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# NATIONAL RETIREMENT RISK INDEX: HOW MUCH LONGER DO WE NEED TO WORK?

By ALICIA H. MUNNELL, ANTHONY WEBB, LUKE DELORME, AND FRANCESCA GOLUB-SASS\*

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## Introduction

The National Retirement Risk Index (NRRI) measures the share of American households “at risk” of being unable to maintain their pre-retirement standard of living in retirement. The NRRI is determined by comparing households’ projected replacement rates – retirement income as a percentage of pre-retirement income – with target rates that would allow them to maintain their living standards. A recent update shows that, in the wake of the financial crisis and the Great Recession, 51 percent of today’s working households are at risk.<sup>1</sup> But a key assumption of the NRRI is that people retire at age 65. Clearly if people worked longer, the percentage at risk would decline. This *brief* adapts the NRRI calculations to address the question: At what age would the vast majority of households be ready to retire?

The discussion proceeds as follows. The first section lays out the nuts and bolts of the NRRI and explains how it has been adapted for this analysis. Projected replacement rates are calculated not only for the generally assumed retirement age of 65, but also for every potential retirement age between 50 and 90. These replacement rates are then compared to a target rate to determine the percentage of households “ready” for retirement at each age. The second

section presents the results, showing the cumulative percentage of households ready for retirement at different ages, with breakdowns by income and current age.<sup>2</sup> The third section addresses how much longer households have to work beyond age 65 to be prepared for retirement. The final section concludes that over 85 percent of households would be prepared to retire by age 70. Thus, many individuals will need to work longer than their parents did, but they will still be able to enjoy a reasonable period of retirement, especially as health and longevity continue to improve.

## Adapting the NRRI

Constructing the NRRI involves three steps: 1) projecting a replacement rate – retirement income as a share of wage-adjusted lifetime income – for each member of a nationally representative sample of U.S. households; 2) constructing a target replacement rate that would allow each household to maintain its pre-retirement standard of living in retirement; and 3) comparing the projected and target replacement rates to find the percentage of households “at risk.” While the standard NRRI calculation involves one compari-

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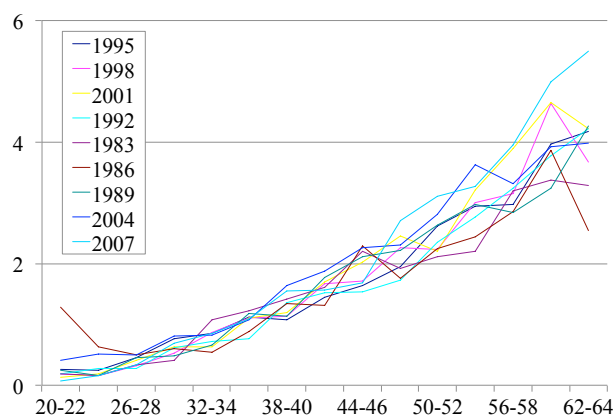
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son of target and projected replacement rates, at age 65, the current analysis compares the projected and target rates at each age between 50 and 90.

### *Projecting Household Replacement Rates*

The exercise starts with projecting each household's retirement income at age 65. Retirement income is defined broadly to include financial wealth, pensions, defined contribution/401(k) wealth, Social Security, and housing.<sup>3</sup> For financial assets in 401(k) plans and other accounts, projections are based on wealth-to-income patterns by age group from the 1983-2007 Federal Reserve *Surveys of Consumer Finances* (SCF). These patterns turn out to be strikingly similar over the whole period (see Figure 1). For defined benefit pension income, the projections are based on amounts reported by survey respondents. For Social Security, benefits are calculated based on current and most recent earnings reported in the SCF and a fitted earnings profile constructed from *Health and Retirement Study* data.<sup>4</sup> For housing, projections rely on SCF data and are used to calculate two distinct sources of income: the rental value that homeowners receive from living in their home rent free and the amount of equity they could borrow from their housing wealth through a reverse mortgage.<sup>5</sup> Once estimated, the components are added together to arrive at total projected retirement income for each household at each age between 50 and 90.<sup>6</sup>

FIGURE 1. RATIO OF WEALTH TO INCOME IN THE SCF, BY AGE GROUP, 1983-2007



Source: Authors' calculations based on U.S. Board of Governors of the Federal Reserve System, *Survey of Consumer Finances* (SCF), 1983-2007.

