

ARE OLDER WORKERS CAPABLE OF WORKING LONGER?

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Introduction

Working longer is a key to securing a comfortable retirement. However, disabilities can push older workers out of the labor force before their intended retirement date. Until 2010, the trend of rising disability-free life expectancy in the United States suggested increasing capacity for longer working lives, but recent developments may have stalled this progress.

This *brief*, based on a new study, examines trends in: 1) mortality; 2) institutionalization (e.g., incarceration); and 3) work-limiting disabilities. Using data for 2000-2018, it then determines how long individuals can expect to keep working, and how these expectations vary by race and education.¹

The discussion proceeds as follows. The first section provides the background, and the second describes the data and methodology for the analysis. The third section estimates working life expectancy at age 50 by gender. The fourth section repeats the calculations by race and education. The fifth section presents simulations showing the probability that individuals can continue to work to 67 or 70. The final section concludes that the trends suggest cause for concern. While working life expectancy has improved among the more highly educated, lower-educated individuals – with the exception of Black women – have

experienced stagnation. This pattern suggests that calls for older workers to delay retirement, which have proved successful over the past couple of decades, may be less fruitful going forward.

Background

The main question is how long people will be able to work and how this capability varies by gender, race, and education. Recent trends suggest prior progress may have stalled. Both self-reported and objective measures of health have worsened over the past two decades, particularly for those without a college degree.² At the same time, the separate trend of rising educational attainment, which helped spur past improvements in disability-free life expectancy, has largely played out.³

Adding to worries about the work ability of low-education individuals, particularly Black individuals, are rising incarceration rates. While these rates fell for younger men over the period 2000-2016, they continued to increase among middle-aged men, reflecting the rise in incarceration of younger men in years past.

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Finally, trends in mortality among the working-age population are also not encouraging. Although life expectancy has risen across the population over the past several decades, the gains have mostly occurred at older ages, when individuals are well past retirement age. More troubling, recent studies have even found a decline in prime-age life expectancy among less-educated whites.⁴

This analysis brings together these disparate trends in mortality, institutionalization, and work-limiting disability to estimate “working life expectancy” – the additional years of work ability an individual can expect at a given age.

Data and Methodology

The calculation of working life expectancy requires data on: 1) the probability of dying; 2) the probability of being institutionalized; and 3) the probability of having work-limiting disabilities in the non-institutionalized population.⁵ The *National Vital Statistics System* (NVSS) gives the number of deaths by gender, race, and education group. The *American Community Survey* (ACS) has data on the total population for each group as well as the institutionalized population. The *National Health Interview Survey* (NHIS) provides information on work-limiting disability rates for each population group.

To estimate working life expectancy for different demographic groups, it is first necessary to define them. Race and gender follow the U.S. Census Bureau definitions; the analysis focuses on non-Hispanic white and Black men and women. However, defining education groups involves some discretion. First, the ACS is used to determine the median level of education for each gender-race-cohort group.⁶ Next, individuals in each dataset are classified as above or below the median education level for their demographic group. Those *with* the median education level need to be split between these two categories. For example, if “some college” is the median level for a given group, the individuals with some college are randomly assigned so that half of *all* people end up in each category.⁷

The components for calculating working life expectancy are estimated for each five-year age bracket after age 50 and for each demographic group.⁸ These methods produce three sets of probabilities: being alive, not entering an institution, and not developing

a work-limiting disability. Next, estimating the probability of being able to work at a given age involves multiplying these three probabilities together.⁹ Finally, working life expectancy, conditional on current age, is the sum of this product over all future years.

Results for the Full Population

Recent trends in life expectancy show some improvement overall. From 2006-2018, life expectancy at age 50 increased by about one year for both men and women (see Table 1).

TABLE 1. PERIOD LIFE EXPECTANCY AT AGE 50 BY GENDER, 2006-2018

Year	Men	Women
2006	28.6	32.5
2018	29.8	33.6

Sources: Authors' calculations using *American Community Survey* (ACS) (2006-2018) and *National Vital Statistics System* (NVSS) (2006-2018).

In terms of institutionalization, the rates generally declined for women in their 50s and 60s, but increased for men (see Table 2). This pattern likely reflects the increasing prevalence of long prison sentences in the last few decades, which are imposed primarily on younger men who then reach their 50s and 60s in correctional institutions.¹⁰

TABLE 2. PERCENTAGE OF POPULATION INSTITUTIONALIZED BY GENDER, 2006 AND 2018

Age group	Men		Women	
	2006	2018	2006	2018
50-54	1.26%	1.76%	0.30%	0.33%
55-59	1.04	1.54	0.39	0.33
60-64	1.00	1.27	0.61	0.49
65-69	1.23	1.26	0.93	0.73

Source: Authors' calculations using ACS (2006-2018).

