II. Data Quality and Applications

Racial and Ethnic Differences in Wealth in the Health and Retirement Study

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ABSTRACT

This paper examines wealth data in the Health and Retirement Study (HRS). In comparison with asset data in other major surveys, the quality of HRS asset data is high. Missing asset data does remain a problem, however, to which future HRS analysts must remain sensitive. Evidence is presented showing that it is no accident that asset data are missing, and solutions for imputing missing data are developed. Finally, racial and ethnic wealth disparities are large. These minority wealth disparities are due in part to differential inheritances and desired bequests as inequities perpetuate themselves across generations; the disparities are also due to lower minority incomes, poorer health, and an excessively narrow definition of wealth that excludes Social Security and employer pensions.

I. Introduction

This paper examines racial and ethnic differences in assets using the first wave of the Health and Retirement Study (HRS). Problems of adequate

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sample size combined with asset measurement of dubious quality have made research on the wealth positions of minorities very difficult, especially when the focus is confined to a limited age span, such as the preretirement years. Fortunately, the HRS oversampled blacks and Hispanics in order to allow researchers to test racial and ethnic differences.

This paper addresses data quality issues that arise with HRS asset data, especially item nonresponse and imputation of missing data. It then presents a look at racial and ethnic disparities in personal wealth by explaining multivariate descriptive models of differences among HRS households in their accumulated assets. Finally, the paper extends the measurement of personal wealth to include Social Security and private pensions, all of which are important sources of household wealth, particularly among middle-aged and older Americans.

II. Measurement of Wealth in the HRS

A. Missing Values and Data Quality

Assets are difficult for respondents to estimate, introducing errors in reported values and making nonresponse more pervasive.[1] This is a common problem affecting all surveys with significant wealth modules, a problem to which the HRS was not immune. The HRS survey design tried to mitigate the bias due to missing data. Respondents who initially refused to answer an asset question or who did not know the answer to the question were given a set of "greater than" or "less than" questions that placed their asset value within categorical limits (Range 1). Alternatively, respondents were shown a flash card with asset categories and asked to choose a letter indicating the interval within which their asset value lay (Range 2).[2]

Tables 1 and 2 summarize the extent of item nonresponse in the HRS asset modules, while Table 3 compares the HRS to the other major household surveys

1. Because of the importance of housing in private household wealth, a separate HRS module exists for housing. The knowledgeable respondent was asked separately about the existence and value of housing in the form of a house or apartment; second homes; farm or ranch; and mobile home. On the liability side of the housing balance sheet, values of first mortgages, second mortgages, home equity loans, and all mortgages on second homes were obtained. In addition to housing, assets are separated into the following categories in the HRS: other real estate; vehicles; business equity; IRA or Keogh; stocks, trusts, or mutual funds; checking, savings, or money market funds; CDs, government savings bonds, or treasury bills; other bonds; other savings and assets; and other debt. While my basic interest centers on the aggregate value of household net worth, subaggregates of components will also be examined. For example, as an index of the ability of households to meet emergencies or to absorb shocks, the total amount of liquid assets may be more informative.

2. To make the discussion more concrete, consider assets held in checking or savings accounts. Respondents who did not report an exact amount were first asked a series of up to three questions (starting with "Is the amount greater than $5,000?") that ultimately yielded the following categories; $0–$1,000, $1,000–$5,000, $5,000–$10,000, $10,000–$50,000, and over $50,000. If there was still no response, flash cards were used, with intervals of $0–$500, $500–$1,000, $1,001–$2,500, $2,501–$10,000, $10,001–$50,000, $50,001–$250,000, $250,001–$1,000,000, one million to ten million, ten million to 100 million, and more than 100 million. The flash card intervals were the same for all assets, while the ranges of the initial unfolding intervals varied by type of asset.

Table 1
Missing Values of Assets in HRS

Variable	No Asset	"Perfect"	Range 1 Unfolding Brackets	Range 2 Range Card	DK If Have	DK Value
House[a]	27.9	67.1	—	0.8	0.0	2.1
1st mortgage	55.2	41.3	—	0.3	0.4	2.8
2nd house	86.0	12.7	—	0.2	0.2	0.9
Other real estate	74.9	18.6	4.0	1.3	0.5	0.8
Vehicles	0.0	87.8	8.0	2.4	—	1.8
Business equity	81.9	12.0	3.9	0.8	0.4	1.1
IRA & Keoghs	58.0	30.8	6.6	2.0	0.6	2.0
Stocks, mutual funds	69.5	20.1	6.1	1.6	0.8	1.8
Checking-savings	17.7	60.2	13.0	4.0	1.0	4.2
CDs, Treasury	72.5	18.8	4.2	1.6	1.0	1.8
Bonds	92.2	4.8	0.9	0.4	0.9	0.7
Other savings	82.7	11.8	2.7	0.8	1.0	1.1
Other debts	59.7	34.6	—	1.3	2.2	2.2

a. Refers to house or apartment (not ranches, farms, or mobile homes).

Table 2
Conditional Missing Values of Assets in HRS

Variable	"Perfect"	Ranges	Don't Know
House[a]	95.7	1.2	3.1
1st mortgage	92.1	0.7	7.2
2nd house	90.7	1.3	7.9
2nd mortgage[b]	87.0	1.4	11.7
Other real estate	73.8	21.1	5.2
Vehicles	87.8	10.4	1.8
Business equity	66.4	25.5	8.1
IRA & Keoghs	73.3	20.6	6.1
Stocks, mutual funds	65.9	25.4	8.7
Checking-savings	73.1	20.6	6.3
CDs, Treasury	68.5	21.3	10.2
Bonds	61.3	17.0	21.7
Other savings	67.9	20.2	11.9
Other debts	85.9	3.2	10.9

a. Refers to house or apartment (not ranches, farms, or mobile homes).
b. On primary residence.

