probability of surviving to age 65 (averaged for men and women) conditional on having survived to age 25 (referred to as "conditional survival") was 62.4 percent (Table 1). By 1983,  $e_{(65)}$  for the total population had risen to 16.6 years (meaning that each year during this time frame, 30 days were added to the life of a person reaching 65 years of age), while conditional survival to age 65 rose to 79.4 percent. Between 1983 and 2009, life expectancy past 65 rose an additional 2.3 years to 18.9, which means that the annual increase in life expectancy accelerated to 31.8 extra days added to the life of a 65-year-old per year; conditional survival to age 65 also increased to 84.8 percent between 1983 and 2009.

Since many beneficiaries now retire at the earliest possible retirement age of 62, it is worth noting that  $e_{(62)}$  increased by 4.3 years between 1935 and 1983, and by 2.5 years between 1983 and 2009 (see Table 1). This means 32 additional days of life were added each year to those reaching age 62 from 1935 to 1983, and 35.2 additional days of life were added each year for those reaching age 62 from 1983 to 2009.

Conditional survival to the full Social Security retirement age of 65 varies considerably by sex and level of completed education; trends in conditional survival between 1990 and 2008 reveal large differences among population subgroups (Table 2).

**Table 1**  
U.S. Life Expectancy at Age 62 [ $e_{(62)}$ ], Life Expectancy at Age 65 [ $e_{(65)}$ ], and  
Conditional Survival from Age 25 to Age 65 [ $S_{(25-65)}$ ], by Sex; 1935, 1983, 2009

	$e_{(62)}$			$e_{(65)}$			$S_{(25-65)}$		
	M	F	T	M	F	T	M	F	T
1935	13.6	15.1	14.4	11.9	13.2	12.6	59.5	67.3	63.3
1983	16.3	20.9	18.7	14.3	18.6	16.6	74.8	85.7	80.2
2009	19.7	22.6	21.2	17.5	19.9	18.9	81.9	88.7	85.3

M = Male; F = Female; T = Total (average). Source: U.S. Social Security Administration, Historical Life Tables developed by the Office of the Chief Actuary for use in estimates and analysis in *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (2014); see <http://www.ssa.gov/oact/TR/2013/tr2013.pdf>.

**Table 2**  
Percent of Total U.S. Population Surviving to Age 65 Conditional on Having Survived to Age 25,  
by Level of Completed Education; 1990, 2008

	Years of Education at Age 25			
	<12	12	13-15	16+
1990	75.7	78.3	88.1	86.0
2008	74.4	78.7	89.2	92.1

Source: Calculations done by the MacArthur Foundation Research Network on an Aging Society.

In 1990, only 75.7 percent of 25-year-old men and women with less than a high school education were expected to reach age 65. In contrast, about 87 percent of the most highly educated 25-year-olds in that year were expected to survive to age 65. In 2008, the least educated experienced a slight reduction in survival to age 65 (down to 74.4 percent) while the most highly educated experienced a significant additional improvement (to 92.1 percent). Conditional survival increased from 1990 through 2008 as a function of level of completed education; the biggest jump in survival occurred among those who have any college education. Thus, 25.6 percent of the least educated subgroup of the population will

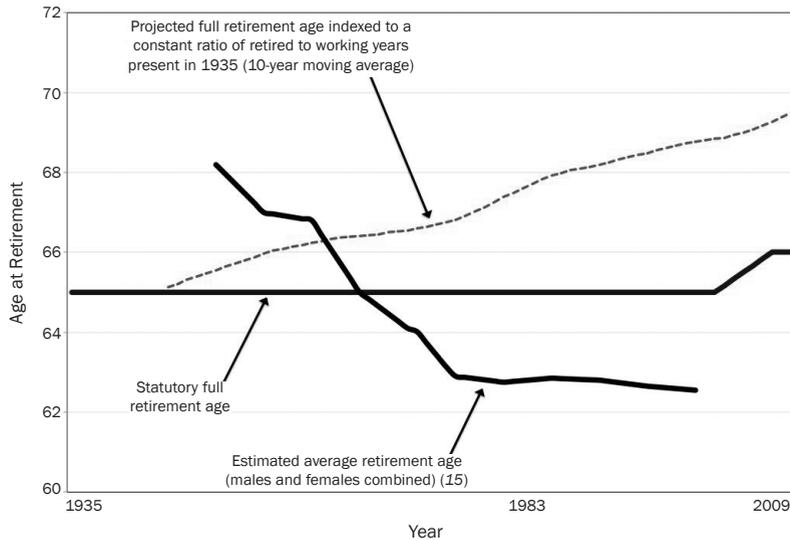
not live long enough to draw retirement benefits from Social Security at current eligibility ages. In contrast, only 5.9 percent of the most educated group will die before the early retirement age.

