Forecasting Retirement Needs and Retirement Wealth

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PENN

University of Pennsylvania Press
Philadelphia

Printed in the United States of America on acid-free paper

10 9 8 7 6 5 4 3 2 1

Published by
University of Pennsylvania Press
Philadelphia, Pennsylvania 19104-4011

Library of Congress Cataloging-in-Publication Data
Forecasting retirement needs and retirement wealth / edited by
Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport.
p. cm. "Pension Research Council Publications"
Includes bibliographical references and index.
ISBN 0-8122-3529-0 (alk. paper)
1. Retirement income — United States — Planning. I. Mitchell,
Olivia S. II. Hammond, P. Brett. III. Rappaport, Anna M.
HG179.F577 1999
332.024'01. — dc21 99-41733
CIP

Chapter 8
Minorities Face Retirement: Worklife Disparities Repeated?

Marjorie Honig

Though income levels of the elderly have risen in the United States over the last three decades, the fraction of aged people in poverty is above that of many other adult age groups and is particularly high among subgroups within the elderly population. People from ethnic and racial minority groups are especially at risk: the poverty rate of elderly blacks, for example, is three times that of whites. In this chapter we ask whether this higher-than-average vulnerability to poverty in old age is the result of inadequate financial planning for retirement.

Whether households are able to forecast and then prepare adequately for retirement is a matter of considerable debate (Moore and Mitchell, this volume). Within this topic, there is additional reason for concern for the future wellbeing of minority populations. One consideration is that wealth holdings as conventionally measured are extremely low for nonwhites, both in absolute terms and as compared to those of the majority population. Thus, in 1993, the median white household held net worth (financial assets and housing equity) over 10 times larger ($47,740) than that of the median black or Hispanic household ($4,418 and $4,656 respectively).[1] Even when household incomes are held constant, large disparities in net worth remain between white and minority households in the United States.

Simple tabulations of household wealth are incomplete, however, because they omit the very important valuation of households' contingent claims on social security and employer pension benefits. In what follows, I remedy this deficiency by valuing such retirement income claims in order to include them in total wealth. The analysis uses the first wave of Health and Retirement Study data (HRS; see Chapter 1) to compare retirement wealth levels anticipated by non-Hispanic white, non-Hispanic black, and Hispanic households. My findings show that adding these previously overlooked retirement assets adds to measured wealth levels, yet wide disparities in wealth

remain. On the other hand these differences are substantially narrowed as compared to those observed when retirement benefits are excluded. Specifically, median anticipated retirement wealth for white households is $391,000 ($1992), compared to $189,000 for black households, and $158,000 for Hispanic households.

The analysis proceeds in steps. I first discuss household expectations data and the rationale for their use in the present study. I then detail how we construct the key components of anticipated wealth at retirement. Both the median and mean values of wealth are given, along with data on wealth composition in the aggregate, as well as separately for the three racial and ethnic groups of special interest here. It is also informative to compare expected wealth with earnings patterns. Finally, I show how including the value of future claims on employer pension and social security payments affects measured disparities in retirement wealth between white and minority households.

Household Wealth Expectations

The focus is on households currently on the verge of retirement, and assess how well prepared they are for their future in old age. Two questions guide the analysis:

- How different will white and minority households' net worth be in retirement?
- Will these differences be larger or smaller, if we take into account workers' future claims on employer pension and social security benefits?

I rely on survey responses regarding older workers' expectations to address these questions in order to focus on the adequacy of older Americans' financial planning for retirement. In particular, I examine how wealth levels relate to respondents' expectations regarding when they will retire and how much they will receive in work-related benefits. Social security and pension wealth are computed as of people's self-reported retirement ages; we then combine these wealth forecasts with self-reported financial and housing wealth. Our measures serve to illustrate household expectations regarding the financing of their own retirement period. These responses may potentially provide a different insight into household financial planning as compared to wealth values calculated from social security and employer records, projected to a uniform retirement age such as 62 or 65 (Mitchell, Olson, and Steinmeier, this volume; Gustman et al., this volume).

