How do inheritances affect the National Retirement Risk Index?

Authors: Alicia Haydock Munnell, Wenliang Hou, Anthony Webb

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Introduction

Today's working-age households, in aggregate, will inherit a substantial amount of wealth. The effect of inheritances on retirement readiness, however, is unclear. On the one hand, past research has shown that higher-income households – who are less likely to be unprepared for retirement – are more likely to receive inheritances and to receive larger amounts than their lower-income counterparts. On the other hand, the anticipated inheritance receipts of low- and middle-income households represent a much larger percentage of their current wealth, suggesting that inheritances could potentially be more influential in boosting their retirement security.

This *brief* uses the National Retirement Risk Index (NRRI), which is based on the Federal Reserve's *Survey of Consumer Finances* (SCF), plus additional questions from the SCF about inheritances to explore the extent to which inheritance receipts reduce the percentage of households "at risk." The NRRI measures Americans' retirement preparedness by comparing projected replacement rates – retirement income as a percentage of pre-retirement income – with target rates and shows that today's workers face a major retirement income challenge. Even if households work to age 65 and annuitize all their financial assets, including the receipts from reverse mortgages on their homes, more than half are at risk in retirement. The question is the extent to which considering inheritances changes this story.

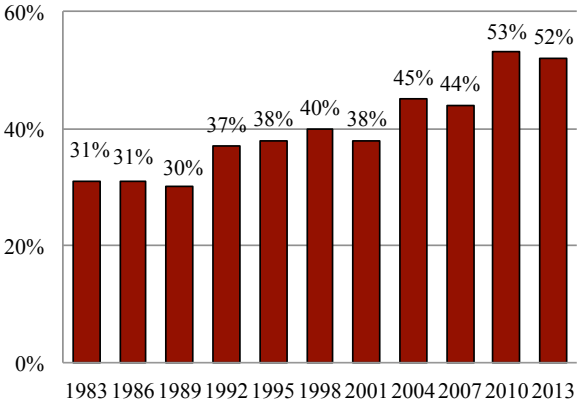
The discussion proceeds as follows. The first section describes the NRRI. The second section discusses the inheritance questions in the SCF and shows the relationship between inheritance responses and the NRRI status of households. The third section reports on the percentage of households that would have been at risk in the absence of inheritances, by subtracting inheritances from the wealth currently held by NRRI households. The fourth section explores how more inheritances in the future – perhaps as a result of unspent 401(k) balances – might reduce the percentage at risk. The final section concludes that inheritances already received – and potential increased inheritances from unspent 401(k) balances – have only a modest effect on the overall percentage of households at risk. The reasons are that many households do not receive any inheritance at all and – among those that do – most inheritances are relatively small and the large inheritances go to households already prepared for retirement.

* Alicia H. Munnell is director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. Wenliang Hou is a senior research advisor at the CRR. Anthony Webb is a senior research economist at the CRR. The CRR gratefully acknowledges Prudential Financial for its sponsorship of the National Retirement Risk Index.

The NRRI

The NRRI has increased over time due to longer life expectancies, reduced Social Security replacement rates, and very low interest rates (see Figure 1). In 2013, the Index shows that 52 percent of today's working-age households were at risk of being unable to maintain their pre-retirement levels of consumption once they stopped working.

Figure 1. The National Retirement Risk Index, 1983-2013



Source: Munnell, Hou, and Webb (2014).

Constructing the NRRI involves three steps: 1) projecting a replacement rate – retirement income as a share of pre-retirement 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.

Projecting Household Replacement Rates

Retirement income at 65 is defined broadly to include all of the usual suspects plus housing.[1] Retirement income from financial assets and housing is derived by projecting assets that households will hold at retirement, based on the stable relationship between a household's wealth-to-income ratio and its age that is evident in the 1983-2013 SCFs. Financial assets and housing are estimated separately.[2]

Sources of retirement income that are not derived from SCF-reported wealth are estimated directly. For defined benefit pension income, the projections are based on the amounts reported by survey respondents. For Social Security, benefits are calculated directly based on estimated earnings histories for each member of the household. Earnings prior to retirement are calculated by creating a wage-indexed earnings history and averaging each individual's annual indexed wages over his lifetime. Once estimated, the components are added together to get total projected retirement income at age 65.