The observed full retirement age of 67 mandated in 1983 will not be implemented until 2027. If the full retirement age had been indexed exclusively to  $e_{(65)}$  (that is, if the full retirement age was raised in proportion to the increase in life expectancy at age 65 using a 10-year moving average), a full retirement age of 67.7 would have been justified in 1983 (see Figure 1). If the full retirement age was indexed again in 2009 to life expectancy at age 65, a full retirement age of 69.4 would have been justified. And

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Projected Full Retirement Age (Based on a 10-Year Moving Average) Indexed to a Constant Ratio of Retired to Working Years Present in 1935, Statutory Full Retirement Age (United States, 1935–2009), and Estimated Average Retirement Age for Males and Females Combined (United States, 1950–2005)



Source: M. Gendell, "Retirement Age Declines Again in 1990s," *Monthly Labor Review* 124 (2001): 12–21.

if in 2009 the full retirement age had been indexed to either observed life expectancy at birth or conditional survival to age 65, a full retirement age above 70 would be justified. The indexed full retirement ages have not only been falling further behind the statutory retirement age every year since 1935 (a difference whose growth accelerated after 1983), but the actual (estimated) average age at full retirement in the United States has been steadily declining well below both the indexed and statutory full retirement ages ever since 1965.

Along the same lines, indexing the early retirement age to the rise in life expectancy after age 62 (using a ten-year moving average) observed since 1956 (when the amendment lowering age of eligibility to age 62 was first enacted for women) would have justified an early retirement age of 64.8 in 1983 and 66.5 in 2009 (see Figure 2). The in-

dexed early retirement age has also fallen further behind the statutory early retirement age every year since it began in 1956, and this too accelerated after 1983.

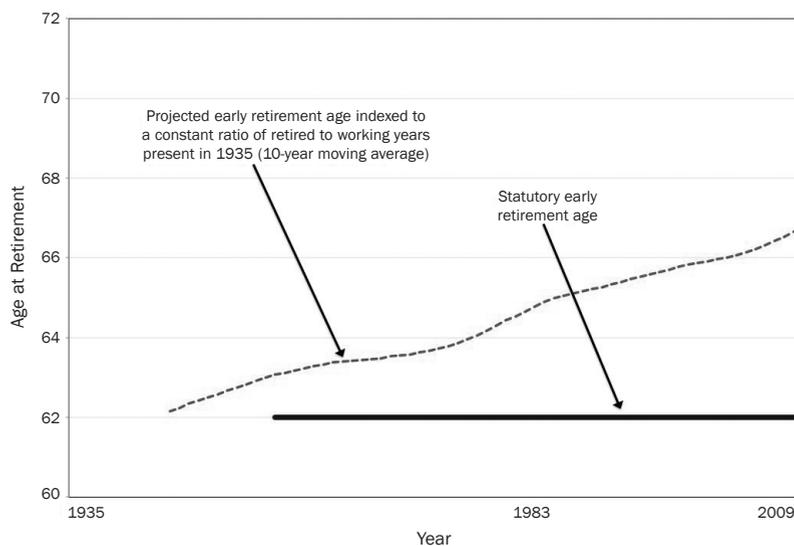
The full retirement age for Social Security is currently applied equally to almost everyone in the population, regardless of individual attributes that differentially influence survival prospects or monetary contributions and expenses. How would the retirement age vary if it were linked to the observed longevity attributes of population subgroups? Here, we use the example of education attainment (the latest data available are for 2008).

If the full retirement age had been indexed in 2008 to  $e_{(65)}$  for population subgroups demarcated by level of completed education (relative to the standard that existed for the total population in 1935), the full retirement age in 2008 would have

Figure 2

Projected Early Retirement Age (Based on a 10-Year Moving Average) Indexed to a Constant Ratio of Retired to Working Years Present in 1935 (United States, 1935 – 2009), and Statutory Early Retirement Age (1956 – 2009)

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Source: Figure prepared based on Social Security Administration life tables.

been 68.8 for the least educated and 71.8 for the most educated. The early retirement age would have been 66.1 for the least educated and 69.6 for the most educated.

