Volume Title: Investigations in the Economics of Aging

Volume Author/Editor: David A. Wise, editor

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-90313-3; 978-226-90313-2 (cloth)

Volume URL: http://www.nber.org/books/wise11-2

Conference Date: May 5-8, 2011

Publication Date: May 2012

Chapter Title: Comment on "Economic Preparation for Retirement"

Chapter Authors: Robert J. Willis

Chapter URL: http://www.nber.org/chapters/c12432

Chapter pages in book: (p. 113 - 117)

———. 2009a. "The Level and Risk of Out-of-Pocket Health Care Spending." Michigan Retirement Research Center Working Paper 2009-218.
———. 2009b. "Methodological Innovations in Collecting Spending Data: The HRS Consumption and Activities Mail Survey." *Fiscal Studies* 30 (3/4): 435–59.
Juster, F. Thomas, and Richard Suzman. 1995. "An Overview of the Health and Retirement Study." *Journal of Human Resources* 30 (Supplement): S7–S56.
Kitagawa, E., and P. Hauser. 1973. *Differential Mortality in the United States: A Study in Socioeconomic Epidemiology.* Cambridge, MA: Harvard University Press.
Marmot, M. G., G. D. Smith, S. Stanfeld, C. Patel, F. North, J. Head, I. White, E. Brunner, and A. Feeney. 1991. "Health Inequalities among British Civil Servants: The Whitehall II Study." *Lancet* 337:1387–93.
Munnell, A., A. Webb, and F. Golub-Sass. 2010. "How Will Higher Tax Rates Affect the National Retirement Risk Index?" Center for Retirement Research at Boston College. IB#10-19. http://crr.bc.edu/images/stories/Briefs/IB_10-19.pdf.
RAND HRS Data. 2011. "Version K." Produced by the RAND Center for the Study of Aging, with funding from the National Institute on Aging and the Social Security Administration, March. Santa Monica, CA: RAND Corporation.
Scholz, John Karl, Ananth Seshadri, and Surachai Khitatrakun. 2006. "Are Americans Saving 'Optimally' for Retirement?" *Journal of Political Economy* 114 (4): 607–43.
Venti, Steven F., and David A. Wise. 2004. "Aging and Housing Equity: Another Look." In *Perspectives on the Economics of Aging,* edited by David A. Wise, 127–80. Chicago: University of Chicago Press.

Comment

Robert J. Willis

Hurd and Rohwedder's chapter presents an important alternative to other approaches for measuring the adequacy of preparation for retirement. It asks whether a couple's or individual's pre-retirement consumption path can be sustained with the financial wealth and rights to future pension and Social Security income that have been accumulated by the time of retirement plus potential future labor income. Most studies of adequacy focus on the proportion of pre-retirement income that can be replaced by income flows from retirement resources. If the replacement rate falls below an arbitrary threshold, typically between 70 and 85 percent, preparation is deemed inadequate. Studies using a replacement rate criterion have typically found alarmingly high fractions of households who are on a track that will leave them with too little wealth at retirement, forcing them either to suffer a lower standard of living during retirement, to reduce their pre-retirement

Robert J. Willis is professor of economics and a research professor at the Institute for Social Research and the Population Studies Center at the University of Michigan and a research associate of the National Bureau of Economic Research.

For acknowledgments, sources of research support, and disclosure of the author's material financial relationships, if any, please see http://www.nber.org/chapters/c12432.ack.

standard of living by saving more (and consuming less), or to work longer by delaying retirement.

While replacement rates continue to be used extensively by financial advisers, at best they provide a crude rule of thumb that adjusts the level of income that a household needs to maintain its pre-retirement standard of living during retirement for the lower tax rates, reduced work-related expenses, and reduced savings rates that it will face after retirement. Even if these adjustments were perfect, Scholz, Seshadri, and Khitatrakun (2008) point out that household-specific measurement error in lifetime income or standard of living is likely to lead to an understatement of the degree to which households are adequately prepared for retirement. For example, consider two households that have each saved exactly the optimal amount for retirement, have identical measured incomes, but differ in true lifetime income. Using the replacement rate methodology, one of these households will appear to have more than enough wealth for retirement while the other will be deemed inadequately prepared. Such measurement errors would tend to push an estimated "inadequacy rate" toward 50 percent, resulting in an overestimate if the true rate is less than 50 percent.

Of course, the degree to which a household is able to smooth consumption—or, more precisely, smooth the marginal utility of wealth—between the pre- and post-retirement phases of the life cycle is the theoretically relevant criterion for retirement adequacy. Scholz, Seshadri, and Khitatrakun (2006) have conducted the most ambitious attempt to date to calculate the optimal level of household retirement resources using a dynamic programming model based on life cycle theory and longitudinal data from the HRS linked to administrative earnings data from Social Security. They find that only about 16 percent of households have accumulated a smaller amount of wealth than the optimal level, as compared, for example, to an estimate by Munnell, Webb, and Delorme (2006), using a replacement rate criterion, that nearly 45 percent of households are at risk of being unable to maintain their standard of living following retirement.

The current chapter by Hurd and Rohwedder (hereafter HR) takes up where Scholz, Seshadri, and Khitatrakun (hereafter SSK) leave off. They exploit longitudinal data on consumption from the CAMS self-administered mail survey which they designed. The CAMS measures the consumption expenditures of about half of HRS households during odd numbered years in which the HRS core survey is not in the field and provides the only source of longitudinal consumption data in the United States. Hurd and Rohwedder first calculate an expected life cycle consumption path for each household, conditional on survival of each member to a given age, using the initial level of consumption at the time of retirement and mean percentage rates of change in consumption for couples or singles, as appropriate. The level and shape of these consumption paths are estimated nonparametrically. It is of independent interest to consider what insight these consumption paths

provide for the theoretical determinants of consumption suggested by life cycle theory. I shall return to this point later.