The items that comprise pre-retirement income include earnings, the return on 401(k) plans and other financial assets, and imputed rent from housing.[3] Average annual income from wealth is calculated by applying a real return of 4 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 the share of the population at risk requires comparing projected replacement rates with a benchmark 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.[4]

Calculating the Index

The final step in creating the Index is to compare each household's projected replacement rate with its appropriate target. Households whose projected replacement rates fall more than 10 percent below the

target are deemed to be at risk of having insufficient income to maintain their pre-retirement standard of living. The Index is simply the percentage of all households that fall more than 10 percent short of their target. Not surprisingly, the percentage of households at risk declines as household income rises, but even a significant share of households in the top third of the income distribution will be at risk (see Table 1).

Table 1. Percentage of Households "At Risk" at Age 65 by Income Group, 2010 and 2013

Income group	2010	2013
All	52.9%	51.6 %
Low income	61.1	59.5
Middle income	54.0	52.2
High income	43.9	43.4

Source: Munnell, Hou, and Webb (2014).

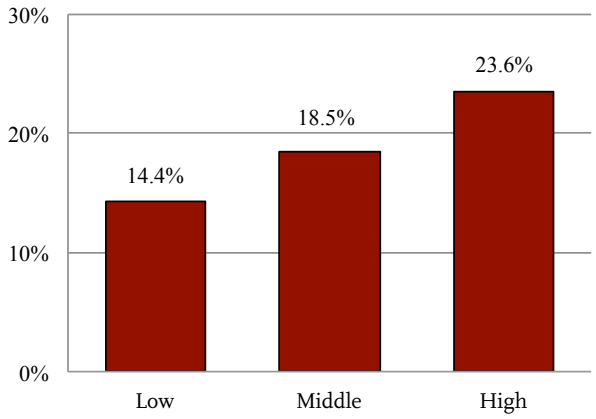
SCF Inheritance Information

The SCF questionnaire asks people whether they have received an inheritance, and, if so, what was the value at the time received and when did they receive it. If respondents' inheritances include their house, the questionnaire asks about the house value when they received it, the year they received it, and the current value of the house. Our analysis focused on households ages 30-59, the groups included in the NRRI.

Not surprisingly, the percentage of households receiving an inheritance increases with income, rising from 14 percent for the households in the bottom third of the income distribution to 24 percent for those in the top third (see Figure 2).[5]

In terms of the inheritances received, the amounts depend on whether the values are reported at receipt or updated to the present to reflect investment returns. The mere process of updating previous inheritances to the present is based on the assumption that they were saved and not consumed. This assumption is reasonable for middle- and higher-income households, but may be less realistic for households in the bottom third of the income distribution.

Figure 2. People Who Have Received An Inheritance, by Income Group



Source: Authors' calculations from U.S. Board of Governors of the Federal Reserve System, S*urvey of Consumer Finances* (2013).

Different approaches are used for the appreciation of financial and housing inheritances. Among the 19 percent of households that received an inheritance, roughly one third inherited a house. Housing values are taken directly from the SCF, based on self-reported information. Table 2 shows the value of the house when inherited and the value in 2013.

Table 2. Mean and Median Value of Houses Inherited, in Year Received and in 2013

Date	Median	Mean
In year received	$62,700	$115,000
In 2013	78,000	148,700

Source: Authors' calculations from the 2013 SCF.

Financial assets are assumed to appreciate at an annual real rate of 4 percent, and inflation is assumed to be 2.5 percent. Combining house and financial inheritances, Table 3 on the next page shows that median inheritances amounted to $50,000 in the year they were received and had appreciated to $87,500 by 2013.

Table 3. Total Median and Mean Inheritances, in Year Received and Updated to 2013

Measure	Low	Middle	High	Total
	In year received			
Median	$38,000	$50,000	$60,000	$50,000
Mean	106,500	112,900	191,600	144,800
	Updated to 2013			
Median	59,600	86,500	126,800	87,500
Mean	216,700	220,500	398,400	295,300

Source: Authors' calculations from the 2013 SCF.

One final fact before exploring the impact of inheritances on the NRRI is that, within each income category, households that have received an inheritance are statistically significantly less likely to be at risk than those that have not (see Table 4).

Table 4. Percentage of Households at Risk, by Income and Inheritance Status

Income group	No inheritance	Received inheritance	All
All	54.2%	40.4%	51.6%
Low	61.9	45.6	59.5
Middle	54.4	42.6	52.2
High	45.8	35.8	43.4

Source: Authors' calculations.

Contribution of Inheritances to Retirement Readiness

The central question of this *brief* is the contribution of inheritances to retirement readiness – that is, how much higher would the NRRI be if no households had received an inheritance. The methodology for eliminating inheritances already received involves four steps. The first is to project the value of the inheritances received to age 65, assuming financial assets increase by a real rate of 4 percent, housing values rise by a real rate of 1 percent, and inflation is 2.5 percent.[6] The second is to calculate the annuity income at age 65 that is generated by the inherited wealth, using the annuity factors in the NRRI and assuming that any inherited housing equity is tapped through a reverse mortgage. The third step is to subtract that annuity income from the numerator of the original replacement rate to calculate a new replacement rate for households that received inheritances. The final step is to recalculate the NRRI to reflect the reduced replacement rates for the households with inherited wealth.

The results from this exercise reveal that inheritances only modestly reduce the percentage at risk (see Table 5). Taking inheritances out of the 2013 NRRI raises the Index from its current level of 51.6 percent to 52.4 percent, a statistically significant, but modest, change.

Households in the top and bottom thirds of the income distribution are less affected by taking inheritances away than those in the middle; and these differences are statistically significant. While top-third households are the most likely to receive inheritances, they rely less on inheritances for retirement preparedness because they have lots of other financial resources. Bottom-third households are less likely to receive an inheritance, and those that do are more likely to already be at risk so the inheritance has little impact on their at-risk status. In contrast, middle-income households are more reliant on inheritances for retirement security than the top third and are more likely than the bottom third to receive an inheritance and to rely on it for making the difference in retirement preparedness.

Table 5. 2013 NRRI with Inheritances and Recalculated with Inheritances Eliminated, by Income Group

Income group	2013 NRRI with inheritances	Inheritances eliminated	Percentage-point change
All	51.6%	52.4%	0.8
Low	59.5	60.0	0.5
Middle	52.2	53.6	1.4
High	43.4	44.1	0.7

Source: Authors' calculations.

While inheritances barely move the needle on retirement preparedness for the population as a whole, they do have a greater effect on the recipient population (see Table 6). Eliminating their inheritances raises the share at risk by 4 percentage points overall. The largest effect is for those in the middle-income group, who see a 7-percentage-point jump.

Table 6. "At Risk" Status for Households that Received an Inheritance, with Inheritances and Recalculated with Inheritances Eliminated

Income group	2013 NRRI with inheritances	Inheritances eliminated	Percentage-point change
All	40.4%	44.8%	4.4
Low	45.6	49.0	3.4
Middle	42.6	50.0	7.4
High	35.8	38.6	2.8

Source: Authors' calculations.

What If Inheritances Increase?

The analysis so far has focused on actual inheritances that were already baked into the NRRI. But one could reasonably argue that inheritances will be greater in the future than the past because of the shift from defined benefit to defined contribution plans. The hypothesis is that both intended and unintended bequests might increase as retirees receive more of their pension benefits as lump sums rather than annuity payments.

Unintended bequests will then rise because people are reluctant to spend accumulated wealth. This reluctance is evident in the small size of the annuity market, an aversion to tapping home equity, and the limited dissaving in retirement. In the past, any reluctance to turn wealth into income streams was mitigated by the fact that most retirement wealth came in the form of an annuity. This story has changed with the shift from defined benefit to defined contribution plans.

Intended bequests may also rise, because interest in bequests increases when people gain access to accumulated assets. Accumulating wealth out of current income to leave a bequest is very difficult but, if people receive a pile of wealth, leaving a bequest becomes a plausible option. Thus, intended and unintended bequests are likely to increase.

To test the impact of increased bequests – resulting in more inheritances – in the future, we assume that, among the parents of all NRRI households, 40 percent have a 401(k) plan and half of them – 20 percent of the total – leave an average bequest equal to 25 percent of the median 401(k) balance of $120,000. To reflect the fact that higher income households are more likely to receive an inheritance, we assume that 15 percent, 20 percent, and 25 percent of low-, middle-, and high-income households receive inheritances, following the pattern shown in Figure 2. All these inheritances are assumed to be received at age 50 and randomly assigned to the 81 percent of NRRI households that currently do not report receiving any inheritance. The additional 20 percent of sample households assumed to receive an inheritance is added to the 19 percent of households who reported receiving an inheritance for a total of 39 percent of households with an inheritance.

The results of this exercise show that even a substantial increase in bequests is unlikely to change the NRRI in a meaningful way (see Table 7). Overall, the NRRI still drops only slightly – from 51.6 percent to 50.7 percent.

Table 7. 2013 NRRI with Inheritances and Recalculated with Inheritances Increased, by Income Group

Income group	2013 NRRI	Inheritances increased	Percentage-point change
All	51.6%	50.7%	0.9
Low	59.5	58.3	1.1
Middle	52.2	51.1	1.1
High	43.4	43.0	0.3

Source: Authors' calculations.

Conclusion

While inheritances improve the financial situation of households that receive them, their impact on the overall retirement risk status of the NRRI population, while statistically significant, is modest. This result holds both when removing inheritances from households who have received them and when expanding the number of households that might receive inheritances in the future.

In the case of removing inheritances, the modest impact is due to the fact that: 1) only about one-fifth of households have actually received an inheritance, so most are unaffected; 2) among those receiving an inheritance, the amounts are relatively small compared to the households' total retirement income; and 3) most households receiving an inheritance were already well above the NRRI's "at risk" cutoff, so removing the inheritance is not enough to put them at risk.

In the case of increasing inheritances in the future, the effect is modest because: 1) only an additional one-fifth of households is assumed to receive inheritances; 2) again, the amounts are relatively small; and 3) many of the additional households assigned an inheritance were already "not at risk" for retirement, so giving them *more* money obviously does not impact their "at risk" status.

The bottom line is that, while anything that boosts households' assets is beneficial to their financial situation, inheritances are not likely to be decisive in determining retirement preparedness for many households.

Endnotes

1 The NRRI does not include wages, since labor force participation declines rapidly as people age.

2 In the case of housing, the projections 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. Both mortgage debt and non-mortgage debt are subtracted from the appropriate components of projected wealth. 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 amount. While inflation-indexed annuities are not widely used by consumers, they provide a convenient metric for calculating the lifetime income that can be obtained from a lump sum. 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.

3 Interest on both mortgage and non-mortgage debt is subtracted from the appropriate components of pre-retirement income.

4 We recognize that smoothing consumption is not the same as smoothing the marginal utility of consumption that theory suggests, but the concept of smoothing is central to the calculation of the targets.

5 For more on inheritance patterns, see Munnell et al. (2011). For studies on how inheritances affect wealth, see Coe and Webb (2009), Brown and Weisbenner (2004), Gale and Scholz (1994), and Kessler and Masson (1989).

6 If the projected amount of a household's inherited financial assets exceeds its total financial assets reported in the SCF, we cap our projections at the amount reported in the SCF.

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Contact Information

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: http://crr.bc.edu

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