Another consideration that is often raised in the retirement-age debate is the possibility of “correcting” for enhancements in life expectancy through stabilization of the ratio of years working to years retired.<sup>15</sup> In 1935, assuming a full retirement age of 65, the population aged 20 and older spent 78 percent of its remaining life working. If we were to hold this ratio of working to retired years constant and index the full retirement age to rising life expectancy at age 65, the full retirement age would have been 69.1 years in 2009 (based on a ten-year moving average in life expectancy after 65; see Figure 1). Assuming an early retirement age of 62, the over-20 population in 1935 spent 74 percent of their remaining life working; and the anal-

ysis above, conducted in 2004, would have yielded an early retirement age of 66.3.

When determining the full Social Security retirement age in 1935, the Council on Economic Security (CES) based the figure of 65 on retirement ages commonly used in private pension systems of the time. About half of state retirement schemes used 65 as the retirement age, while the other half used 70. The CES settled on age 65 in part due to actuarial life tables suggesting that the lower age would yield a manageable self-sustaining system based on modest levels of payroll taxation.<sup>16</sup> The question now is not whether the most appropriate retirement age was chosen in 1935, but what the appropriate ages would be from a demographic perspective if the ages for early and full retirement were adjusted to how long we actually live.

When the SSA was passed into law in 1935, government actuaries were acutely aware of the forthcoming demographic shift of population aging, and they anticipated not only an increase in the size of the beneficiary population, but also a rise in longevity, improved survival rates to age 65, and improvements in health.<sup>17</sup> One actuarial report even mentions how aging science could, in the future, delay senility and prolong life far beyond what the SSA then considered a normal lifespan.<sup>18</sup> However, their initial predictions were still too conservative. Population projections initially generated by SSA actuaries anticipated that the proportion of the total U.S. population aged 65 and older would never exceed 15 percent.<sup>19</sup> As of 2014, it is 14 percent, but it is expected to rise up to 20 percent by mid-century.<sup>20</sup> It was also projected that 20 million beneficiaries (at the very most) would ever draw benefits from Social Security after the year 2000;<sup>21</sup> and that the size of the 65-and-older population in the United States would peak at about 31 million in 2025 (under the most optimistic mortality scenario).<sup>22</sup> Today, there are more than 43 million people in the United States aged 65 and older.<sup>23</sup> Furthermore, Social Security was originally envisioned as a supplementary form of retirement income designed as a safeguard against destitution; it was never anticipated that so many people would become fully financially dependent on the program.

With these demographic shifts in mind, we will summarize some of our findings and answer the questions raised in the introduction.

1) *How well did the two-year increase in eligibility age for full retirement benefits from the 1983 amendments correspond to the proportional rise in life expectancy from 1935 to 1983?* Evidence presented here indicates that the 1983 amendments raising the full retirement age to 67 effectively anticipated the increase in longevity since 1935, but

because the change in retirement age did not begin to take effect until 2006 and the full increase to 67 will not be realized until 2027, the implementation of the change was too slow.

2) *Does the rise in life expectancy at older ages observed since 1983 warrant a further adjustment to the age of eligibility for early and full Social Security benefits, and if so, what would they be?* Evidence indicates that the rate of improvement in survival past age 65 accelerated between 1983 and 2009, and does warrant an actuarially justified full retirement age (based on a 10-year moving average) of 69.4 and an early retirement age of 66.5 in 2009.

3) *How would subgroups of the U.S. population with diverse survival prospects be differentially influenced by further increases in early and full retirement ages?* Social Security retirement benefits are made available to everyone that contributed to the program over a sufficient period of employment. The amount paid out to beneficiaries is linked to their level of contribution, but there is a cap on the maximum and a floor on the minimum amount that they can receive. Although the age at which Social Security retirement outlays may begin is not influenced by gender, occupation, level of completed education, or health status, all of these attributes (and others) create considerable variation in both the prospect of living long enough to reach retirement ages, and how many years of life people have remaining after retirement.