Table 3
Comparison with Other Major Asset Surveys

	Nonresponse on Ownership				Conditional Nonresponse on Amount			
	HRS	SIPP	PSID	SCF	HRS	SIPP	PSID	SCF
House	0.0	NA	NA	0.1	4.3	NA	NA	7.8
Mortgage	0.4	NA	NA	0.3	7.9	NA	NA	9.6
Other real estate	0.5	0.9	0.2	0.1	26.2	33.5	14.4	9.2
Business equity	0.4	NA	0.2	0.1	33.6	37.9	23.8	37.2
IRA & Keoghs	0.6	1.2	NA	0.3	26.7	NA	NA	11.9
Stocks	0.8	1.2	0.2	1.3	34.1	41.5	20.2	25.4
Checking	1.0	1.9	NA	0.1	26.9	13.3	NA	9.6
Savings		1.7	NA	0.2		16.8	NA	14.1
CDs	1.0	2.2	NA	1.3	31.5	NA	NA	25.6
Bonds	0.9	NA	NA	0.7	38.7	25.9	NA	24.7

that also tried to measure household net worth—the Survey of Income and Program Participation (SIPP), the Panel Study of Income Dynamics (PSID), and the Survey of Consumer Finances (SCF).[3] The bottom-line evaluation of the quality of asset data depends on whether households who report not having a particular asset are included. Since item nonresponse about possession of an asset is quite small (mostly 1 percent or lower in the HRS, for example), missing values across all households are mostly in the single digits. SIPP ranks the worst by a considerable margin, often with ownership nonresponse rates twice that of the other surveys. The other three surveys are more closely bunched, with PSID receiving the highest grades.[4] For most assets, the HRS scores marginally worse than the SCF in the extent of nonresponse on ownership, but it seems safely within an acceptable quality range.

B. Comparison with Other Major Asset Surveys

A less sanguine overall assessment emerges when the evaluation is limited to households with the asset. Housing assets yield the most positive results, with about 4 percent of HRS homeowners not answering an exact home value and roughly twice that percentage having trouble with the mortgage. Missing values are considerably larger among the financial and real asset categories, often on

3. The summary data for the other surveys are contained in Curtin, Juster, and Morgan (1988). That paper uses the 1984 SIPP and the 1984 SCF. I am grateful to Tom Juster for his assistance in interpreting these data.

4. The low rates of PSID item nonresponse on ownership in part reflect the greater aggregation of individual assets in the PSID questionnaire.

the order of 30 percent or more. If the HRS is compared to the other surveys with respect to nonresponse on asset amounts, it once again outperforms the SIPP, but does not do as well as the PSID. The competition is more even with the SCF, which appears at first blush marginally better than the HRS.

This comparative evaluation of item nonresponse is incomplete, however, because it fails to consider the additional data obtained from the HRS bracket questions following an initial nonresponse. In my view, the HRS received an enormous yield from these bracket questions. For example, a 34 percent nonresponse on stock value was converted to 9 percent by both bracket methods. Similarly, in many of the financial asset categories, HRS item nonresponse on value was reduced by 75 percent. This point is important when we compare these surveys, which differ in their use of follow-up bracket questions. The PSID, which also relied on unfolding brackets (Range 1), is most similar to the HRS experience. The PSID was also able to convert 75 to 80 percent of the initial nonresponses into categorical responses.

However, the SIPP did not use any bracket questions, and the SCF apparently employed them only sparingly (converting only 5 percent of the cases). If the HRS final "don't know" values are compared to nonresponses in the SIPP and the SCF, the HRS scores extremely well. For example, the HRS has a 9 percent conditional nonresponse in stocks, compared to 42 percent in the SIPP and 26 percent in the SCF. While knowing that a value lies within some prespecified range is not equivalent to having an exact value, it is extremely valuable, especially for imputation. With the extensive use of these follow-up bracket questions, the HRS further improved its position relative to the SIPP and moved significantly ahead of the SCF.

C. Imputation of Missing Values

Since 42 percent of HRS households have at least one missing asset value, missing asset data is a problem that must be confronted by analysts whatever the ultimate quality assessment. While there are a number of imputation procedures available, not all are equally appropriate for assets, where the distribution of possible values is inherently constrained. For example, most assets cannot be less than zero, and the frequent use of brackets imposes varying upper and lower bounds. Since one of my prime interests centers on the distribution of assets in the population, imputation should also have variance-preserving properties. In this paper, hot-deck imputations of missing asset values were computed. The great advantage of hot decks is agnosticism about functional form, relying implicitly on the functional form among the donors. The covariates used to impute specific asset categories varied depending on the range width and thinness of the sample of potential donors.[5]

The extensive use of bracket follow-up questions significantly reduced the extent of missing HRS asset data. These bracket responses also greatly improve

5. The most extensive list of covariates included race, Hispanic, education (0–11, 12–15, 16 or more), married, working, a law or doctor's degree, quintiles of family income, and quintiles of housing equity.

Table 4
Mean Value of HRS Imputed Assets by Type of Imputed Household

	Owners of Assets				
Category	Valid Data	Range 1 Unfolding Brackets	Range 2 Bracket Cards	DK Value[b]	DK Value[c]
House[a]	111,689	—	109,450	94,421	97,489
1st mortgage	43,862	—	43,127	40,363	44,172
Other real estate	128,341	180,901	332,469	100,136	199,789
Vehicles	12,556	20,041	23,604	10,590	18,481
Businesses	158,824	357,765	298,404	266,540	468,460
IRA's, Keoghs	42,470	48,847	78,131	48,172	54,465
Stocks	58,838	74,710	108,676	78,864	105,683
Checking, savings	15,620	19,421	36,974	24,971	27,228
CDs, government bonds	25,202	30,922	88,241	25,353	30,861
Bonds	43,545	61,445	62,014	50,370	44,712
Other assets	50,528	53,257	168,513	50,181	125,189
Other debts	8,399	—	6,145	6,164	8,164

a. Refers to house or apartment (not ranches, farms, or mobile homes).
b. Imputed using valid data respondents as donor pool.
c. Imputed using Range 1 and 2 respondents as donor pool.

our ability to assign missing values. The direct benefit in imputation flows from knowing that values lie within some narrow prespecified range. The indirect benefit is that the bracketed responses constitute a more appropriate donor pool (than would exact-answer respondents) for the imputation of any remaining nonresponses. In the remainder of this section, the implication of these benefits for imputing missing asset values is explored.

