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IS THERE REALLY A RETIREMENT SAVINGS CRISIS? AN NRRI ANALYSIS

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Introduction

The National Retirement Risk Index (NRRI) has shown that even if households work to age 65 and annuitize all their financial assets, including the receipts from reverse mortgages on their homes, nearly 45 percent will be 'at risk' of being unable to maintain their standard of living in retirement. That is, these households are projected to have replacement rates — retirement income as a share of pre-retirement income — that fall more than 10 percent short of a target rate designed to maintain their pre-retirement living standard. More realistic assumptions regarding earlier retirement and reluctance to annuitize 401(k) balances or tap housing equity would put the percentage 'at risk' considerably higher, as would the inclusion of rapidly growing health care costs. Yet, recent academic articles and press stories question whether Americans are facing a retirement income crisis.

This *brief* summarizes an exercise that reconciles these seemingly contradictory conclusions. It demonstrates the importance of the age group and time period being examined. The academic literature showing no problem is generally based on the *Health and Retirement Study* (HRS), a nationally representative sample of households age 51 to 61 in 1992. The NRRI is based on the 2004 *Survey of Consumer Finances*, which includes households of all ages. Applying the NRRI methodology to the HRS age group produces very similar results to recent academic studies. That is, only about 20 percent of households age 51-61 in 1992 were 'at risk.'

Fast forward to 2004 and calculate the NRRI in that year for those 51-61, and the at 'risk' population increases to 32 percent. This increase reflects declining Social Security replacement rates, lower real interest rates, and the continued shift from defined benefit to 401(k) plans.

Revisiting 1992 highlights the fact that the retirement landscape is changing over time, and that a good report card for older households in 1992 does not preclude serious problems for Baby Boomers when they retire.

A Recap of the NRRI

The National Retirement Risk Index provides a measure of the percent of working-age American households who are 'at risk' of being financially unprepared

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for retirement. The 2004 Index calculates for each household in the 2004 *Survey of Consumer Finances* a replacement rate — projected retirement income as a percent of pre-retirement earnings — and compares that replacement rate with a benchmark that it defined as adequate.[1] Those who fail to come within 10 percent of the benchmark are defined as 'at risk,' and the Index reports the percent of households 'at risk.'

The results as presented in the original release show that, overall, 43 percent of households sampled in 2004 will not be able to maintain their standard of living in retirement even if they retire at age 65, which is later than the current average retirement age.[2]

An analysis by age group indicates that the situation gets more serious over time (see Table 1). About 35 percent of the Early Boomers (those born between 1946 and 1954) will not have an adequate retirement income. This share increases to 44 percent for the Late Boomers (those born between 1955 and 1964), and then rises to 49 percent for the Generation Xers (those born between 1965 and 1972).[3]

Table 1. Percent of Households 'At Risk' by Birth Cohort and Income Group, 2004

Income group	All	Early Boomers 1946-1954	Late Boomers 1955-1964	Generation Xers 1965-1972
All	43%	35%	44%	49%
Top third	36	33	35	42
Middle third	40	28	44	46
Bottom third	53	45	54	60

Source: Center for Retirement Research at Boston College (2006).

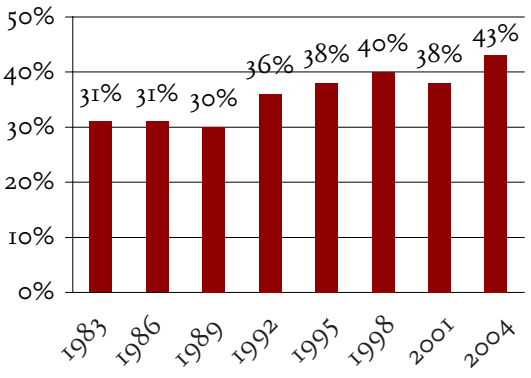
This pattern of an increasing NRRI by age group reflects the impact of increasing longevity and a contracting retirement income system. Increasing longevity means that retirement periods are increasing as — despite some recent improvement in labor force participation rates of older workers — the average retirement age hovers at 63. At the same time, replacement rates are falling for a number of reasons. First, at any given retirement age, Social Security benefits will replace a smaller fraction of pre-retirement earnings as the Normal Retirement Age rises from 65 to 67. Second, while the share of the workforce covered by a pension has not changed over the last quarter of a century, the type of coverage has shifted from defined benefit plans, where workers receive a life annuity based on years of service and final salary, to 401(k) plans, where individuals are responsible for their own saving. In theory 401(k) plans could provide adequate retirement income, but to date the median balance for household heads approaching retirement is only $60,000.[4] And, most of the working-age population saves virtually nothing outside of their employer-sponsored pension plan.[5]