By way of example, of those who began working at age 25 in the United States in 2009, 88.8 percent of women and 81.3 percent of men are projected to survive to age 65. Of those, 32.6 percent of women and 19.5 percent of men will reach their ninetieth birthday.<sup>24</sup> At opposite ends of the longevity spectrum, about 32 percent of men with less than a high school education will die before age 65, whereas only

6 percent of women with a college degree will die before age 65 (as of 2008).<sup>25</sup>

When the Social Security full-retirement age of 65 was chosen in 1935, it was based on the observed longevity experience of the white population in the United States – the subgroup with the highest life expectancy.<sup>26</sup> Although this was done to create the most favorable payout to retirees, it also created an immediate disparity for the nonwhite working population as well as for populations of all races with less than twelve years of education and/or in poverty: fewer members of these population subgroups were expected to live long enough to retire, and those that did reach retirement had shorter post-retirement life expectancies. Although the size of this less educated subgroup has been declining in the United States since 1935, the “retirement-benefit disparity” has been rising because the longevity of the most educated has been increasing at a faster pace than that of the least educated.<sup>27</sup>

Any increases in the early and full retirement ages (including those already being implemented under the 1983 amendments) exacerbate economic disadvantage among those less likely to reach retirement ages – a disadvantage that continues after retirement, since those with shorter survival prospects will draw benefits for less time. One strategy to compensate for this effect would be to enhance the disability program so that individuals who are unable to work and are caught in the lengthy process of applying for disability as they reach age 62 (when they would have received retirement benefits) could more quickly and easily receive disability payments.

The criteria that served as the basis for raising the full retirement age in 1983 were improved longevity and health. However, healthy life expectancy did not become a routinely reported vital statistic in the United States until the 1970s, so it is difficult to make a definitive claim about how

healthy life expectancy has changed over time.<sup>28</sup> Nonetheless, this much is clear: many more people survive to age 65 today than did in 1935; the observed increase in the benefit-collecting population is far greater than originally anticipated; those reaching ages 65 and older are now living much longer than was ever thought possible; and there has been a notable increase in healthy life expectancy by people reaching older ages today relative to any other generation in American history.<sup>29</sup>

There is no formula currently available to utilize health-related data to guide further adjustments to the full and early retirement ages; and even if there were, it would be difficult to create policy responsive to the fact that people move in and out of states of health and disability as they age. Currently, if healthy life expectancy were used in any way to guide adjustments to the retirement ages, they could only support increases above those already defensible from rising longevity alone (see Figures 1 and 2). However, any formula linking improved health to increases in the early and full retirement ages should also take into account the possibility that the health of the population in general, and future older cohorts in particular, could grow worse in the coming decades.<sup>30</sup>

4) *What would the early and full retirement ages be today had they been indexed directly to rising life expectancy since Social Security's inception, holding constant the 1935 proportion of adult life spent working to life in retirement?* We have determined that an early retirement age of 66.5 and a full retirement age of 69.4 are justified based on today's life expectancy. The idea of indexing the future retirement age to observed life expectancy and the ratio of retired to working years has appeared in European and U.S. academic and government publications.<sup>31</sup> The Commission on Fiscal Responsibility and Reform (Simpson-Bowles) recently recommended that the full retirement

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age be gradually raised to 68 by 2050 and to 69 by 2075; and that the early retirement age be raised to 63 and 64, accordingly. This would be accomplished by increasing the retirement age by 1 month every 2 years, beginning in 2027 when the current set of increases expire.

Estimates of the linkage between survival and retirement ages provided here indicate that the proposal by the Simpson-Bowles Commission underestimated the magnitude of the increase in the retirement ages required to keep up with observed longevity. The Commission's proposed full retirement ages of 68 for 2050 and 69 for 2075 should have been instated in 1987 and 2005, respectively, according to our analysis. The Commission's proposed early retirement ages of 63 for 2050 and 64 for 2075 should have gone into effect in 1955 and 1976, respectively. The rise in life expectancy already observed for the U.S. population from 1935 to 2009 indicates that the early and full retirement ages *today* should be well above the retirement ages proposed by the Commission to occur some sixty-one years from now.

Our conclusions about resetting the early and full retirement ages for Social Security are based exclusively on actual changes in longevity observed since 1935 and do not reflect an economic or political analysis. Using only the two criteria for determining age at full retirement that were considered by the Council on Economic Security in 1935 – actuarial justification and financial soundness of the program – we find that there is now justification to reset the early and full Social Security retirement ages several years higher than they currently are. Using the two criteria of improved longevity and health since the 1983 amendments as the basis for adjusting retirement ages, there is further justification for such a change. Such modifications in eligibility age would be consistent with the vision

of the early actuarial advisors for the program, who foresaw that the retirement age would evolve in response to changing demographic, health, and economic conditions; the modifications we suggest are also consistent with the observed retirement ages of half of the states that had retirement laws in effect as far back as 1935.