Depending on the type of information available, there are three imputation branches through which HRS households filter. Among initial nonresponses, some households provided relatively broad categories within which their assets lie (Range 1), others used the more detailed categories in the bracket card (Range 2), and some supplied no clue at all (final nonresponse). Imputed values differed in a systematic way across these three types of HRS households, revealing the potential for serious understatement with conventional imputation methodology. Table 4 provides means for all valid data (that is, exact answers) alongside my predictions for the different categories of missing values. These categories include the unfolding brackets and bracket cards as well as two sets of estimates for the final nonresponses. The first set imputes the final nonresponses from valid data respondents and is equivalent to the standard asset imputation performed in Census surveys such as the SIPP. Alternatively, the second set uses the bracketed respondents (Ranges 1 and 2) as the donor pool for the final nonresponses.

My point that imputation is a very serious matter when computing HRS net worth can best be illustrated by comparing valid data with means imputed for

the bracketed responses. With the exception of home equity, bracket-response households have much higher mean assets than those who reported their values. For example, the value of the average nonhousing asset is more than twice as high for the imputed bracket response than for the valid data responses. These discrepancies are particularly striking for other real estate and business equity. For example, average imputed business assets for the unfolding-bracket respondents total $358,000, compared to a valid data mean of $158,000.

The higher imputed means for the bracketed respondents are not surprising, because it simply confirms the conventional suspicion that those reluctant to report are households with more valuable assets. Their reluctance may be captured in part by household attributes, such as family income, used in any imputation algorithm. However, their nonresponse may also be correlated with the unknown value of assets, raising the specter of the standard sample selection problem. Indeed, imputations for these bracket-response households that do not take into account the fact that values lie within certain limits indicate that nonresponse, conditional on covariates, is definitely not random. For example, mean nonhousing imputations for these bracketed households are 70 percent higher using the brackets than when they are ignored in imputation. Apparently, standard imputation algorithms, even those with a long list of personal attributes, substantially understate actual asset values. In contrast, HRS brackets mitigate the severity of random nonresponse by greatly limiting the quantitative uncertainty about what the true values are.

A similar, if less striking pattern, exists between the two types of bracket responses. Because bracket cards use more detailed categories, especially for very valuable assets, they should produce more accurate and higher estimates of asset values. Imputed mean assets are generally larger for bracket-card than for unfolding bracket imputations. This is consistent with my hypothesis that standard imputation models will seriously understate the true net worth of nonresponding households.

A glaring discrepancy in Table 4 occurs between the bracket means (of either type) and the imputed averages obtained for final nonresponse households when valid data respondents are used as the donor pool. For example, the average bracketed imputation exceeds these final "don't knows" by 62 percent. Since final "don't know" households are the most resistant to reporting their assets, a simple selection model implies that, if anything, they should have the highest imputed assets. Instead, we assigned them the smallest means among the imputed households. While valid data respondents represent the standard donor pool in conventional asset imputation in surveys such as the SIPP, our results suggests that this pool seriously understates net worth. Because they were also initially reluctant to reveal their assets, a more representative pool of donors for estimating final "don't know" values are the bracketed respondents. These imputations, contained in the final column of Table 4, substantially increase our estimates of assets for the final "don't know" cases.

Item nonresponse and missing values are two stepping stones in the assessment of data quality. After making the adjustments to the original HRS data described above, how well does HRS match up with aggregate personal net worth among households in this age-range? There exists no gold standard among alternative

surveys, so the truth is not known. Fortunately, Curtin, Juster, and Morgan (1988) recently conducted an extensive comparison of SIPP, PSID, and SCF estimates of personal net worth and contrasted those estimates with those obtained from federal flow-of-funds data (FOF). By complementing their work with my own contrast of the HRS and the SCF, some insight about how the HRS stacks up against the other major net-worth surveys can be obtained.

The Curtin et al. evaluations were extremely detailed and will be only briefly summarized. Using 1984 data, personal net worth was significantly higher in the SCF than in either the PSID or the SIPP, but the SCF household survey closely approximates FOF data at least for the aggregates. Since SCF and FOF totals are about the same, the SCF can be taken as the benchmark for the other household surveys. Using this benchmark, total PSID assets were 79 percent and SIPP 61 percent of aggregate SCF net worth. While there are a number of reasons cited for the differences among the three household surveys, the authors rely principally on the ability of the SCF to sample very high-income households where a disproportionate amount of wealth is concentrated. SIPP's poor performance relative to any of the alternative surveys raises serious questions about its usefulness for research on wealth.

Table 5 compares HRS asset values with inflation-adjusted means obtained from households aged 51–61 in the 1989 SCF.[6] HRS net worth is $238,000, 84 percent of the $282,000 estimated in the SCF. This comparison implies that the HRS does a better job than the PSID in approximating the national totals in either FOF or the SCF. Like all the other surveys, the HRS produces much larger (and presumably more accurate) national estimates of personal net worth than the SIPP does.