'Optimal Saving' versus the NRRI, 1992

A group of respected economists recently published a rigorous study that assessed household by household whether people were saving 'optimally.'[6] 'Optimally' was defined as accumulating the amount needed for each household to maintain a consistent level of consumption over its lifetime.[7] The exercise incorporated uncertainty about how long people would live, medical expenses, and progressive taxation. It defined saving to include accumulation through pensions, Social Security, and housing equity as well as direct saving. The results showed that 16 percent of households had less wealth than their 'optimal' targets. On their face, these results appear to contradict the NRRI finding that 43 percent of households are 'at risk' of not being able to maintain their standard of living in retirement.

In fact, the 'optimal saving' and NRRI results can be reconciled. The reconciliation rests primarily on the fact that the two analyses look at different cohorts. The 'optimal saving' analysis was based on the *Health and Retirement Study* (HRS), which covered a specific group of Americans — namely, those who were 51 to 61 in 1992. The NRRI was based on the Federal Reserve's most recent *Survey of Consumer Finances*, which covered all households in 2004. Given the later date — 2004 versus 1992 — and the broader age range, the NRRI population was much younger than the HRS sample. (By 2004 the HRS sample would have been aged 63 to 73, and therefore not even included in the NRRI analysis.) The rise in the NRRI over the period 1983 to 2004 suggests younger people are increasingly 'at risk' (see Figure 1).

Figure 1. The National Retirement Risk Index, 1983-2004



Source: Center for Retirement Research at Boston College (2006).

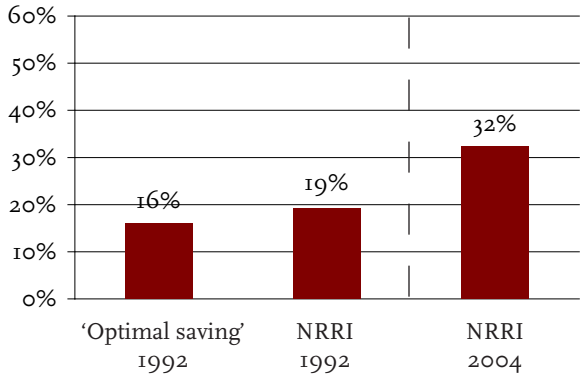
The fact that the NRRI has been calculated for earlier years means that it is possible to determine the percent of SCF households age 51 to 61 in 1992 — that is, the HRS population — that were 'at risk.' The results for the NRRI, shown in Figure 2, are remarkably close to those from the 'optimal saving' analysis — 19 percent versus 16 percent.[8] That is, focusing on the same age group in the same year, the two very different methodologies yield the same general conclusion — the vast majority of households were saving enough to allow them to maintain their pre-retirement living standards in retirement. While differences in methodology — such as the treatment of housing and retirement consumption — could also affect the results, in our view the use of different cohorts is the dominant reason. (For more details on methodology, see the box on the next page.)

The Declining Fortunes of Those 51-61, 1992-2004

To underscore the importance of the cohort effect, it is useful to consider how those 51 to 61 were faring in 2004 as compared to 1992. The answer is that, by 2004, 32 percent of this older age group was 'at risk.' The sources of this substantial increase in the 'at risk' population are shown in Figure 3.