We are fortunate in having a very useful dataset—the HRS—with which we may evaluate a number of direct measures of household expectations. The relevant measures for the present analysis include the expected retirement age, the expected age of receipt and anticipated amount of social

security benefits, and the expected ages of receipt and anticipated benefit amounts from employer-sponsored pensions (on both current and previous jobs). Previous analyses that used earlier surveys concluded that people's responses to expectations questions regarding the timing of retirement, and the amount of benefits, corresponded quite closely to realizations (Anderson, Burkhauser, and Quinn 1986; Bernheim 1988, 1989). Our preliminary evidence on expectational measures in the HRS is equally corroborative. For instance, in waves 1 and 2 of the HRS, responses do not appear to have an unusually high random component compared to other survey information and are internally consistent (Honig 1994, 1996, 1998; Hurd and McGarry 1994, 1995).

In our view, asking people about their expected pension benefits provides useful information about how they assess their company pension plans. In the HRS, employed respondents were asked for detailed information on as many as three pension plans on their current jobs, and non-workers were asked about pensions on their last jobs. In all cases people were queried about pensions in their three most recent prior jobs. As a result, comprehensive pension expectations information is available for all those with current and past pensions. In contrast, efforts to gather employer-provided pension documents were successful for two-thirds of the pensions covering workers in the HRS, so that estimates of employer-provided information must be augmented by the researcher (Gustman et al., this volume).

Expected Retirement Wealth Levels

It is of some interest to detail how household wealth (in $1992) is measured in the HRS for the respondents' expected retirement ages.[2] For our purposes, we divide household wealth into four broad categories:

- Net financial wealth, including savings, investments, business assets, and non-residential real estate less outstanding debt unrelated to housing;
- Net housing wealth, or the market value of residential housing less outstanding mortgage debt;
- Expected pension wealth, or the present value of anticipated employer-sponsored retirement benefits;
- Expected social security wealth, or the present value of anticipated social security benefits.

Net Financial Wealth

Current (1992) values of financial assets, plus outstanding debt, are reported by the respondent designated by the household as the "financially responsible" member.[3] To obtain projected values of net financial assets as of his/her anticipated retirement date, each of the individual components

are projected forward using historical averages of real market returns to each component; using geometric averages of real returns over the period 1926–95 as reported by Ibbotson Associates (1996). Growth rates used to project each component of net financial wealth appear in the Appendix.

Net Housing Wealth[4]

This component of wealth reflects the net value of owner-occupied primary housing. Estimated housing wealth at the expected retirement date of the household head is the projected real market value of the housing less projected real debt, the assumption that housing did not appreciate in real terms between 1992 and the time of retirement permits use of the current value as the best estimate of a home's projected value. Projecting debt on the property is more complicated and requires information not directly available in the HRS. The survey does, however, include respondent estimates of the value of his or her first and second mortgages, home equity loans, and lines of credit against housing equity. To project housing debt, the outstanding balance on the mortgage or other debt as well as payments on the debt and their frequency may be estimated from survey information. Debt projection also requires the current interest rate on the debt; since this is not directly available, historical interest rates are used to proxy the current rate, allowing for the possible refinancing of mortgages over time.

Pension Wealth

Employer pensions are an important component of retirement wealth, and the HRS contains a great richness of data on these plans. Respondents are queried on up to three pension plans with their current employer, the major plan with their last employer (if the respondent was not currently employed), and the major plan in the three most recent jobs prior to the current or last job. The information provided by each adult respondent in the household from all plans is used to calculate the household's expected pension wealth.

The set of questions asked of respondents differs depending on whether a pension plan is a defined contribution (DC) plan, a defined benefit (DB) plan, or a plan that combines both types. Respondents with DC plans are asked for the current balance in their account, the amount they contribute to the account, and their employer's contribution. Respondents in DB plans are asked to report the amount they expect to receive, either as a specific dollar payment or as a percent of final salary, and their expected final salary. Respondents not currently working are queried about pensions on their last job. Those with DC plans are asked for the balance in their account when they left their last employer and the date of leaving the job. Those with DB plans are asked whether they are currently receiving benefits and, if so, the

amount; if not currently receiving benefits, they are asked when they expect to receive benefits. In the latter case, the amount and the expected date of receipt are requested.