While these comparisons of the aggregates are encouraging, some of the subcomponents in Table 5 differ by a wider margin than the totals. To a large extent, these differences parallel those found in the earlier Curtin et al. paper between the SCF and the other household surveys.[7] The largest discrepancies apparently reflect SCF oversampling of high-income groups in combination with a concentration of very high real assets values within that strata. For example, the largest disparity involves business equity where HRS is only 62 percent of SCF. However, in this category, PSID (SIPP) estimates were only 60 (35) percent of SCF estimates. While less extreme, HRS primary house equity is also low compared to SCF primary house equity (82 percent).[8] Given the extreme heterogeneity of high business and housing values, household surveys will understate mean values unless high-income groups are oversampled. The HRS, the PSID, and the SCF produce similar estimates of aggregate financial wealth, but they do differ in the components that comprise financial wealth.[9] This suggests that household surveys

6. I am grateful to Tom Juster for producing the SCF numbers used in Table 5. The total SCF numbers were adjusted to exclude the cash value of life insurance, which was not included in the HRS totals.

7. For example, vehicle values in the HRS are 71 percent higher than car values in the SCF. Curtin et al. report that PSID (SIPP) equity is 63 (33) percent larger than SCF car equity. Apparently, the SCF systematically understates car equity.

8. While home equity is also lower in the PSID (89 percent) and the SIPP (92 percent), their deficits are no where near as large as those of the HRS.

9. The major difference in Table 5—bonds—simply reflects noncomparability of the category between the two surveys. Government bonds are excluded in the HRS total but included in the SCF.

Table 5
Comparison of HRS and SCF

	HRS	SCF
Total net worth	238,460	282,372
Vehicles	13,525	7,881
House equity	68,346	82,970
Liquid assets	22,707	25,025
IRA and Keogh	19,006	15,012
Stocks, mutual funds	20,187	15,640
Farm business equity	40,478	67,600
Bonds	3,209	13,142
Other assets	10,201	15,151
Other debts	3,302	3,703
Other real estate[a]	48,405	49,772

a. Includes second house in HRS.

may produce reasonably reliable estimates of total financial assets, but more caution should be exercised when dealing with specific financial instruments.[10] HRS aggregate estimates of net-worth data compare extremely well with estimates using data from other household surveys, but legitimate concerns can be raised in all these household surveys, including the HRS, the more disaggregated the asset.

III. Racial and Ethnic Disparities in Net Worth

Disparities in net worth typically far exceed those using wages or income so that asset-income ratios increase rapidly with income. Partly due to poorer data, but also because asset accumulation reflects a very complex set of behaviors, we know far more about racial and ethnic income deficits than about the corresponding wealth disparities and why the two do not match up. In this section, I document the size of racial and ethnic differences in wealth and explore univariate and multivariate models of differences among HRS households in their accumulated assets.

The reasons why ethnic and racial minorities have low net-worth income ratios may flow from three sources. Initially, wealth disparities can be perpetuated across generations as better-off parents give larger financial inheritances to their children. Similarly, the desire and ability to leave bequests to your own children

10. The major unresolved puzzle is that all the household surveys have smaller total financial assets than FOF data. The reason why no firm conclusion can be reached about which is more accurate is that FOF estimates must separate out non-household savings. Additional research is needed to resolve this important question.

can further differentiate asset accumulation by socioeconomic class. In between, racial and ethnic groups may save at different rates. Indeed, a major research puzzle is why the poor seem to save so little. Such savings differences could result from lower permanent income or poorer health among minorities, taste differences operating through time and risk preferences, high old-age income replacement rates through social insurance and pension programs, more extensive family support networks, and asset tests in means-tested social insurance programs that discourage asset possession. Fortunately, the HRS has data relating to all the factors mentioned in this paragraph.

Table 6 presents HRS estimates of mean and median net worth by race and ethnicity. This table highlights the salient characteristics of the American wealth distribution. First, much more so than income, the distribution of wealth is severely skewed. Mean net worth is 2.4 times the median, suggesting that the bulk of wealth is concentrated among relatively few households. Second, race disparities in wealth are enormous, far outdistancing racial income differences. For every dollar of wealth a middle-aged white household has, a black household has 27 cents. This racial wealth ratio compares to a male income gap of roughly 60 percent in this age-range (Smith and Welch 1989). As large as this racial wealth deficit is, the gap has actually narrowed over time.[11] Hispanic households do somewhat better with 11 percent higher wealth than black households have. But the Hispanic wealth deficit is also large (30 percent of white households). The sizes of these racial and ethnic wealth disparities are not appreciably different if medians are used as the yardstick, indicating that they do not flow simply from the uneven distribution of wealth.

Table 6 also separates personal wealth into its major subcomponents. Whites have more wealth in all categories, but their advantage is smallest in home equity and largest in financial and real assets. Approximately half of the aggregate net worth of the two minority groups consists of home equity, compared to 32 percent among whites. Racial and ethnic differences in home equity reflect both different rates of homeownership and home values. While 79 percent of HRS white households own their homes, 59 (60) percent of blacks (Hispanics) are homeowners.[12] Homeownership is particularly salient for Hispanics since their housing values are only 16 percent less than those of whites. In contrast, not only are white homes worth 60 percent more than black homes, white households are most likely to have paid off their mortgages.

Financial assets of the average black or Hispanic household are stunningly low, apparently a pattern that has persisted for a long time (see Terrell 1971; Smith 1980). Summed across all forms of financial wealth, the median black household has only $400; the median Hispanic household fares even worse with only $78.

11. For example, Sobol (1979) reports black-white ratios of median net worth for 45–59 year old men in the NLS data of .08 (1966), .09 (1969), and .13 (1971), compared to .21 in Table 7. Similarly, Blau and Graham (1990) report a racial difference in mean net worth of .18 using the 1976 Young Men's NLS. Finally, Terrell (1971), using 1967 SEO data, finds a racial wealth ratio of .19 across all age groups. See also Wolff (1992). Studies of Hispanic wealth accumulation are virtually nonexistent.