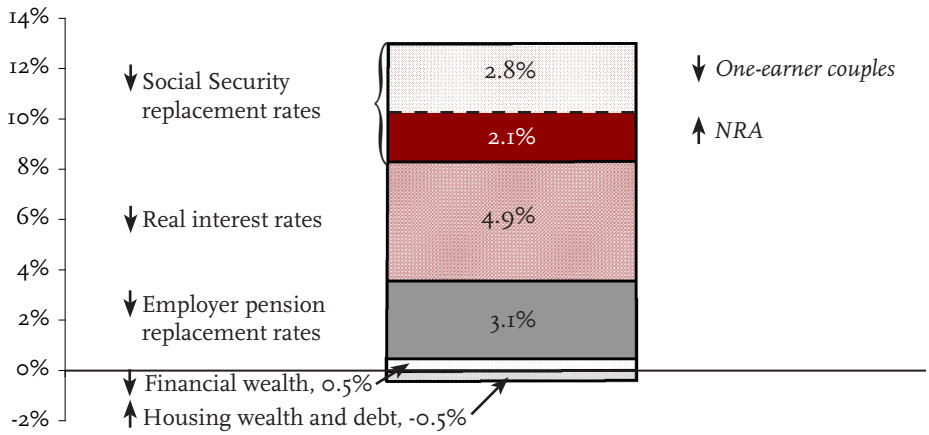
Two very important reasons for the increase in the NRRI for those 51 to 61 relate to changes in Social Security replacement rates. First, the percentage of one-earner couples declined from 18 percent to 9 percent of the age group over the 1992-2004 period

Figure 2. Percent 'At Risk': 'Optimal Saving' Versus the NRRI, Ages 51-61, 1992 and 2004



Source: Center for Retirement Research at Boston College (2006).

Figure 3. Increase in Percentage 'At Risk' From 1992-2004 by Contributing Component, Ages 51-61



Source: Authors' calculations from the Center for Retirement Research at Boston College (2006).

'Optimal Saving' versus NRRI Methodology

YOU DON'T HAVE TO READ THIS!

The fundamental difference between the 'optimal saving' approach and the NRRI methodology is that the former uses numerical techniques to determine whether households have accumulated the level of wealth needed to smooth marginal utilities over their lifetimes, while the NRRI establishes a target replacement rate, which varies by income, marital status and homeownership, and classifies households 'at risk' if their projected retirement income fails to come within 10 percent of that target. It will not always be 'optimal,' of course, for households to meet their target. For example, a household with a large number of children might rationally plan for a large drop in household consumption at retirement when the children are gone.[9]

The NRRI projects replacement rates for the 2004 working-age population when they reach 65. The replacement rates are based on earnings patterns derived from the administrative data in the *Health and Retirement Study* and age-specific wealth-to-income ratios from the *Surveys of Consumer Finances* (1983-2004), which have been amazingly stable. These replacement rates will track trends in retirement preparedness over time, but should not be interpreted as predictions for any particular household. In contrast, the 'optimal saving' approach assesses the extent to which the actual wealth holdings of each household age 51-61 in 1992 are optimal given the household's simulated life experiences.

Finally, the two approaches treat housing wealth and post-retirement consumption quite differently.

Housing Wealth

The NRRI decomposes housing wealth into the present value of the stream of imputed rent over the remainder of the household's life expectancy and the present value of the eventual sale proceeds. A household consumes the former by simply continuing to occupy the house. It consumes the latter by taking out a reverse mortgage — in which the loan plus accumulated interest is repaid on the eventual sale of the house.

The 'optimal saving' approach does not separately identify either housing wealth or the consumption of housing services. On retirement, the household begins to decumulate its undifferentiated wealth, most of which consists of housing. Given the underlying assumptions, the household will exhaust its financial wealth fairly rapidly. At that point, the household must, if it wishes to continue with its planned program of asset decumulation, sell its house and move into rented accommodation. It would then proceed to decumulate the sale proceeds of its house. If the household lives long enough, all housing wealth will be consumed, just as in the NRRI.