In terms of work-limiting disability, rates have held relatively steady in recent years within specific age groups, with overall disability rates rising with age as expected (see Table 3).

TABLE 3. PERCENTAGE OF NON-INSTITUTIONALIZED POPULATION WITH DISABILITY BY GENDER, 2006 AND 2018

Age group	Men		Women	
	2006	2018	2006	2018
50-54	14.9%	14.5%	15.8%	15.2%
55-59	17.0	19.4	20.2	20.2
60-64	22.9	21.9	22.7	23.1
65-69	21.5	23.8	23.5	24.0

Note: Disability means a “work-limiting disability.”
Source: Authors’ calculations using *National Health Interview Survey* (NHIS) (2006-2018).

Bringing together these three trends produces “working life expectancy” at age 50 (see Table 4). In 2018, on average, 50-year-old men could expect to live an additional 29.8 years, and in 21.8 of those years they would be capable of work. For women, the corresponding numbers are 33.6 years of life and 23.9 years of work capability. For the typical person, the remaining years after the work capacity limit is reached would entail life in the community with some work-limiting disability, with only about half a year in a senior care facility. Since 2006, men have gained 1.2 years of total life expectancy and women 1.0 years, about evenly divided in both cases between work-capable and work-incapable.

TABLE 4. EXPECTATIONS AT AGE 50 OF YEARS SPENT IN VARIOUS STATES BY GENDER, 2006 AND 2018

State	Men			Women		
	2006	2018	2006-2018	2006	2018	2006-2018
Total	28.6	29.8	1.2	32.5	33.6	1.0
Free of disability	21.3	21.8	0.5	23.3	23.9	0.6
With disability	6.8	7.5	0.7	8.6	9.3	0.7
Institutionalized	0.5	0.5	0.0	0.7	0.5	-0.2

Sources: Authors’ calculations using NHIS (2000-2018); ACS (2000-2018); and NVSS (2000-2018).

On their face, these results may seem encouraging. While only about half of the additional year of life gained since 2006 is time that can be used for work, even this slow progress means that the average person can work until their early 70s. However, the average does not tell the full story.

Results by Race and Education

The life expectancy results by race and education for men and women show that every group experienced some gains between 2006 and 2018 (see Table 5). The modest gains by low-education whites are emblematic of the opioid epidemic, and other “deaths of despair.” High-education whites experienced more robust improvements in life expectancy.¹¹

TABLE 5. PERIOD LIFE EXPECTANCY AT AGE 50, BY RACE, EDUCATION AND GENDER, 2006 AND 2018

Year	White		Black	
	Low education	High education	Low education	High education
<i>Men</i>				
2006	26.6	30.9	23.3	26.3
2018	27.2	32.3	24.1	28.6
2006-2018	0.6	1.4	0.8	2.3
<i>Women</i>				
2006	31.2	33.8	28.7	30.5
2018	31.6	34.9	30.8	32.1
2006-2018	0.4	1.1	2.1	1.6

Sources: Authors’ calculations using ACS, NVSS, and NHIS (2000-2018).

In contrast to total life expectancy, working life expectancy displays qualitative differences across groups (see Table 6 on the next page). Here, a stark educational divide is apparent: both high-education Black and white individuals experienced an increase of roughly one year of working life expectancy from 2006-2018. In contrast, most low-education groups actually saw a decline in working life expectancy, with

TABLE 6. WORKING LIFE EXPECTANCY AT AGE 50, BY RACE, EDUCATION AND GENDER, 2006 AND 2018

Year	White		Black	
	Low education	High education	Low education	High education
<i>Men</i>				
2006	19.0	24.2	14.8	18.8
2018	18.5	25.4	13.4	19.7
2006-2018	-0.5	1.2	-1.4	0.9
<i>Women</i>				
2006	21.3	25.6	16.3	21.6
2018	21.0	26.9	16.7	22.2
2006-2018	-0.3	1.4	0.4	0.6