Expected wealth at retirement is derived from this information. Current account balances in DC plans plus annual contributions of workers and employers are projected in real terms to each worker's anticipated retirement date. The retirement value of the expected DB pension benefit streams are derived (in $1992). For respondents with expected DB benefits from previous jobs, pension wealth at the time they expect to receive benefits is calculated and then discounted or projected to retirement. The projections include the value of benefits currently received from DB plans in previous jobs, as well as DC balances remaining with previous employers, to the retirement date.[5]

Inflation and interest rate assumptions used in these calculations (and for social security wealth, discussed below) are the "intermediate assumptions" used by the Social Security Trustees (Board of Trustees 1995) and age-specific life tables are derived from mortality data provided in Vital Statistics. I do not use race-specific mortality rates because I seek to separate the issue of differential financial planning among racial and ethnic groups from that of differential mortality. Using lower life expectancies would reduce the expected wealth of black and Hispanic households with private and public pension assets and retirement ages comparable to those of white households. Pension and social security wealth are computed as of each respondent's expected retirement date. In two-earner households, the pension and social security wealth of the member other than the head is then discounted or projected to the retirement date of the head, so that all wealth is evaluated at the anticipated retirement of the financially responsible member of the household.

Social Security Wealth

Social security wealth is calculated in a manner similar to that of DB pension wealth, with two exceptions. First, in accordance with the rules, social security benefits are assumed to be fully indexed to the cost of living, whereas among employer-pensions, only government pensions are assumed to be fully indexed. Second, since respondents are instructed to report expected social security benefits in 1992 dollars, anticipated social security benefits are assumed to be reported in real terms.[6]

Results: Expected Wealth at Retirement

The analysis sample includes 4,371 HRS households in which the "financially responsible" member worked within the last decade, reports race and ethnicity, and is neither self-employed nor reporting that he/she is retired.

TABLE 1: Expected Retirement Wealth by Wealth Decile, HRS Respondents (N=4,371)

Wealth Decile	*Total Wealth*	*Net Housing Wealth*	*Net Financial Wealth*	*Soc Security Wealth*	*Pension Wealth*
1	$ 41,850	$ 9,054	$ 4,036	$ 26,322	$ 2,438
		21%	10%	63%	6%
2	110,261	14,253	7,450	80,337	8,221
		13%	7%	73%	7%
3	160,671	30,585	16,700	92,696	20,689
		19%	10%	58%	13%
4	222,389	42,908	26,803	110,267	42,405
		19%	12%	50%	19%
5	289,430	53,797	42,375	126,543	66,715
		18%	15%	44%	23%
6	362,309	67,044	54,641	150,611	90,013
		18%	15%	42%	25%
7	455,352	88,191	75,466	164,569	127,126
		19%	17%	36%	28%
8	581,549	92,484	114,947	174,041	200,077
		16%	20%	30%	34%
9	773,362	104,067	177,011	184,338	307,945
		13%	23%	24%	40%
10	1,591,450	151,952	690,301	190,859	558,338
		10%	43%	12%	35%
Overall mean	491,539	69,264	132,686	134,641	154,948
		14%	27%	27%	32%
Median 10%	323,857	62,687	49,641	137,452	74,076
		20%	15%	42%	23%

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

The first sample restriction is necessary because only respondents reporting employment within 10 years were queried about their expected date of retirement.[7] Household heads defining themselves as self-employed on either their current job or, if not working, their most recent job, are excluded from the sample because the concept of retirement is less well-defined for this group, and because of the focus on employer pensions in this study.[8] Because black and Hispanic populations were oversampled in the HRS, there are 853 and 397 households in the minority sample, respectively, representing these racial/ethnic groups. (Ethnicity is self-reported in the survey.)

Expected wealth at retirement is described in Table 1, which reports values by wealth decile. The mean household expects to hold close to half a million dollars in wealth at retirement.[9] The wide disparity in wealth noted earlier for the U.S. population as a whole is very much in evidence for

households at retirement. The mean value of $1.6 million for the wealthiest decile is 38 times that of the mean value for the poorest decile ($42,000). Excluding claims on future social security benefits, households in the poorest two wealth deciles anticipate having under $30,000 in wealth at retirement, of which one-half is in the form of housing wealth.