To calculate projected replacement rates, we also need income *prior* to retirement. The items that comprise pre-retirement income include earnings, the return on 401(k) plans and other financial assets, and imputed rent from housing, net of mortgage interest payments. In essence, with regard to wealth, income in retirement equals the annuitized value of all financial and housing assets; income before retirement is simply the return on those same assets. Earnings prior to retirement are calculated by creating a wage-indexed earnings history and averaging each individual's annual indexed wages over his lifetime. Average annual income from wealth is calculated by applying a real return of 4.6 percent to projected wealth prior to retirement. Average lifetime income then serves as the denominator for each household's replacement rate.

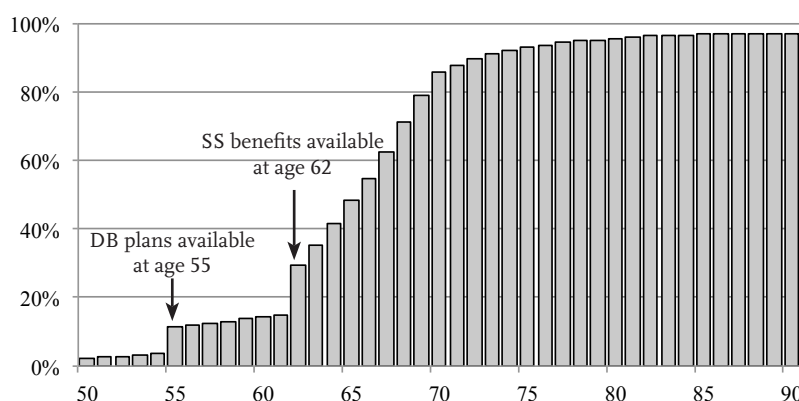
### *Estimating Target Replacement Rates*

To determine whether a household is "ready" to retire requires comparing its projected replacement rate with a benchmark, or target, rate. A commonly used benchmark is the replacement rate needed to allow households to maintain their pre-retirement standard of living in retirement. People clearly need less than their full pre-retirement income to maintain this standard once they stop working since they pay less in taxes, no longer need to save for retirement, and often have paid off their mortgage. Thus, a greater share of their income is available for spending. Target replacement rates are estimated for different types of households assuming that households spread their income so as to have the same level of consumption in retirement as they had before they retired.

### *Calculating the Age of "Readiness"*

The final step is to simply compare each household's projected replacement rate at each age between 50 and 90 with its target. The age at which the household's projected replacement rate equals its target replacement rate is the age when it is ready to retire. That is, it is the age at which the household can stop working and maintain its pre-retirement standard of living.

FIGURE 2. CUMULATIVE PERCENTAGE OF HOUSEHOLDS READY FOR RETIREMENT BY AGE



Source: Authors' calculations.

## How Working Longer Improves Retirement Readiness

Armed with the age of readiness for each household, Figure 2 reports the cumulative percentage of households ready by age. The figure shows that at Social Security's earliest retirement age of 62, only about 30 percent of households are prepared for retirement. Of these households, over 60 percent are covered by a defined benefit plan. By age 66, Social Security's current Full Retirement Age, about 55 percent of households are projected to be prepared for retirement (this figure includes the 30 percent already prepared by age 62). This finding is consistent with the results for the standard NRRI, which show that about half of households are at risk of being unprepared for retirement at age 65.<sup>7</sup> At a retirement age of 70, about 86 percent of households are prepared for retirement.<sup>8</sup>