The adequacy of retirement resources is judged by whether the resources available to the household at the time of retirement are sufficient to pay for the simulated consumption profile. If not, the household will run out of discretionary wealth before the last survivor dies and will be forced to subsist on their annuity income from Social Security, DB pensions, or purchased annuities. The answer to this question depends, of course, on the date of death of single persons or the dates of death of each spouse in a couple. Since mortality is random, HR simulate the distribution of outcomes using survival probabilities based on survival functions for men and women estimated from data on actual mortality in the HRS. This is an important innovation in this chapter because it allows the adequacy of retirement resources to be judged in light of variation in education and marital status that affect longevity but are not measured in standard actuarial life tables. It would be of interest to push this approach further by incorporating measures of each person's health status at the time of retirement into the survival model.

In addition, after presenting results in which out-of-pocket medical expenses are only incorporated as expected values, HR add stochastic, serially correlated shocks to medical expenses to their simulation model to gauge the sensitivity of their results to the economic effects of uninsured health shocks. These simulations also incorporate variation in spending shocks by the same factors used in the survival model and, again, I would suggest that it would be interesting to introduce initial health into these simulations.

One key output of this simulation exercise is the probability of dying with positive wealth. As a measure of the adequacy of wealth, HR calculate the fraction of persons in a given group who have a 95 percent or greater chance of dying with positive wealth. Given this criterion, 77 percent of married and 49 percent of single people are adequately prepared for retirement. Single females constitute the only subgroup in which a majority is unprepared.

Earlier, I discussed the potential sensitivity to measurement error of adequacy measures based on the replacement rate. It is worth thinking about whether and how HR's measure is sensitive to measurement error. While error could occur in a number of ways, for simplicity I consider only error in the level of consumption at the time of retirement, c_0. Given the way that HR calculate the expected present discounted value of retirement consumption, a given percentage error in c_0 will lead to the same percentage error in the present value of retirement consumption.

In justifying their 95 percent threshold, HR write:

> The fraction of simulations in which wealth is positive at death does not provide the risk of any individual or household outliving resources. For example, the 63 percent in the case of single persons would be achieved if every single person had a 63 percent chance or if 63 percent of single per-

sons had a 100 percent chance of dying with positive wealth and 37 percent had no chance.

Continuing with this example, imagine a truly homogeneous group of single persons who all have common values of c_0 and all other economic magnitudes in the model and assume that they each face a 63 percent chance of dying with positive resources. In this case, zero percent are adequately prepared for retirement, according to the 95 percent criterion that HR use. Obviously, individual-specific errors in measuring c_0 will induce a spread in the simulated probabilities within this homogeneous group. With large enough error, some fraction of those with positive errors will have calculated probabilities of dying with positive resources that are 95 percent or greater. Thus, this measurement error has the effect of upwardly biasing HR's index of adequacy whereas measurement error creates bias with the opposite sign when using a threshold based on replacement rates, as I discussed earlier.

The potential of measurement errors to create bias in measures of adequacy of retirement preparation suggests the need to seek ways to correct for these errors or, alternatively, use measures that are resistant to error. It would not be too difficult to investigate the sensitivity of the fraction satisfying the 95 percent criterion for different plausible values of the error in c_0 or even to think of a way to estimate the variance of the error. Since there are many possible sources of error on both the consumption and income/wealth side of the model, however, it is not clear how useful such an approach would be. It would be helpful, however, to have some analysis of the sensitivity of the results from the simulations to measurement error. A more direct approach to measuring the risk of dying without assets by age at death would be to use data on estates from the HRS postmortem "exit interviews" following the death of the last surviving spouse.

The nonparametric consumption profiles estimated by HR are an important and innovative contribution of this chapter. If households were fully annuitized, theory implies that these consumption profiles should be flat, apart from slope imparted by a difference between the rate of interest and rate of time preference. However, because few households are fully annuitized, HR point out that economic theory implies that consumption profiles should be downward sloping. While this holds true, the negative slope is substantially less for married persons. For example, in figure 2.4 consumption by couples declines by 1.4 percent per year, but at widowing that rate increases to 5.1 percent per year. This difference brings to mind a result of Kotlikoff and Spivak (1981), who show that sharing of resources by a small number of family members—even just a husband and wife—creates an implicit annuity market that provides a substantial fraction of the longevity insurance that a full annuity would provide. Their point is reinforced if one considers the implicit disability insurance that one spouse provides for the other through caregiving. The relatively flat consumption profile of married

couples when both are living is consistent with the hypothesis of considerable risk pooling by couples.

In sum, I highly recommend this chapter both as an innovative addition to literature on the adequacy of retirement preparation and in pointing the way toward a rich new line of research on the implications of the life cycle model and related economic theories of marriage and the family for behavior after retirement. This work is made possible by the addition of longitudinal consumption data to the HRS pioneered by the authors. An interesting extension would be for the authors to team up with Scholz and Seshadri to create a dynamic programming model that covers the full life cycle of saving, covering pre-retirement preparation for retirement and post-retirement management of wealth and consumption.

References

Kotlikoff, Laurence J., and Avia Spivak. 1981. "The Family as an Incomplete Annuities Market." *Journal of Political Economy* 89 (2): 372–89.

Munnell, Alicia H., Anthony Webb, and Luke Delorme. 2006. "A New National Retirement Risk Index." An Issue in Brief, Center for Retirement Research at Boston College, no. 8, June.

Scholz, John Karl, Ananth Seshadri, and Surachai Khitatrakun. 2006. "Are Americans Saving 'Optimally' for Retirement?" *Journal of Political Economy* 114 (4): 607–43.