Household wealth composition varies widely across the population. Thus social security comprises about two-thirds of total wealth for the poorest deciles, but its share falls steadily to just over 10 percent of the wealth for the highest decile. Pension wealth, by contrast, is under one-fifth of total wealth for households up through the fourth decile, and yet constitutes about one-third of wealth for the three wealthiest deciles. Financial wealth is also unequally distributed, remaining under 20 percent of total wealth for all but the three highest deciles. In contrast, housing wealth constitutes the second largest source of wealth for households in the bottom half of the distribution, while it comprises only 10 percent of total wealth among households in the highest decile.

The difference in the composition of wealth between mean and median households is striking. The expected wealth of the median 10 percent of the sample is about $325,000, of which one half is composed of social security wealth. Housing and pension wealth each contribute about a fifth, and financial wealth only 15 percent. Reflecting the greater importance of pension and financial wealth among households in the upper half of the distribution, the share of each of these components for the mean household is roughly equal to that of social security, with housing wealth comprising the remaining 14 percent.

As Table 1 reveals, broadening the definition of wealth by adding social security and pension assets to net worth has a dramatic effect on anticipated retirement wealth levels. For the mean household, for example, aggregate wealth increases more than two and one-half times, from just over $200,000 to $492,000. The impact is even greater for the median household: wealth nearly triples from just over $110,000 to $324,000. Before turning to a detailed examination of wealth differences between white and minority households, I first compare my findings on expected social security and pension wealth with values that could be obtained from information derived using administrative records.

It is interesting to note that mean social security and pension wealth derived from respondent reports of anticipated benefits, current account balances, and expected retirement age are surprisingly close to values estimated from social security and employer records. The comparison is made with data given in Moore and Mitchell (this volume; hereafter MM), where we first adjust that study's projected social security wealth values from $129,000 for retirement at age 62 (Table 2) to the implied wealth value at the mean expected retirement age of 63 in this sample. This adjusted value of $133,000 corresponds closely to the value of $135,000 reported here in

TABLE 2: Expected Retirement Wealth by Wealth Decile, Race, and Ethnicity, HRS Respondents

Wealth Decile	*Non-Hispanic White*	*Non-Hispanic Black*	*Hispanic*
1	$ 65,017	$ 14,120	$ 3,921
1	148,206	72,126	58,878
3	217,262	104,445	92,036
4	285,277	130,668	113,492
5	353,659	164,923	137,501
6	431,330	214,066	180,749
7	530,219	274,199	236,263
8	662,343	358,891	312,875
9	864,813	511,761	423,480
10	1,774,924	996,236	792,433
Overall mean	541,719	297,163	242,462
Median 10%	390,950	189,023	157,771
Number of observations	3,128	848	395

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

Table 1.[10] Similarly, pension wealth adjusted to $162,000 (from $156,000, Table 2, MM) is close to our value of $155,000.[11] This close correspondence at the mean between household expectations of future social security and pension wealth and values projected from employer and social security records suggests that pre-retirement households engage in some degree of financial planning for retirement. The evidence is not completely conclusive, however, since correspondence of values in the aggregate could be consistent with large but offsetting forecast errors at the individual household level. Whether this is true will be examined in future research.

Wealth holdings by race and ethnicity are provided in Table 2, separately for non-Hispanic white, non-Hispanic black, and Hispanic households in the HRS. Very striking, but perhaps not surprising, is the wide disparity in wealth between white and minority households. The mean Hispanic household expects to hold $242,000 in wealth at retirement, only 45 percent of the wealth of white households ($542,000). The mean black household expects to hold somewhat more wealth ($297,000), but still only 55 percent of the wealth of the mean white household. Hispanic and black households at the median of their respective wealth distributions fare even worse compared to white households. Hispanics anticipate only 40 percent ($158,000), and blacks only 48 percent ($189,000), of the wealth of the median white household ($391,000).