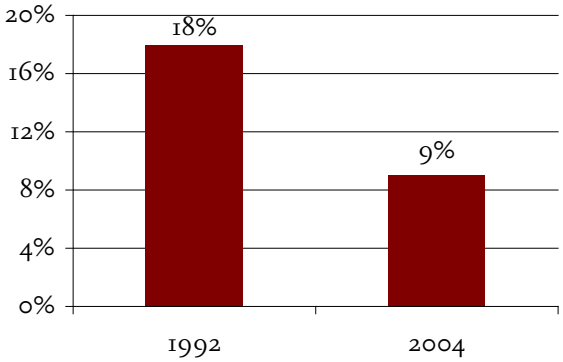
The key difference between the two approaches is that the NRRI is based on the premise that most households desire to "age in place." The 'optimal saving' study will inevitably result in most households being forced to sell their houses fairly early in retirement.

Consumption Patterns in Retirement

Households entering retirement must decide how to decumulate their savings. One of the most important decisions they must make is whether (and when) to purchase an annuity. The NRRI assumes that households seek to maintain a constant level of consumption in real terms and therefore they purchase an inflation-protected annuity immediately upon retirement.

Under the 'optimal saving' approach, households do not purchase annuities. Instead, they draw down their accumulated wealth. If the household were certain of being alive each year of expected retirement, it would, under conventional assumptions, choose equal amounts of consumption in all years. But the household faces some risk of not being alive to enjoy next year's consumption, a risk that increases with age. The response to this uncertainty, assumed in the 'optimal saving' approach, is that consumption declines at an accelerating rate over the course of retirement.[10] For any given level of retirement wealth, the 'optimal saving' approach offers higher initial retirement consumption than the NRRI plan. But consumption declines quite rapidly, and for the median household is less than that under the NRRI plan by about age 80.

Figure 4. One-earner Couples as a Percent of Total Households, NRRI, 1992 and 2004

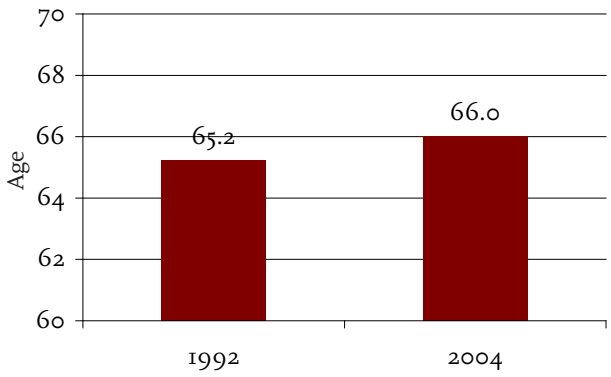


Source: Authors' calculations from the Center for Retirement Research at Boston College (2006).

(see Figure 4). One-earner couples tend to have higher replacement rates than two-earner couples or single households. This outcome is inevitable in a system that provides a 50-percent spouse's benefit. As women go to work, they increase the family's pre-retirement earnings but often fail to increase the couple's Social Security benefit in retirement. Thus, the median Social Security replacement rate for one-earner couples in 2004 was 58 percent compared to 32 percent for two-earner couples. The decline in one-earner couples reduced replacement rates.[11]

Another factor leading to a decline in Social Security replacement rates is the increase in Social Security's Normal Retirement Age — the age at which participants are entitled to full benefits — from 65 to 67. If people retire before the Normal Retirement Age, benefits are actuarially reduced. So the higher the Normal Retirement Age, the lower the replacement rate at any given age. In 1992, households age 51-61 were facing an average retirement age of 65.2; by 2004 all households in this age group were facing a Normal Retirement Age of 66 (see Figure 5). This increase in the Normal Retirement Age from 65.2 to 66 for those 51-61 reduced replacement rates and increased the percent 'at risk.'