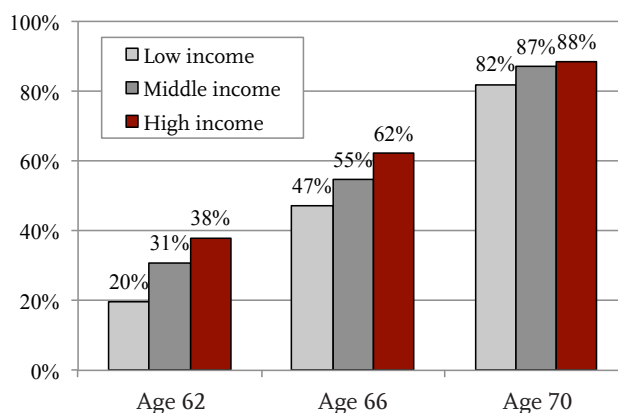
### Prominence of Social Security

The steep improvement in readiness from ages 62 through 70 and the leveling off thereafter (shown in Figure 2) reflect the importance of Social Security and the pattern of its benefit payments. Social Security benefits increase by about 8 percent per year between ages 62 and 70, due to the actuarial adjustment before the Full Retirement Age of 66 and the Delayed Retirement Credit between 66 and 70.<sup>9</sup> After 70, initial Social Security benefits remain constant in real terms. In contrast, financial wealth (both inside and outside of defined contribution plans) grows at 4.6 percent per year until retirement and then stays constant in real terms.<sup>10</sup>

### Readiness by Income and Birth Cohort

Social Security also serves as an important mechanism for closing the readiness gap between low- and high-income households. Figure 3 shows the percentage of households ready by income at three selected retirement ages. Thirty-eight percent of high-income households have sufficient assets to replace pre-retirement income by age 62, compared to only 20 percent of low-income households. By age 70, low-income households, who derive the bulk of their retirement income from Social Security, are nearly as prepared for retirement as their high-income counterparts (82 percent vs. 88 percent). This equality does not, of

FIGURE 3. PERCENTAGE OF HOUSEHOLDS READY FOR RETIREMENT AT SELECTED AGES, BY INCOME

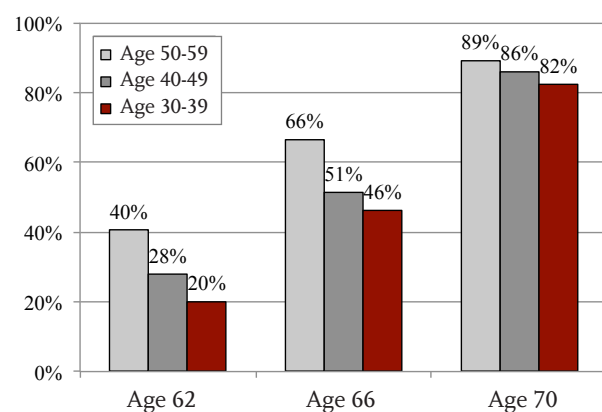


Source: Authors' calculations.

course, signify that low-income households are as “well off” financially as high-income households. The finding only says that the households in these two income groups are able to meet their target replacement rates.

Older cohorts are more prepared for retirement than their younger counterparts. As shown in Figure 4, households headed by individuals aged 50-59 as of the 2007 survey were found to be better prepared to retire by age 62 than households aged 30-39 (40 percent vs. 20 percent). But, again, the gap between the oldest and youngest cohorts is closed considerably by delaying retirement until age 70 – 89 percent vs. 82 percent.

FIGURE 4. PERCENTAGE OF HOUSEHOLDS READY FOR RETIREMENT AT SELECTED AGES, BY AGE IN 2007



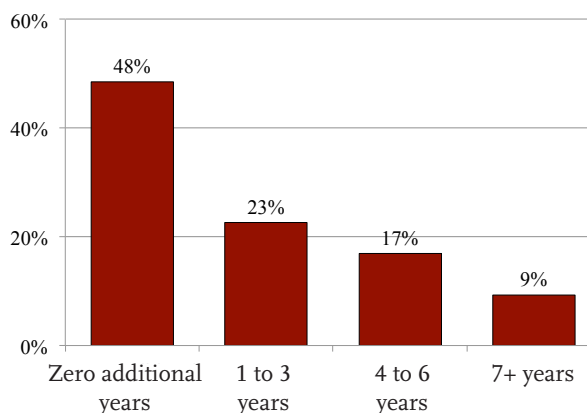
Source: Authors' calculations.