12. Black homeownership rates have grown relative to whites over the last 20 years. For example, Sobol (1979) reports that among those 45–59 years old, 78 percent of whites and 44 percent of blacks had some home equity in 1971.

Table 6
Net Worth by Race and Ethnicity

	Means			
	All	White	Black	Hispanic
Total net worth	238,544	263,739	71,587	79,658
Home equity 1st home	63,858	69,135	28,888	37,183
Home equity 2nd home	11,688	12,212	8,214	6,063
Financial assets	64,732	72,571	12,780	10,585
Real assets	101,565	113,176	24,623	27,991
Other debts	3,298	3,355	2,918	1,864
	Medians			
	All	White	Black	Hispanic
Total net worth	99,500	115,000	24,750	29,650
Home equity 1st home	45,000	50,000	12,350	15,005
Home equity 2nd home	0	0	0	0
Financial assets	12,500	17,300	400	78
Real assets	12,000	14,500	3,000	3,000
Other debts	0	0	0	0

For all practical purposes, the average middle-aged black or Hispanic household has no liquid assets at their disposal. This may be the central question that any plausible model of racial disparities in savings must explain—why do low-income minority families save so little? This is particularly so for those financial assets that most directly correspond to the central motives emphasized in economic models of saving—risk aversion and provision for the future. Among minority families, there are virtually no savings that seem directed at future income security during old age. For example, in a more detailed accounting, the minority deficit is especially large concerning those financial assets with a long-term investment component where the white advantage is tenfold in stocks and thirtyfold in bonds.[13]

Racial and ethnic groups may end up with different total net worth because they start with different permanent incomes. Permanent income is the source of personal savings and the accumulated assets those savings eventually generate. Even if savings rates were independent of permanent income, black and Hispanic

13. Real assets—cars, other real estate, and businesses—are the final subcomponent in net worth. Here, the minority deficits are as large as in financial assets. Not surprisingly, the deficit is concentrated in real estate and businesses.

Table 7
Mean Net Worth by Family Income Quintiles

Quintiles	All	White	Black	Hispanic
Highest	587,717	608,219	265,820	199,507
Next highest	241,494	253,222	108,516	147,346
Middle	169,886	180,110	91,570	91,281
Next lowest	123,293	135,655	55,006	64,267
Lowest	73,121	92,148	13,695	34,040

households would accumulate less wealth than white households for this reason alone. To illustrate the potential role of income, Table 7 lists average net worth evaluated at household income quintiles. For all groups, household income is an important correlate of assets. Across all households, net worth is eight times larger among those whose income ranks them in the top 20 percent compared to those in the bottom 20 percent. In this age-range, half of total personal wealth is held by the richest 20 percent of households.

This table simultaneously demonstrates that income is an important reason for racial and ethnic deficits, but that income-conditioned wealth disparities in assets remain large. With the exception of the lowest income quintile, black wealth averages about 40 percent of whites within quintiles compared to the 27 percent aggregate disparity. The exception to the general rule, the lowest quintile blacks, may not only spotlight an especially vulnerable group, but it may offer important clues about why the truly poor do not save. If left with only their own resources, the plight of the poorest black households is starkly demonstrated in this table. Their mean net worth is just $14,000, one-seventh of that of white households who also reside in the lowest income quintile. In the bottom fifth of the income distribution, the median black household has $175 net worth.

One of the key risks to successful aging rests in the complex two-way interactions between wealth and good health. Debates about the direction of causation have made conclusions about the relation of wealth and health of older populations difficult to pin down. We know that healthier households are wealthier ones. Is that simply because higher incomes lead to better health? Or does poor health restrict a family's ability to accumulate assets because of their limited ability to work or through rising medical expenses? Or perhaps neither direction of influence is important, and the association merely reflects some unobserved factor which makes some people healthier and wealthier. Even to try to answer such questions requires panel data (to average out individual differences) and good health and wealth information to isolate the reasons for the association. The HRS's unique potential is that answering this fundamental scientific question may now be feasible.

These sharp patterns contribute to racial wealth differences because blacks and Hispanics are more likely to be in much poorer health. For example, while more than a third of black or Hispanic households report fair or poor health, only one

in five white households so respond. In contrast, in the more positive end of the health spectrum, more than half of whites are in excellent or very good health, compared to a third of the two minority groups.

The real value of the HRS in understanding the health-wealth nexus will only be realized in subsequent rounds as the dynamics of the process unfold. However, some clues may be gleaned from the baseline by combining current status information with a question about how current health status compares with health status a year ago. Table 8 provides the results from that combination.[14] The patterns in this table are remarkably consistent. Whatever the ultimate resolution of the thorny issue of causality, baseline HRS data confirm earlier findings that the association between contemporaneous health and wealth is not trivial. The relationship is monotonic and quantitatively large—each step down in current health status significantly reduces net worth. In addition, current HRS assets are correlated both with current health levels and with changes in health. All transitions in Table 8 associated with improved health had higher assets, while those transitions into poorer health had lower assets.

An innovative feature of the HRS is a set of scaled expectation and attitudinal questions. Respondents were asked to rate the likelihood of some future event on a scale from zero to ten, where zero corresponds to no chance and ten certainty. A natural interpretation is that responses index the subjective probability of the event. The queried events vary from a respondent's mortality, changes in Social Security benefits, general and housing inflation, and macroeconomic circumstances. These scales are unique and have the potential of capturing some largely untested elements of the standard economic theory.

Table 9 summarizes the simple relation between these scales and net worth. One of the stronger patterns that emerge concerns the probability that the primary respondent will live to age 75. Increasing the subjective odds of surviving is strongly positively correlated with net worth. In this simple form, this relationship could reflect a number of underlying causes. First, it may simply mimic in another form the relation between health and mortality discussed above. Second, it may capture, in part, one of the core elements of the life-cycle model. Those with longer life expectancies are likely to have longer postretirement spans, which require more savings.