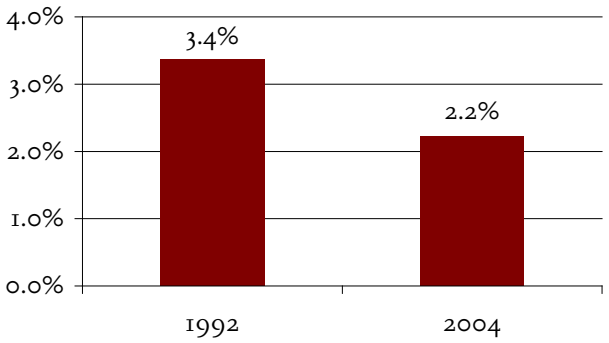
Figure 5. Average Normal Retirement Age for Those Age 51-61, 1992 and 2004



Source: U.S. Social Security Administration (2007).

The second reason for the increase in the NRRI for those 51-61 between 1992 and 2004 is the decline in real interest rates, as measured by the ten-year Treasury bond interest rate minus anticipated inflation over the same ten-year period. The real interest rate in 2004 was 2.2 percent compared to 3.4 percent in 1992 (see Figure 6). Lower interest rates mean that households get less income from annuitizing their financial assets and 401(k) balances. In terms of reverse mortgages, the lower rates affect homeowners in two ways. On the one hand, lower rates allow the homeowner to take out a bigger loan, since lower interest payments will be added to the principal over the life of the loan. On the other hand, lower rates reduce the amount homeowners will receive per dollar borrowed.

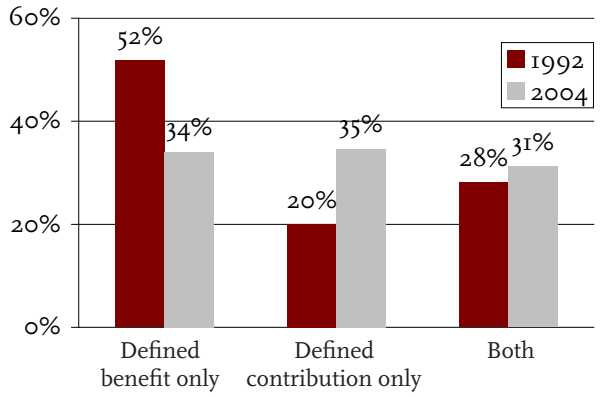
Figure 6. 'Real' Ten-Year Interest Rate, 1992 and 2004



Sources: Authors' calculations from U.S. Board of Governors of the Federal Reserve System (2006) and Federal Reserve Bank of Philadelphia (2006).

Finally, the shift from defined benefit to defined contribution plans also increased the percent 'at risk.' As shown in Figure 7 on the next page, in 1992 most households age 51-61 with a pension were covered by a defined benefit plan, either solely or with a supplemental defined contribution plan; virtually none

Figure 7. Households 51-61 with Pension Coverage, by Type of Plan, 1992 and 2004



Source: Authors' calculations from the Center for Retirement Research at Boston College (2006).

relied only on a defined contribution plan. By 2004, 35 percent of households in this age group with pension coverage were covered by a defined contribution plan only. Since overall coverage remained virtually the same, the impact of the shift in pension coverage arises from the fact that benefits projected from 401(k)s are smaller than those projected from defined benefit plans.

One development — the change in housing wealth and mortgage debt — somewhat mitigated the increase in the NRRI for those 51-61. Over the period, gross housing wealth increased from 2.4 times income in 1992 to 2.6 times income in 2004, reflecting the strong housing market.[12] This development alone increased the amount that households could access through a reverse mortgage. Unfortunately, the positive effect of increasing gross housing values was offset by a rise in mortgage debt. The rise in mortgage debt meant that some households will not only be ineligible to take out a reverse mortgage, but will also face mortgage payments during retirement. This mortgage effect dampens the favorable impact of the growth in gross housing wealth, so that, on balance, housing had only a modest favorable impact on the NRRI for those 51-61 between 1992 and 2004.