In short, in order for retirement ages to “catch up” to observed levels of longevity in the United States (improvements in health notwithstanding), an adjustment to the 1983 amendments would be required. Delays in both the full and early retirement age of five months per year would be required, beginning in 2015 and continuing for thirty years.

However, as unambiguous as the actuarial and health-related justifications are, further research on the circumstances surrounding aging and retirement is necessary, including social, economic, and political analyses. We acknowledge that any additional delay in the age of eligibility beyond those already in effect from the 1983 amendments would place a significant new financial burden on subgroups of the population and exacerbate dramatically the unequal access to entitlements that is already present in the system.<sup>32</sup> There are numerous other ways in which the Social Security trust fund can be made solvent for future generations, including increased taxes and revenues and reductions in benefits. Equally important, the progressivity of our safety net cannot be viewed through the lens of just one program. Reforming retirement programs might also necessitate changes in disability assistance and programs such as the Affordable Care Act and Medicare. Whatever the policy solution, this analysis highlights the impact that changing longevity can have on the progressivity and durability of government assistance.

ENDNOTES

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- 1 Robert J. Myers, "A Comparison of Dependent and Productive Groups in Various Populations," Actuarial Study No. 2, Office of the Actuary, Social Security Board, 1938, 18.
  - 2 Martha A. McSteen, "Fifty Years of Social Security," U.S. Social Security Administration, 2014, <http://www.ssa.gov/history/50mm2.html>.
  - 3 Ibid.
  - 4 W. R. Williamson and Robert J. Myers, "Cost Estimate for Various Modifications of the Old-Age Insurance Benefits under Title II Suggested to the Social Security Board," Actuarial Study No. 1, Office of the Actuary, Social Security Board, 1937, 8.
  - 5 Myers, "A Comparison of Dependent and Productive Groups in Various Populations," 18.
  - 6 McSteen, "Fifty Years of Social Security."
  - 7 Ibid.
  - 8 Ibid.
  - 9 Ibid.
  - 10 Ibid.
  - 11 U.S. Social Security Administration, "Social Security Fact Sheet: Increase in Retirement Age," 2014, <http://www.ssa.gov/pressoffice/IncRetAge.html>.
  - 12 Eric Kingson and Monique Morrissey, "Can Workers Offset Social Security Cuts by Working Longer?" Economic Policy Institute Briefing Paper No. 343, 2012, <http://www.epi.org/publication/bp343-social-security-retirement-age/>.
  - 13 U.S. Social Security Administration, "Basic Facts," <http://www.ssa.gov/news/press/basicfact.html>
  - 14 Life expectancy and survival estimates for males and females in the United States in 1935, 1983, and 2009 used in this essay are based on life tables developed by the Office of the Chief Actuary, <http://www.ssa.gov/oact/TR/2013/tr2013.pdf>. Life expectancy and survival estimates for the U.S. population in 2008 by age, sex, and level of completed education were drawn from complete life tables derived from the research of the MacArthur Foundation Research Network on an Aging Society. See S. Jay Olshansky, 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, "Differences in Life Expectancy Due to Race and Educational Differences are Widening, and Many May Not Catch Up," *Health Affairs* 31 (8) (2012): 1803–1813. These tables were generated from the Centers for Disease Control and Prevention, National Center for Health

Statistics, Mortality Multiple Cause Files – 2008, [http://www.cdc.gov/nchs/data\\_access/vitalstatsonline.htm](http://www.cdc.gov/nchs/data_access/vitalstatsonline.htm). Estimates of the early and full retirement ages indexed to rising life expectancy since the program’s inception, holding constant the 1935 proportion of adult life spent working to years in retirement, were generated with the following formulas:

$$R_{(e,x)} = 20 + ((42 + e_{(62,x)}) * 0.7438)$$

Where  $R_{(e,x)}$  = forecast of early retirement age in year  $x$ ;

20 = conditional survival to age 20;

42 = years working, defined as early retirement age (62) minus age at which work begins (age 20);

$e_{(62,x)}$  = life expectancy at age 62 in year  $x$ ; and

0.7438 = the proportion of life after age 20 in 1935 spent working, assuming early retirement occurred at age 62.

$$\text{And } R_{(f,x)} = 20 + ((45 + e_{(65,x)}) * 0.7802)$$

Where  $R_{(f,x)}$  = forecast of early retirement age in year  $x$ ;

20 = conditional survival to age 20;

45 = years working, defined as full retirement age (65) minus age at which work begins (age 20);

$e_{(65,x)}$  = life expectancy at age 65 in year  $x$ ; and

0.7802 = the proportion of life after age 20 in 1935 spent working, assuming a full retirement occurred at age 65.