The first three economic expectations questions listed in Table 9 share the common pattern that the highest net-worth levels are enjoyed by those who are least certain about the future (that is, those with scale values in the middle of the distribution). This bunching in the middle is consistent with the view that uncertainty is an important motive for (precautionary) savings. However, the end-point comparisons, at least in this simple two-way relation, are more perplexing. Perhaps the most puzzling involves whether there will be an economic depression during the next ten years. If one so believes, then incomes and consumption are lower in the future than today and current assets should be higher. However,

14. For the purposes of this table, I assumed that health would move across only one threshold during a year. For example, those currently in good health with deteriorating health over the last year were in very good health last year. Similarly, those currently in good health whose health improved during the year were in fair health last year.

Table 8
Net Worth and Changing Health Status

Health Status		
Last Year	Current Year	Mean Net Worth
Excellent	Excellent	370,842
Excellent	Very Good	224,083
Very Good	Excellent	316,274
Very Good	Very Good	269,267
Very Good	Good	200,645
Good	Very Good	266,434
Good	Good	199,555
Good	Fair	160,338
Fair	Good	189,008
Fair	Fair	136,656
Fair	Poor	51,281
Poor	Fair	165,525
Poor	Poor	93,658

Table 9
Attitudinal Scales and Mean Net Worth

		Will Live to Age 75	Major Depression	Double-Digit Inflation	House Prices Go Up Faster than Inflation	Congress Will Make SS More Generous
No chance	0	97,532	200,379	190,884	211,179	244,052
	1	151,664	298,701	219,207	235,482	288,318
	2	189,488	408,268	242,860	217,362	266,764
	3	212,737	334,857	320,623	248,283	241,907
	4	128,628	242,768	263,956	251,043	177,687
	5	239,733	228,931	259,455	266,654	222,852
	6	211,097	226,065	262,989	209,438	348,307
	7	259,500	229,224	247,985	282,691	245,308
	8	299,333	185,493	217,667	263,198	192,203
	9	289,663	224,497	193,866	182,893	80,555
Certainty	10	244,746	137,885	147,203	176,006	139,628

Table 9 shows that precisely the opposite relation characterizes HRS respondents.

The question on what will happen to Social Security benefits in the future illustrates another plausible interpretation of these scales. To some extent, these scales may simply confirm that respondents make good guesses about the future. More HRS respondents than not believe that Social Security will become less generous in the future. Moreover, the belief in a less-generous program is positively correlated with initial assets.

One of the most remarkable relationships from these attitudinal variables involves the planning horizon. Respondents were asked the time period that was important when planning their savings and spending. The answers, which can vary from the next few months to longer than ten years, may be an excellent index of their time preference. Table 10 lists mean assets arrayed against these responses. The strength and monotonicity of the relationship are impressive. Mean net worth among those who plan only for the next few months is $142,000 compared to $374,000 for those at the other extreme with a horizon that is longer than a decade.

One of the most frequently cited reasons for lower savings among the poor is that they have higher time preferences for the present (that is, they have shorter horizons). The HRS, especially in its panel features, will eventually allow one of the first explicit tests of this hypothesis, but the baseline survey points to its promise. Consistent with persistent speculation, black and Hispanic households are more likely to have very short time horizons. For example, 28 percent of minority households compared to only 17 percent of white households report a planning horizon of only a few months.[15]

IV. Multivariate Descriptive Models of Total Assets

Asset accumulation is an inherently dynamic life-cycle process. Because of this, the HRS panel will be needed to explicitly test behavioral models about what motivates savings. With that strong caveat in mind, I next summarize descriptive regressions of cross-sectional differences in personal net worth. The models in Table 11 include as covariates most of the correlates of assets that have been presented previously in two-way form. Because of the extreme positive distribution of net worth, mean and median regression models are included in this table. Bootstrapped estimates of standard errors were computed for the median models.[16]

15. As part of its baseline design, the HRS included a set of experimental modules, some of which directly relate to savings behavior. The most direct are questions that attempt to tease out information about respondents' rates of time preference. Unfortunately, very few survey participants responded to these questions, producing mixed results at best. Based on the asset data alone, I would regard the time preference experimental module as a failure. The HRS also attempted to measure risk preferences, but the results were even more mixed. To measure risk preferences, respondents were asked to choose between a certain future income and a set of risky ones, all but one of which had higher present values. To the extent that they try to build up a nest egg, more risk-averse individuals will have larger net worth. The HRS data generally support this hypothesis, but the relation is not strong.

16. The bsqreg option in STATA was used with 50 replications.

Table 10
Time Horizon and Mean Net Worth

	Time Period for Savings Plans			
	All	White	Black	Hispanic
Next few months	142,181	167,679	46,923	83,892
Next year	184,031	205,980	67,543	57,751
Next few years	230,969	250,578	81,188	90,790
Next 5–10 years	273,762	291,058	108,823	83,163
Longer than 10 years	374,229	404,992	64,905	106,696

Because many of the multivariate estimates simply mimic those already described in the two-way tabulations, the results will only be briefly described. The principal difference that emerges is that the magnitudes of the differentials are scaled down from the bivariate relationship, but in most cases, they remain impressively large. For example, the regression in Table 11 shows a $375,000 mean net-worth deficit between the highest and lowest family income quintiles, compared to the $588,000 unadjusted disparity in Table 7. The effect of income for the median household is less than half as large, a direct reflection of the extreme positive skew in net worth. Income remains the most powerful variable in explaining racial and ethnic wealth disparities. When only household income is included as a covariate, the racial and ethnic race disparities fall by 25 percent.[17] Similarly, current health status remains a powerful covariate, with a $90,000 mean and a $35,000 median spread between those in excellent and those in poor health. These estimates do not answer the central causality question, but they do suggest that unraveling the wealth-health connection is a very high research priority.