Conclusion

Regardless of the approach taken, those age 51-61 in 1992 were doing fine in terms of retirement saving. About 80 percent were on track to maintain their standard of living in retirement; only about 20 percent were expected to fall short. But the early 1990s were in some sense the "golden age" of retirement income. People 51-61 approaching retirement still faced a Normal Retirement Age under Social Security of 65, compared to 66 in 2004. There were more one-earner couples, which resulted in higher Social Security replacement rates. And 80 percent of those with pensions still had defined benefit plans, compared to 65 percent in 2004 for the similar age group. Interest rates were also higher in 1992 than 2004, producing greater income streams from annuitized wealth.

Thus, a good report card for older households in 1992 is fully consistent with an NRRI of 32 percent for those 51-61 in 2004. And, unless households begin to save more or work longer, the NRRI will continue to increase as the Social Security Normal Retirement Age rises to 67, the shift from defined benefit plans continues, retirement periods become longer with increased life expectancy, and the one-income couple virtually disappears. Yes, there really is a retirement savings crisis.

Endnotes

1 For the NRRI analysis, an 'adequate' benchmark is one that allows a household to maintain its pre-retirement standard of living in retirement. This target is less than 100 percent of pre-retirement income because, for example, retirees tend to pay less in taxes and no longer need to save for retirement. The target rates vary from 65 to 85 percent depending on household income and marital status. For further details, see Center for Retirement Research at Boston College (2006).

2 A more recent exercise updating the NRRI to 2006 found that the 'at risk' percentage increased slightly — to 44 percent (Munnell, Golub-Sass, and Webb 2007). For the purposes of this *brief*, the 2004 NRRI is used because more comprehensive data are available for this period, allowing for a richer comparative analysis.

3 This sample does not include Generation Xers born after 1972.

4 This amount includes Individual Retirement Account (IRA) balances, because most of the money in IRAs is rolled over from 401(k) plans. For further details on 401(k) missteps, see Munnell and Sundén (2006).

5 See Munnell, Golub-Sass, and Varani (2005).

6 Scholz, Seshadri, and Khitatrakun (2006) is the most recent study. But Engen, Gale and Uccello (1999) using the same sample came to similar conclusions. The notion that people may be even saving too much for retirement appeared on the front page of the *New York Times*; see Darlin (2007). For other studies that analyze the adequacy of retirement saving, see Bernheim et al. (2000); Butrica, Iams and Smith (2003); Congressional Budget Office (2003); Haveman et al. (2006); Keister and Deeb-Sossa (2001); Kotlikoff, Spivak and Summers (1982); Love, Smith and McNair (2007); Montalto (2001); Moore and Mitchell (2000); and Skinner (2007).

7 In economic terms, the goal was to equate expected marginal utility of consumption in period 1 with expected marginal utility of consumption in period 2, which with a positive probability of not being alive in period 2 translates into declining consumption.

8 The NRRI calculations only included households age 51-58. The NRRI for this group was 22 percent in 1992. Since, compared to households 51-58, those 59-61 had more one-earner couples, more defined benefit coverage, and faced an earlier Social Security Normal Retirement Age (65 versus 65.2), the NRRI was adjusted downward to reflect the characteristics of the entire 51-61 age group. The adjustment was basd on the fact that older households were less 'at risk' than younger households. In 1992, households age 51-55 had an NRRI of 25 percent; those 56-58 17 percent. Assuming a constant percent change implied those 59-61 had an NRRI of 11 percent. This assumption produced an overall NRRI for those 51-61 of 19 percent. A comparable adjustment was made to arrive at an NRRI for the 51-61 population in 2004.

9 For further discussion, see Scholz and Seshadri (2006).

10 The more rapidly the household allows consumption to decline during retirement, the less wealth it needs per dollar of age 65 consumption, and the less it needs to save during its working life. But less saving means more consumption, and households will wish to reallocate part of that additional consumption to their retirement.

11 These numbers, percentage of one-earner couples and median Social Security replacement rates for one-earner couples, pertain to the NRRI population with heads age 51-58.

12 The gross housing-to-income ratios pertain to the NRRI population with heads age 51-58.

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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 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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