- 15 Axel Boersch-Supan, “Rational Pension Reform,” *The Geneva Papers* 32 (2012): 430 – 446, doi: 10.1057/palgrave.gpp.2510149; and National Commission on Fiscal Responsibility and Reform, “The Moment of Truth,” 2010, [http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12\\_1\\_2010.pdf](http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf).
- 16 U.S. Social Security Administration, “Age 65 Retirement, The German Precedent,” <http://www.socialsecurity.gov/history/age65.html> (accessed February 12, 2015).
- 17 Myers, “A Comparison of Dependent and Productive Groups in Various Populations.”
- 18 L. O. Shudde and G. E. Immerwahr, “Old-Age and Survivors Insurance: Analysis of Long-Range Cost Factors,” U.S. Social Security Administration, Actuarial Study No. 21, 1946.
- 19 Myers, “A Comparison of Dependent and Productive Groups in Various Populations.”
- 20 U.S. Department of Health and Human Services, Administration for Community Living, “Administration on Aging (AOA): Projected Future Growth of the Older Population,” 2014, [http://www.aoa.gov/Aging\\_Statistics/future\\_growth/future\\_growth.aspx](http://www.aoa.gov/Aging_Statistics/future_growth/future_growth.aspx).
- 21 Robert J. Myers, “New Cost Estimates for the Old-Age and Survivors Insurance System, with the Assumption of a Static Future Wage Level,” U.S. Social Security Administration, Actuarial Study No. 17, 1942.
- 22 Robert J. Myers, “Illustrative U.S. Population Projections, 1946,” U.S. Social Security Administration, Actuarial Study No. 24, 1948.
- 23 U.S. Department of Health and Human Services, Administration for Community Living, “Administration on Aging (AOA): Projected Future Growth of the Older Population.”
- 24 U.S. Social Security Administration, Historical Life Tables developed by the Office of the Chief Actuary for use in estimates and analysis in *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (2014); see <http://www.ssa.gov/oact/TR/2013/tr2013.pdf>.
- 25 Olshansky et al., “Differences in Life Expectancy Due to Race and Educational Differences are Widening, and Many May Not Catch Up.”
- 26 Robert J. Myers, “An Analysis of Benefits and the Progress of the Old-Age Reserve Account under Title II of the Social Security Act,” U.S. Social Security Administration, Actuarial Study No. 8, 1938.

- 27 Olshansky et al., “Differences in Life Expectancy Due to Race and Educational Differences are Widening, and Many May Not Catch Up.” *S. Jay Olshansky, Dana P. Goldman & John W. Rowe*
- 28 Eileen M. Crimmins and Yasuhiko Saito, “Trends in Healthy Life Expectancy in the United States, 1970 – 1990: Gender, Racial, and Educational Differences,” *Social Science and Medicine* 52 (2001): 1629 – 1641.
- 29 Vicki Freedman, Brenda Spillman, Patti Andreski, Jennifer C. Cornman, Eileen Crimmins, Ellen Kramarow, James Lubitz, Linda Martin, Sharon Merkin, Robert F. Schoeni, Teresa Seeman, and Timothy Waidmann, “Trends in Late-Life Activity Limitations in the United States: An Update from Five National Surveys,” *Demography* 50 (2) (2013): 661 – 671.
- 30 Crimmins and Saito, “Trends in Healthy Life Expectancy in the United States, 1970 – 1990”; and Olshansky et al., “Differences in Life Expectancy Due to Race and Educational Differences are Widening, and Many May Not Catch Up.”
- 31 National Commission on Fiscal Responsibility and Reform, “The Moment of Truth”; and Boersch-Supan, “Rational Pension Reform.”
- 32 Anna Zajacova, Jennifer Karas Montez, and Pamela Herd, “Socioeconomic Disparities in Health Among Older Adults and the Implications for the Retirement Age Debate: A Brief Report,” *The Journals of Gerontology: Psychological Sciences & Social Sciences* 69 (6) (2014): 973 – 978.