These disparities in anticipated wealth at retirement are pronounced and substantially larger than those in earnings patterns across the older population. For example, Table 3 provides wealth values for households in which

TABLE 3: Wealth, Wages, and Earnings by Race and Ethnicity, HRS Wage and Salary-Earners

	Non-Hispanic White	*Non-Hispanic Black*		*Hispanic*	
Wealth Measure	*$*	*$*	*% of White*	*$*	*% of White*
Mean					
Expected wealth	$ 556,443	$ 325,607	59%	$ 264,686	48%
Hourly wage	14.32	11.38	79%	10.07	70%
Annual earnings	32,563	24,121	74%	19,953	61%
Median 10%					
Expected wealth	403,317	214,452	53%	178,123	44%
Hourly wage	11.79	9.47	80%	7.91	67%
Annual earnings	27,181	20,626	76%	15,554	57%
Number of observations	2,820	730		311	

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

the head is currently employed as a wage or salary earner. Focusing on the median household, we see that wealth disparities remain large even if they are somewhat attenuated when nonworkers are excluded. Hispanic households expect wealth of $178,000, only 44 percent of the wealth of white households, and black households expect wealth of $214,000, only 53 percent that of white households. Racial and ethnic differences in hourly wage rates are much smaller, by contrast. The wage rate of the median black household head ($9.47) is 80 percent of the wage rate of the white household head ($11.79); the Hispanic wage ($7.91) is 67 percent of the white wage rate. Annual earnings also are more equally distributed than wealth holdings: thus earnings of black household heads ($21,000) are 76 percent of the earnings of whites ($27,000), and earnings of Hispanics ($16,000) are 57 percent those of whites. This pattern is similar for households at the mean of their respective distributions.

Why do wealth distributions differ so much between white and minority households? A partial answer is apparent when the components of aggregate wealth are examined in Table 4. Of the four broad components of household wealth, social security wealth reflects wage income most directly, and this form of wealth is distributed most evenly among the three racial and ethnic groups. The median black or Hispanic household expects about $100,000 in social security wealth, two-thirds that of the median white household. However, social security wealth constitutes less than one-half of the wealth of white households; over 40 percent of the balance, moreover, is represented by pension wealth. The median white household expects about $100,000 in pension wealth, more than three times that of black households, and six times more than Hispanic households. In other words, the lower

TABLE 4: Composition of Expected Retirement Wealth by Race and Ethnicity, HRS Respondents

Component	*Non-Hispanic White*	*Non-Hispanic Black*	*Hispanic*
Mean	*$541,719*	*$297,163*	*$242,462*
Housing	76,323	38,880	40,715
	14%	13%	17%
Financial	153,111	52,255	34,112
	28%	18%	14%
Social security	140,437	110,894	108,638
	26%	37%	45%
Pension	171,849	95,133	58,997
	32%	32%	24%
Median 10%	*390,950*	*189,023*	*157,771*
Housing	75,891	35,994	22,339
	19%	19%	14%
Financial	60,804	18,659	14,063
	16%	10%	9%
Social security	153,239	102,567	104,555
	39%	54%	66%
Pension	101,016	31,802	16,814
	26%	17%	11%
Number of observations	3,128	848	395

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

aggregate wealth of minority households results not only from lower wages but, to a much greater extent, from lower non-wage compensation. This consequence of being in a low-wage labor market is all the more striking when it is revealed among a population of mature workers on the verge of retirement.[12]

Differences in net worth also contribute to greater disparities in wealth. The median white household expects to hold two-and-one-half times the net worth of the median black household, and four times that of the median Hispanic household. These differences, however, are not as large as differences in pension wealth. Nonetheless, differential saving out of wage income (and inheritances), in addition to differences in nonwage compensation, contributes to the relatively greater disparities in aggregate wealth than in labor income between white and minority households. Why the racial/ethnic gap in household savings is so much larger than the gap in household income is a subject for future research.

The importance of broadening the definition of wealth to include future claims on social security and pension payments is demonstrated in Table 5.