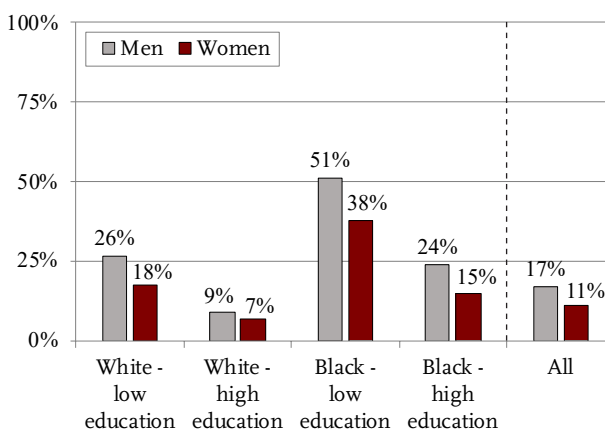
Sources: Authors' calculations using ACS, NVSS, and NHIS (2000-2018).

the exception of Black women. In terms of retirement security, this pattern is clearly a step back for low-education workers, since the inability to work to a later age is now accompanied by a need to finance a longer retirement.

Simulating How Long Individuals Can Work

If individuals are expected to work longer, how many of them will be unequal to the task? To answer this question, the analysis builds on the estimated probabilities of mortality, institutionalization, and work-limiting disability at each age after 50 in 2018. The analysis takes individuals at age 62 and calculates the probability that they will still be capable of work at Social Security's Full Retirement Age (FRA) of 67. Strikingly, more than half of low-education Black men who are capable of working at age 62 will prove incapable of working to the FRA (see Figure 1).

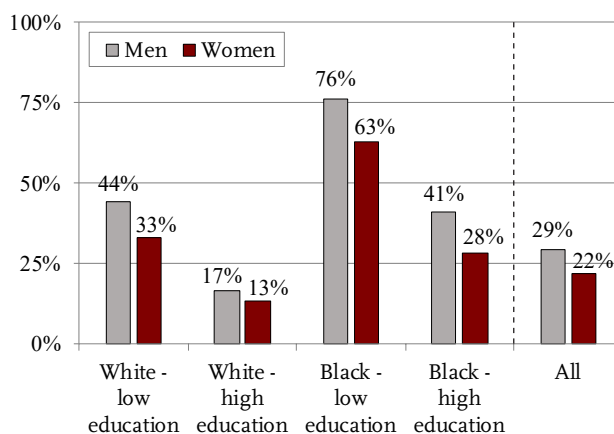
FIGURE 1. PERCENTAGE OF INDIVIDUALS WHO CAN WORK AT 62 BUT NOT AT 67, BY DEMOGRAPHIC GROUP



Note: Based on 100,000 simulations for each group.
Source: Authors' calculations.

When it comes to working until the maximum Social Security claiming age of 70, Figure 2 shows that among most groups, of those who can work at 62, more than a quarter will not be able to work until 70. For low-education Black men, this share exceeds three-quarters.

FIGURE 2. PERCENTAGE OF INDIVIDUALS WHO CAN WORK AT 62 BUT NOT AT 70, BY DEMOGRAPHIC GROUP



Note: Based on 100,000 simulations for each group.
Source: Authors' calculations.

Conclusion

After trending up for decades, improvements in life expectancy have moderated since 2006, while improvements in working life expectancy have slowed even more. When looking across demographic groups, the picture is still more concerning. The population-level gain in working life expectancy, however modest, is driven almost entirely by high-education groups (with the exception of low-education Black women). As a result, a large share of those with less education will not be able to work until Social Security's FRA of 67. This problem is particularly acute among low-education Black men. A majority of this group will be incapable of working to 67.

In thinking of solutions for inadequate retirement savings, therefore, working longer may be fine for those with more education, but Black and low-education individuals, who are the least likely to have sufficient savings, are also the least well-positioned to work longer.¹² They would also be the groups most vulnerable financially to further increases in Social Security's eligibility age thresholds.

Endnotes

- 1 Quinby and Wettstein (2021).
- 2 For overall population trends, see Martin et al. (2010) and Lezzoni, Kurtz, and Rao (2014). For trends by education, see Cutler, Ghosh, and Landrum (2014) and Coile and Duggan (2019).
- 3 See Coile and Duggan (2019) and Munnell, Soto, and Golub-Sass (2008).
- 4 Case and Deaton (2020).
- 5 See Crimmins, Saito, and Ingegneri (1989, 1997) and Munnell, Soto and Golub-Sass (2008).
- 6 Note that education quantile is, therefore, race-cohort-gender specific. This approach recognizes that attaining an equivalent absolute level of education (e.g., a college degree) is less likely for Black individuals than for whites, given the overall lower educational attainment among Black individuals. For further discussion see Leive and Ruhm (2021), who take the complementary approach of assigning quantiles across race. In their setting, therefore, Black individuals are overrepresented in lower-education groups, and whites are overrepresented in higher-education groups. Our approach ensures that each race has equal shares in the education quantiles.
- 7 This approach is similar to that of Meara, Richards, and Cutler (2008), Bound et al. (2015), and Leive and Ruhm (2021).
- 8 Mortality is estimated at every age. The other two measures are estimated by five-year age bins to increase sample size.
- 9 This calculation assumes that mortality, institutionalization, and disability are independent events, an approach commonly used in the literature (see, for example, Crimmins, Saito, and Ingegneri 1997).
- 10 Prison sentences are not only an impediment to work while they last, but also lead to a permanent loss of earning capacity even for those who do reenter the labor market (see, for example, Agan and Starr 2018). While the latter is beyond the scope of this analysis, the estimated impact of institutionalization on the ability of individuals, particularly men, to provide for themselves and their families must therefore be seen as a lower bound of the total effect.