Younger households tend to be less prepared for three main reasons. First, they are expected to live longer, which means they will need additional assets to cover a longer retirement period. Second, Social Security replacement rates tend to be slightly lower for younger households because they face a higher Full Retirement Age. And, third, fewer younger households will be covered by defined benefit pension plans, and they do not appear to be saving more in 401(k) plans relative to their income than older households.<sup>11</sup>

## How Much Longer Do Households Have to Work?

As shown in Figure 2, almost half of households are prepared for retirement at age 65, the traditional baseline assumption used in the NRRI. About a quarter of households have to work just one to three years beyond 65 (see Figure 5), and a portion of this increase would be offset by rising longevity over the next two decades. Only 9 percent have to work an additional seven or more years. These results paint a different picture than recent opinion surveys, which find that people anticipate that they will have to work much longer.<sup>12</sup>

FIGURE 5. NUMBER OF YEARS BEYOND AGE 65 THAT HOUSEHOLDS MUST WORK TO ATTAIN READINESS



Note: An additional 2.8 percent of households in the sample would not be ready by age 90.

Source: Authors' calculations.

## Conclusion

Working longer is the key to a secure retirement for most households. Often people respond to such a proposal, however, with “I don’t want to work into my 90s.” Today’s workers should derive comfort from the calculations presented above, which indicate that the vast majority of households – more than 85 percent – would be prepared for retirement by age 70. While this finding suggests that today’s workers will need to work longer than their parents, they are also healthier and better educated, generally have less physically demanding jobs, and can expect to live longer. In short, working longer is feasible for most households, and it does not mean working forever.

## Endnotes

1 Munnell, Webb, and Golub-Sass (2009).

2 The NRRI reports the percentage of households at risk in retirement. Given the question addressed in this analysis – the age at which households are *ready* for retirement – the results flip the emphasis to the percentage of households that are not at risk.

3 The NRRI does not include income from work, since labor force participation declines rapidly as people age.

4 The *Health and Retirement Study* (HRS) is a nationally representative panel survey of older households conducted by the University of Michigan. Lifetime earnings records are available to qualified researchers on a restricted basis, and we use these earnings records to project earnings histories onto the SCF households.

5 For 401(k) assets, other financial wealth, and housing wealth, the assumption is that households convert the wealth into a stream of income by purchasing an inflation-indexed annuity – that is, an annuity that will provide them with a payment linked to the Consumer Price Index for the rest of their lives. For couples, the annuity provides the surviving spouse two-thirds of the base payment. While inflation-indexed annuities are neither easily available nor popular with consumers, they provide a convenient tool for converting a lump sum of wealth into a stream of income. And while inflation-indexed annuities provide a smaller initial benefit than nominal annuities, over time they protect a household's purchasing power against the erosive effects of inflation.

6 Both mortgage debt and non-mortgage debt are subtracted from the appropriate components of projected wealth.

7 See Munnell, Webb, and Golub-Sass (2009). The calculation is not exact for two primary reasons. First, Social Security benefits are calculated somewhat differently for certain households. In the NRRI, if the spouses are more than 3 years apart in age, the younger spouse is assigned her age-62 benefit when the older spouse turns 65. In this *brief*, the younger

spouse is not assigned any Social Security benefit until she turns 62. Second, retirement preparedness in the NRRI requires only 90 percent of target adequacy whereas 100 percent adequacy is required for this *brief*. In addition, the analysis in this *brief* reflects some methodological changes from the prior NRRI study, as well as a slight difference in the ages of the sample households (ages 30-59 are used here compared to ages 32-58 in the prior study).

8 Our analysis assumes that earnings past age 62 are just enough to cover the household's consumption expenditures. Therefore, while existing assets continue to grow, working longer does not result in additional saving. In addition, working longer is not assumed to affect the earnings base used for calculating Social Security benefits.

9 Early or late retirement benefit calculations can be found at [http://www.ssa.gov/oact/quickcalc/early\\_late.html#calculator](http://www.ssa.gov/oact/quickcalc/early_late.html#calculator). For retirees with a Full Retirement Age of 66, early retirement at age 62 reduces benefits by 25 percent. Delaying retirement until 70 increases benefits by 32 percent. The total increase as a result of waiting from 62 to 70 would be 76 percent.

10 At retirement, the amount the household receives is determined by annuity rates at that time. Delaying retirement increases the size of the annuity payout, because the household will receive payments for fewer years.

11 Over the past three decades, defined contribution plans have replaced defined benefit plans as the dominant employer-sponsored pension. In 1983, 62 percent of workers with pension coverage were covered solely by a defined benefit plan. By 2007, this figure had dropped to 17 percent. See Munnell et al. (2009).

12 See Ellis (2011); and Coombes (2011).

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### About the Center

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

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