TABLE 5: Racial and Ethnic Disparities in Retirement Wealth by Wealth Measure, HRS Respondents

	Non-Hispanic White	*Non-Hispanic Black*		*Hispanic*	
Wealth Measure	*$*	*$*	*% of White*	*$*	*% of White*
Mean					
Net worth: housing and financial assets	$ 229,434	$ 91,135	40%	$74,827	33%
Private wealth: net worth plus pension wealth	401,283	186,268	46%	133,824	33%
Total wealth: private wealth plus SS wealth	541,719	297,163	55%	242,462	45%
Median 10%					
Net worth: housing and financial assets	136,695	54,653	40%	36,402	27%
Private wealth: net worth plus pension wealth	237,711	86,455	36%	53,216	22%
Total wealth: private wealth plus SS wealth	390,950	189,023	48%	157,771	40%
Number of observations	3,128	848		395	

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

Here, wealth values are tabulated for alternative wealth measures. Focusing once again on the median household, whites expect to hold only $137,000 in net worth at retirement. Once pension wealth and particularly social security wealth are included, total wealth nearly triples to $390,000. Including social security and pension wealth has even more dramatic effects for minority households. Total wealth increases nearly three and one-half times for the median black household, from $55,000 to nearly $190,000, and more than fourfold for Hispanic households, from $36,000 to nearly $160,000. As a consequence of their proportionately greater holdings of pension and social security wealth, the relative disadvantage of minority households declines. The change is more pronounced for Hispanic households, whose wealth as a proportion of white household wealth increases from 27 to 40 percent. The relative position of black households improves more modestly, from 40 to 48 percent. As noted above, it is the inclusion of social security wealth, not pension wealth, that narrows the gap between white and minority households. The addition of pension wealth alone increases the relative disadvantage of both black and Hispanic median households.

The effect of adding social security and pension wealth to net worth is less

TABLE 6: Racial Disparities in Mean Wealth at Retirement by Wealth Measure Dual-Earner Households, HRS

	Non-Hispanic White	*Non-Hispanic Black*	
Wealth Measure	*$*	*$*	*% of White*
Net worth: housing and financial assets	$266,936	$143,844	54%
Private wealth: net worth plus pension wealth	498,836	319,193	64%
Total wealth: private wealth plus SS wealth	682,754	489,246	72%
Number of observations	1,426	253	

Source: Author's calculations. All values in 1992 dollars and calculated using HRS sampling weights.

striking for the average household, though it remains important. White household wealth doubles, and the wealth of both black and Hispanic households triples. Thus the relative wealth position of black households improves from 50 percent to 55 percent of white household wealth, and that of Hispanic households from 33 percent to 45 percent. Interestingly, the relative position of the mean, in contrast to the median, black household improves with the addition of pension wealth, although by less than when social security wealth is added. Overall, broadening the definition of wealth not only increases wealth values at retirement, by threefold or more for median households, but it also narrows racial and ethnic disparities. These effects are more pronounced at the median because social security wealth, the largest component of wealth for these households, is the most equally distributed.

The improvement in the relative position of the mean black household when pension wealth is added reflects relatively larger contributions by second earners to black household wealth. Wealth differences in white and black dual-earner (head and spouse) households are reported in Table 6.[13] The impact that second earners have on wealth differences between the mean black and white households is striking. Black two-earner households expect to hold 72 percent of the wealth at retirement of white two-earner households; among all households, in contrast, blacks expect to hold only 55 percent of the wealth of white households (Table 5). Black dual-earner households hold only 54 percent of the personal net worth of white dual-earner households, but the addition of pension wealth raises their relative position by 10 percentage points. The addition of social security wealth adds another 8 percentage points. Remarkably, the expected aggregate wealth of the mean black dual-earner household ($489,246) is 90 percent of the mean wealth of all white households ($541,719; Table 5). These findings suggest that, in many black households, the role of second earners in financing post-retirement consumption may be pivotal.

Conclusion

Our analysis compares retirement wealth anticipated by households, and it reveals wide disparities between non-Hispanic white households, and non-Hispanic blacks and Hispanics. Adding pensions and social security wealth to conventionally-computed net financial wealth measures narrows the disparity, but the gaps remain large. The median Hispanic household in the HRS anticipates holding retirement assets worth only $160,000, or 40 percent of the wealth of the median white household. The median black household expects only $190,000, or just under 50 percent of the wealth of white households. These differences suggest that post-retirement consumption will prove to be substantially lower for black and Hispanic households than for their white counterparts. These differences are in part due to lower labor market earnings, and also to lower non-wage compensation — pensions.

To some extent these differences may reflect a lesser ability to save during the worklife, perhaps due to lower income, and to some extent they may be due to inadequate retirement planning. Future research will examine to what extent minority households are able to offset low net worth by working longer and by relying on pension and social security wealth of second earners in the household.