While they are not the primary focus of this paper, Table 11 touches on a set of motives frequently emphasized in economic models of asset accumulation. For example, individuals were asked whether they expected their real incomes to go up, stay the same, or decline over the next few years. A basic prediction of the life-cycle approach is that one should save if one's income is high now relative to the future (Smith 1980; Deaton 1992). Table 11 provides strong circumstantial support for this view. Households with expectations of rising incomes have fewer accumulated assets. Similarly, the length of the respondent's planning horizon has a strong quantitative effect on asset accumulation. Forward-looking households have considerably more assets than short-horizon folks do, possibly indicat-

17. Table 11 probably understates income's role since only current household income measures are available in the HRS baseline. Permanent income, the theoretical relevant construct, can be computed when Social Security earnings histories are linked to the HRS household survey. As is well known, current income biases comparisons across social classes since, at any given income level, lower economic status groups have a higher fraction of transitory relative to permanent income. See Blau and Graham (1990) for evidence that both current and permanent income are important empirical determinants of asset accumulation.

Table 11
HRS Multivariate Model of Net Worth

	Means		Medians	
Variable[a]	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Family income quintile				
Next highest	26,504	1.58	18,820	6.12
Medium	61,962	3.38	41,949	10.1
Next lowest	106,353	5.34	69,351	11.5
Lowest	374,880	17.5	167,588	17.3
Health status				
Excellent	89,914	3.70	35,390	6.84
Very good	54,836	2.37	24,627	6.33
Good	31,250	1.41	15,548	4.67
Fair	53,450	2.35	10,935	3.33
Education				
12–15	14,314	1.09	13,510	4.92
College	138,590	7.71	53,430	8.39
Law/M.D./Ph.D.	153,291	2.42	38,311	0.73
Financial horizon				
Next year	−17,213	0.84	2,216	0.79
1–5 years	12,440	0.79	11,708	3.79
5–10 years	27,803	1.69	14,070	4.31
10+ years	72,479	3.24	23,041	4.91
Probably will live to 75+	1,623	0.84	467	1.53
Labor force				
Estimated age at retirement	−1,765	0.90	−1,410	2.61
Currently retired	−91,792	0.71	−74,380	2.11
Will never retire	−54,392	0.43	−92,242	2.68
Currently working	71,417	2.83	23,280	3.70
Region				
Northeast	30,491	2.05	9,867	2.34
Midwest	29,539	2.15	8,420	3.18
West	83,440	5.26	15,898	4.28
Have pension (current workers)	−89,777	6.46	−22,375	6.15
Expect salary to go up	−63,309	2.87	−24,628	3.72
Expect salary to stay same	−46,707	2.05	−14,656	2.13
Inheritances and bequests				
Leaving to heirs very important	85,517	5.79	12,189	3.60
Leaving to heirs somewhat important	56,319	4.43	8,548	3.20
Leaving to heirs different spousal opinions	83,117	2.78	4,933	0.53
Received inheritance	13,485	1.05	11,433	1.86
Value of inheritance	.3605	14.27	.4324	4.99
Black	−74,873	4.97	−22,767	10.3
Hispanic	−88,731	4.47	−18,952	5.88
R^2	.19		.17	

a. Regressions also include controls for birth cohorts, marital status, and missing value indicators.

Table 12
Prevalence and Value of Inheritances Received

	Percent Receiving	Recipient	
		Mean	Median
Trusts			
White	23.8	148,473	54,489
Black	4.7	74,603	37,681
Hispanic	4.9	137,439	47,117
All	20.7	144,663	53,015
Other transfers			
White	9.1	111,494	50,000
Black	2.3	137,302	65,107
Hispanic	2.1	53,493	49,844
All	8.0	113,761	52,692
Life insurance settlements			
White	5.3	96,099	53,015
Black	4.1	56,971	28,725
Hispanic	3.0	80,410	43,010
All	5.1	90,590	48,344
All forms			
White	34.3	148,578	58,839
Black	10.5	85,598	42,478
Hispanic	9.8	105,707	43,917
All	30.5	144,517	57,451

ing that household variation in rates of time preferences is important. Finally, one of the most controversial issues in the recent economics literature concerns the extent to which pensions and Social Security substitute against private savings. While not a direct test, Table 12 indicates that those with private pensions have significantly fewer personal assets in other forms.

Outside the life-cycle approach, the motive that has received the most attention in the economics literature is bequests (Abel 1983; Bernheim, Shleifer, and Summers 1985). HRS respondents were asked what importance they place on leaving an inheritance to their heirs. The possible responses ranged from very important to not at all. The bequest motive receives impressive confirmation in this model. Respondents who believe that leaving inheritances is very important have accumulated $86,000 more in assets than those who place no importance on bequests.

Intergenerational bequests may take the form of both human capital investments and financial transfers. With declining rates of return to human capital investments, families will initially specialize in these investments so that financial bequests will only kick in at higher income levels (Becker 1981). Consequently, significant asset accumulation for bequests may only be operative at high income

levels. The median regression in Table 11 supports this hypothesis. For the median household, the estimated effect on accumulated assets of believing that leaving inheritances is very important is only one-fifth of the mean differential. Similarly, when separate models are estimated by race and ethnicity, the mean effect for whites is six (four) times that estimated for blacks (Hispanics).[18] Finally, these race- and ethnic-specific models were used to estimate how much of net-worth differentials by race and ethnicity were due to differential desires for bequests. The racial difference in coefficients on the bequest preference questions translates into $53,000 less net worth for black households and $35,000 less net worth for Hispanic households.