11 The lack of systematic patterns by education among Black individuals echoes results in other recent work. See Leive and Ruhm (2021) and Wettstein et al. (2021).

12 Munnell, Hou, and Sanzenbacher (2018).

References

- Agan, Amanda and Sonja Starr. 2018. "Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment." *Quarterly Journal of Economics* 133(1): 191-235.
- Bound, John, Arline Geronimus, Javier Rodriguez, and Timothy Waidmann. 2015. "Measuring Recent Apparent Declines in Longevity: The Role of Increasing Educational Attainment." *Health Affairs* 34(12): 2167-2173.
- Case, Anne and Angus Deaton. 2020. *Deaths of Despair and the Future of Capitalism*. Princeton, NJ: Princeton University Press.
- Centers for Disease Control and Prevention. *National Health Interview Survey, 2000-2018*. Atlanta, GA.
- Centers for Disease Control and Prevention. *National Vital Statistics System, 2000-2018*. Atlanta, GA.
- Coile, Courtney C. and Mark G. Duggan. 2019. "When Labor's Lost: Health, Family Life, Incarceration, and Education in a Time of Declining Economic Opportunity for Low-Skilled Men." *Journal of Economic Perspectives* 33(2): 191-210.
- Crimmins, Eileen M., Yasuhiko Saito, and Dominique Ingegneri. 1997. "Trends in Disability-Free Life Expectancy in the United States, 1970-90." *Population and Development Review* 23(3): 555-572.
- Crimmins, Eileen M., Yasuhiko Saito, and Dominique Ingegneri. 1989. "Changes in Life Expectancy and Disability-Free Life Expectancy in the United States." *Population and Development Review* 15(2): 235-267.
- Cutler, David M., Kaushik Ghosh, and Mary Beth Landrum. 2014. "Evidence for Significant Compression of Morbidity in the Elderly U.S. Population." In *Discoveries in the Economics of Aging*, edited by David A. Wise, 21-51. Chicago, IL: University of Chicago Press.
- Leive, Adam A. and Christopher J. Ruhm. 2021. "Education Gradients in Mortality Trends by Education and Race." Working Paper 28419. Cambridge, MA: National Bureau of Economic Research.
- Lezzoni, Lisa L., Stephen G. Kurtz, and Sowmya R. Rao. 2014. "Trends in U.S. Adult Chronic Disability Rates Over Time." *Disability Health Journal* 7(4): 402-412.
- Martin, Linda G., Vicki A. Freedman, Robert F. Schoeni, and Patricia M. Andreski. 2010. "Trends in Disability and Related Chronic Conditions Among People Ages Fifty to Sixty-Four." *Health Affairs* 29(4): 725-731.
- Meara, Ellen R., Seth Richards, and David M. Cutler. 2008. "The Gap Gets Bigger: Changes in Mortality and Life Expectancy, by Education, 1981-2000." *Health Affairs* 27(2): 350-360.
- Munnell, Alicia, H., Wenliang Hou, and Geoffrey T. Sanzenbacher. 2018. "Trends in Retirement Security by Race/Ethnicity." *Issue in Brief* 18-21. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Munnell, Alicia, H., Mauricio Soto, and Alex Golub-Sass. 2008. "Will People Be Healthy Enough to Work Longer?" Working Paper 2008-11. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Quinby, Laura and Gal Wettstein. 2021. "Are Older Workers Capable of Working Longer?" Working Paper 2021-8. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- U.S. Census Bureau. *American Community Survey, 2000-2018*. Washington, DC.
- Wettstein, Gal, Alicia H. Munnell, Wenliang Hou, and Nilufer Gok. 2021. "The Value of Annuities." Working Paper 2021-5. Chestnut Hill, MA: Center for Retirement Research at Boston College.

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