Appendix

In this appendix we outline the key data and methodological issues raised in devising the retirement wealth figures discussed in the text.

Net Financial Wealth

This wealth category includes savings, investments, business assets, and non-residential real estate less outstanding debt unrelated to housing. Components included in the HRS and the rates used to project them, drawn from historical data and Moore and Mitchell (this volume), are as follows:

- Vehicle and RV wealth — depreciated over ten years using straight line depreciation.
- Checking, savings, money market accounts — real T-bill rate (0.5 percent).
- CDs, savings bonds, T-bills — real T-bill rate (0.5 percent).
- IRAs and Keough accounts — 50/50 corporate bonds and stocks (2.3 percent, 7.2 percent).
- Stocks, mutual funds — stocks (7.2 percent).
- Bonds — bonds (2.3 percent).
- Business equity — stocks (7.2 percent).

- Other assets, real estate, second home — constant in real terms.
- Less other debt, second home debt — constant in real terms.

Net Housing Wealth

This component of wealth reflects the value of owner-occupied primary housing less outstanding debt. I estimate wealth at retirement as the projected real market value of the housing less projected real debt. The current value of the property is used as an estimate of the projected real value and projected real debt is computed using several steps. Projecting housing debt requires information on the outstanding balance on the mortgage and on debt payments and their frequency, information available in the HRS, and on the current interest rate on the debt, which is not available in the survey. I thus use historical interest rates to proxy the current rate, allowing for the possible refinancing of mortgages over time. An average of annual interest rates from the time of home purchase (available in the HRS) to 1992 is calculated from the 1993 American Housing Survey (USDC 1994; hereafter AHS). The average mortgage rate in the AHS, 8.5 percent, is used if the year of home purchase is missing or the purchase date was prior to the years covered in the survey. Information from the AHS on tax and insurance payments, in addition to related information in the HRS, is used to calculate the effective mortgage rate, that is, the rate that actually services the debt. I use the average rate from the AHS for second mortgages and home equity loans (9.5 percent), since their year of issue is not available in the HRS. Missing values on mortgage payment amounts are imputed from the average on 30-year fixed mortgages relevant to the year of home purchase, if the latter as well as purchase price are available. In the absence of this information I assume that primary mortgages are paid off by age 70 and that secondary mortgages and home equity loans are paid off over ten years.

Pension Wealth

The detailed history in the HRS on jobs and pension coverage permits the construction of expected pension wealth that covers the current job, the last job for non-workers, and up to three previous jobs for each respondent. For respondents with pension coverage on the current job, I calculate pension wealth at the expected retirement date. For those with expected DB pensions from previous jobs, I calculate pension wealth at the time of expected receipt of pension benefits and discount or project this value to the expected retirement date. I project DC balances remaining with previous employers to retirement, as well as the value of any benefits currently received from DB plans.

To convert the expected flow of benefits from a DB plan into a stock of

wealth at retirement, I use age-specific survivor rates; in the absence of information about whether benefits will be paid to surviving spouses, I assume that all pensions are single-life and use the survival probabilities of the pension holder. I assume a 2.3 percent real rate of return (the historical return on corporate bonds) and use the inflation assumptions incorporated in the Social Security Trustees' intermediate assumptions. Because it is not known whether pensions on the current job are indexed for inflation, I assume that only government pensions are fully indexed and that remaining plans pay cost of living adjustments equal to one-half the inflation rate. I use similar assumptions for expected DB benefits from the most recent previous job, since respondents are asked about inflation adjustment only in the case of current benefits. I assume that benefits from prior jobs are not indexed. Resulting wealth values are then discounted to 1992 dollars since I assume that expected benefits are reported in future dollars.

Real returns on account balances in DC plans in current and previous jobs, and annual contributions to plans on the current job, are assumed to be four percent annually, approximating the historical average of a mixed-asset portfolio. Balances of account holders specifying investment in stocks or bonds exclusively are incremented annually by 7.2 percent or 2.3 percent, respectively. Wages, and thus the employer and employee contributions that are normally proportional to wages, are assumed constant in real terms, which is consistent with the observed flattening of the real-wage profile of older workers. For plans on previous jobs that are combinations of both DC and DB plans, respondents report balances in DC accounts as of the date of leaving the job. I assume these balances are outstanding only in cases in which the respondent expects future benefits from the DB component of the plan. I project these balances to 1992 assuming a four percent real rate of return and four percent inflation, then project by the real return to the expected retirement date.