Households may also differ in their net worth because of very different amounts of financial inheritances from their parents. Since they link generations, inheritances received and desired bequests represent a continuum and exhibit similar characteristics. Both are relatively uncommon events with a highly skewed distribution of receipts. Table 12 lists the prevalence of these inheritances in the HRS alongside the mean and median value among recipients.[19]

The typical household in the HRS age-range reports no financial inheritances in any form, but some households have been given a great deal. Only 30 percent received any financial inheritance, with a mean transfer of $44,000 across all households and almost $150,000 among recipients. Three (one) percent of all HRS households were given inheritances worth more than $292,000 ($625,000). Not surprisingly, there exist large demographic differences. For example, while almost one in three white households report a financial inheritance, only one in ten minority households have received any inheritances. Similarly, the amounts of these inheritances are quite unevenly distributed. Among recipients, the average inheritance is close to $150,000, three times its median level. The empirical estimates in Table 11 indicate that inheritances are also an important contributor to net-worth disparities among HRS households. For every dollar of inheritances received, total net worth increases by 36 cents.[20]

How well does the collection of these covariates account for the enormous racial and ethnic differences in personal net worth? This table simultaneously illustrates the power of the HRS as well as the difficulty of the question. For example, the remaining racial deficit in personal net worth is $75,000, a considerable improvement over the $203,000 raw differential. If black households had the same characteristics as whites, their total net worth would more than double, increasing from $74,000 to $186,000. As a percent of whites, black net worth would increase from 27 percent to 76 percent. Similarly, the original Hispanic

18. The estimated coefficients on believing that leaving inheritances is very important are $123,575 for whites, $17,469 for blacks, and $29,271 for Hispanics.

19. HRS respondents were asked whether they or their spouse had received inheritances or trusts, other transfers totaling $10,000 or more from relatives, or $10,000 or more as a beneficiary of a life insurance settlement. Within each category, the values of all such transfers in 1992 dollars were summed. In addition, a 3 percent real rate of return was assumed so that all values could be expressed in their 1992 equivalents.

20. In an alternative specification, the three components that make up inheritances were entered separately. The estimated coefficient on trusts was only slightly higher than the coefficients on the other two components.

disparity of $192,000 was reduced to $89,000, raising Hispanic household net worth from $85,000 to $188,000. As a percent of white households, Hispanic net worth doubled from 31 percent to 68 percent.[21] The encouraging side of the message is that a significant amount of the racial and ethnic differences can be explained by HRS variables. Tempering any temptation on the side of hubris, the magnitudes of the remaining racial and ethnic differentials are large.

V. A Broader Concept of Wealth

Social Security and employer pensions, often-neglected components of wealth, are not only quantitatively large, but are distributed quite differently across racial and ethnic groups. Private and public sector employer pensions are an important source of household wealth, particularly among middle-aged and older Americans. For example, 53 percent of currently working HRS respondents report that they are covered by a pension. Similarly, private pensions accounted for 12 percent of aggregate household wealth in 1982 (Curtin et al. 1988). Since pension wealth varies significantly across the population, ignoring it can affect estimates of the distribution of assets. Moreover, households may well adjust to accumulated savings in pensions by altering their personal savings in other forms. If so, excluding pension wealth may seriously distort our interpretation of household savings behavior.

Claims on future Social Security payments represent another large component of wealth for these households. Because of the universality of program coverage, Social Security is even more central than employer pensions. Social Security contains both regressive and progressive distributional consequences. The principal regressive element stems from tying payments to mortality, while the progressiveness results from the built-in decline in replacement rates with income.

Employer pension wealth is often ignored because it is difficult to measure in conventional surveys. This difficulty stems from the diversity of pension types, which in one popular form are a conditional future income claim and in another a currently held stock. The most basic distinction is between defined contribution plans (basically equivalent to a savings account) or defined benefit plans (a future flow, typically as a function of seniority and wages among other things).

Fortunately, the HRS made a determined effort to measure both Social Security and employer pension wealth. These sections are among the most detailed instruments in the survey and required considerable respondent time to complete. Two HRS estimates of pension wealth will eventually be available for current workers. The first,[22] and the one used here, comes exclusively from respondents, who are

21. Similar conclusions are reached with the median model. As a percent of white medians, black (Hispanic) median net worth would increase from 21 (26) percent to 75 (83) percent.

22. The second estimate combines information from both respondents and their employers. Respondents were asked to give their consent so that their employers could be contacted later to obtain the precise details of the pension plan. HRS staff will code these pension plans so that calculations of pension wealth are possible. Respondents provided their personnel data to plug into these plans: plan chosen, length of service, salary, expected age of retirement, and other relevant employment characteristics. By linking characteristics of the firm plan with the current attributes of the respondents, pension wealth can be computed.

asked their current accumulation for defined contribution (DC) plans and their expected initial income flow and age of receipt for defined benefit (DB) plans. Seventy-three percent of HRS workers report having a DB plan, 23 percent a DC plan, and 4 percent a combined plan.[23]

The HRS follows an identical procedure for each plan if current workers have multiple plans. For those not currently working, a similar battery of questions were asked about the last job that lasted at least five years. Finally, in the job history section, parallel questions exist for any pension plans associated with past jobs.[24] Computation of pension wealth first requires estimating current and expected pension incomes across all plans, past and present, for each respondent.[25]

Once benefit levels are estimated, translating them into pension wealth requires assumptions concerning real interest rates, expected inflation (for those plans without COLAs), and expected mortality. For this paper, age-, sex-, and race-specific death probabilities derived from vital statistics are used.[26] For simplicity, a real interest rate of 2.75 percent (see Smith [1988] for a justification) was assumed for pensions with COLAs and 6.75 percent for those without COLAs. The HRS also provides information that allows the computation of Social Security wealth. A similar procedure to that followed for private pensions was used to compute Social Security wealth in the HRS. In that survey, respondents were asked to estimate their future expected age of initial receipt as well as the expected payments.

Table 13 illustrates the effects of a more comprehensive definition of household wealth. In this age-range for all households, personal wealth represents 52 percent of all wealth, while Social Security constitutes 26 percent and pensions 22 percent. The impact on the median household is even greater. