

Appendix to “Crash and Wait? The Impact of the Great Recession on the Retirement Plans of Older Americans”

Brooke Helppie McFall

Imputations of expected present discounted value of future income flows

Labor earnings are assumed to remain constant at their real value in 2008 until the pre-crash expected retirement age. As an estimate of earnings in 2009, I use the average of inflation-adjusted 2007 and 2008 earnings if the respondent gave specific values for both, or if the respondent gave “range card” answers for both. If the respondent reported a value for either year, but no answer or a range card answer for the other year, that year's earnings was used. For respondents who did not give a specific value in either year, I use the 2008 earnings if the respondent answered with a range, and 2007 earnings if the respondent gave a range for 2007 earnings but did not report 2008 earnings.

The CogEcon study does not contain information about prospective Social Security wealth, so I estimate household Social Security wealth using the estimated present discounted value of Social Security benefits from the Cross-Wave Prospective Social Security Wealth Measures of Pre-Retirees available for HRS respondents (version 3.1). These measures are based on data provided by the Social Security Administration through 2004. These Social Security wealth estimates incorporate projected future earnings based on a weighted average of past earnings if the respondent had not yet reached normal retirement age by 2004 (Kapinos et al., 2009). I assign the CogEcon respondents estimated cell medians of individual Social Security wealth, based on claiming at normal retirement age, by age group by sex by 25 occupation groupings. For coupled CogEcon respondents for whom we have occupational categories for their spouses or partners, I sum the Social Security wealth estimates for both members of the household to obtain household Social Security wealth. In cases where a spouse's or partner's occupation or age are unknown, I use the cell median of household Social Security wealth for HRS respondents who are similar to the CogEcon respondent in terms of age, sex and occupation grouping.

It is important to note that I am assuming that the real value of Social Security wealth has been constant since 2004. Therefore, Social Security wealth figures will underestimate wealth for households in which respondents' annual earnings increased substantially between 2004 and 2009, or in which a respondent first qualified for Social Security benefits since 2004. However, because these older adults are likely to be past their peak earning years, and because I am using cell medians, I think this underestimation is likely to be quite small.

The CogEcon data also do not include much information about defined benefit pension wealth. For those who are not yet retired, the data only contain an indicator variable that is equal to one if either the respondent or the spouse/partner has a defined benefit pension. Therefore, I create defined benefit pension wealth estimates for the CogEcon respondents based on defined benefit pension wealth information in the HRS dataset Imputations for Pension-Related Variables (Final, Version 1.0), in the following manner:

1. For CogEcon respondents who indicated that they (and their spouse/partner, if in a relationship) do not have a DB pension, I assign a DB pension value of \$0.
2. For single CogEcon respondents who indicated that they do have a DB pension,
3. I assign the inflation-adjusted cell median (age group by sex by occupation group) of DB plan wealth, using the DB plan value calculated using the HRS respondents' expected retirement age. I match the cell medians to CogEcon respondents who were in the age range in 2009 that the HRS respondents were in in 2004. So, for example, a female CogEcon respondent in an

“Education, Training and Library” occupation who was aged between 45 and 49 in 2009 would be assigned the inflation-adjusted cell median DB pension wealth of female HRS respondents with DB pensions in an “Education, Training and Library” occupation who were aged between 45 and 49 in 2004.

4. For coupled CogEcon respondents who indicated that they or their partner have DB pension, but for whom the CogEcon data don't contain the information about the spouse or partner's occupation or age, I assume only the respondent has a DB pension, and assign an estimated DB pension value using the same method as that used for single CogEcon respondents.
5. For coupled CogEcon respondents who indicated that they or their partner have a DB pension, and for whom I have occupation and age data for both members of the couple, I calculate the age group by sex by occupation probabilities that each person has a DB pension (the number with non-zero DB wealth values over the total number of respondents in that sex by age by occupation group in the 2004 core HRS data). Then, I use the same method as described in items 2 and 3 to match CogEcon respondents to the cell medians of DB pensions from comparable HRS respondents. Next, I multiply each partner's cell median by his or her probability of having a DB pension and sum across both individuals in the household.

Calculation of $R_{j,SC08}$

$R_{j,SC08}$ is the age to which individual j would have to work to maintain his or her pre-crash sustainable consumption level. Specifically, it is calculated to satisfy:

$$\sum_{s=\tau}^{R_{j,SC08}} \left(earnings_{j,08} \left(\frac{1+\pi}{1+i} \right)^s \right) = \sum_{s=\tau}^{R_{j,08}} \left(earnings_{j,08} \left(\frac{1+\pi}{1+i} \right)^s \right) - (A_{j,09} - A_{j,08})$$

Where *earnings* is the earnings reported by individual j for 2008, $\pi = 0.028$, $i = 0.058$, τ is the respondent's age in year j , $A_{j,08}$ is the total financial and real estate wealth held in 2008, $A_{j,09}$ is the total financial and real estate wealth held in 2009, and $R_{j,08}$ was the pre-crash planned retirement age. Because my calculations are in discrete time, I first solve for the $R_{j,SC08}$ that is just smaller than needed such that the above equality holds, then I solve for that which is just larger than needed. Then, taking the difference between the total of the right hand side and the total of the left hand side for $R_{j,SC08}$ just smaller than needed as the numerator, and the difference between the total for $R_{j,SC08}$ just smaller than needed and $R_{j,SC08}$ just larger than needed as the denominator, I calculate the approximate fraction of the “just larger than needed” year is needed for the above equation to hold in equality. This probably introduces a small amount of measurement error into the regressor of interest, which is then calculated as $R_{j,SC08} - R_{j,08}$.

References

- Kapinos, Kandice, Charles Brown, Michael Nolte, Helena Stolyarova, and David Weir. 2009. Prospective Social Security Wealth Measures of Pre-Retirees. Public release. Version 3.0.
- Health and Retirement Study. 2005. Imputations for Pension-Related Variables. Final. Version 1.0.