Data Imputation

Calculation of pension and social security wealth in the HRS requires valid responses for queries on monetary values (such as current and expected benefits), account balances, and contributions, and on dates of expected benefit receipt and retirement. HRS respondents unable or unwilling to report a dollar value were permitted to chose a category from a series of range values. In such cases I impute an exact value using the mean of the valid responses in the interval chosen by the respondent. If categorical responses are missing, or in cases where expected retirement or pension receipt dates are missing, I use regression procedures to impute values. Imputations are based on linear regression models using age, race, sex, health, marital status, education, home ownership, earnings, income, wealth, ten-

ure, industry, and occupation. Tenure, earnings, industry, and occupation are specific to the current or last job. Missing values of expected social security benefits or date of receipt are imputed from regressions that include the variables specified above but in which tenure is accumulated across all jobs. Account balances and employer (employee) contributions in DC plans are added to regressions of employee (employer) contributions.

In cases where the expected retirement date is missing, the expected date of social security receipt is used; if this is also missing, the expected date of pension receipt from the first plan on the current job is used. If this too is missing, the imputed value of the retirement date derived from the regression model is used.

The author thanks Olivia S. Mitchell, Joseph Piacentini, Steven S. Sandell, and Mikki Waid for helpful comments; exceptional programming assistance was provided by Anne C. Krill. The research was supported by the Brookdale Foundation through a grant to the International Longevity Center and the PSC-CUNY Research Award Program.

Notes

1. *Economic Report of the President* (1998), drawn from the Survey of Income and Program Participation.

2. Details of individual calculations, assumptions concerning interest rates, inflation, and wage growth, and methods for dealing with missing values, are discussed in greater detail in an appendix.

3. "Financially responsible member" and "household head" are terms used interchangeably in the present discussion.

4. This section follows the methodology developed in Moore and Mitchell (this volume).

5. Details of these calculations appear in the Appendix.

6. There is no similar instruction regarding the reporting of expected pension benefits; thus I assume that future pension benefits are reported in future dollars.

7. In cases where information on expected retirement date is missing, imputed values are used for these respondents only.

8. However, pension and social security wealth of spouses who have worked in the last ten years, regardless whether they are self-employed or retired, are included in estimates of household wealth.

9. Values for the median 10 percent of the sample are mean values for households between the 45th and 55th percentiles of the wealth distribution.

10. Values are adjusted by geometric interpolation of projected wealth at ages 62 and 65 in Table 2 (Moore and Mitchell, this volume).

11. Other estimates of expected social security and pension wealth using HRS data but alternative growth and inflation assumptions are Smith (1995; mean social security and pension wealth in 1992 of $121,000 and $104,000, respectively, for the full HRS sample) and McGarry and Davenport (1998; mean pension wealth of $93,000 at the expected retirement age for a sample of current or recent wage and salary earners similar to the sample used in this analysis). While social security and pension

wealth values in Table 1 are comparable to values (adjusted for retirement age) reported in Moore and Mitchell (this volume), total wealth in Table 1, $492,000, is substantially lower than the comparable adjusted value of $585,000 (from $566,000, Table 2, col. 2; Moore and Mitchell). This discrepancy in estimates of total wealth is due almost entirely to a difference of $80,000 in financial wealth ($133,000 in Table 1, compared to an adjusted value in MM of $213,000). The exclusion in this analysis of households in which the head is self-employed results in lower estimates of financial wealth because self-employed workers hold more personal assets on average than wage and salary earners and also are likely to hold business-related assets. If self-employed households are added to the sample, mean financial wealth increases more than 60 percent to $217,000 and mean total wealth increases to $568,000, close to the adjusted values derived from Moore and Mitchell.

12. I have not included imputed values of employer health insurance, which, if included, would exacerbate the disparity between white and minority households.

13. The small number of dual-earner Hispanic households prohibits their inclusion in this comparison.

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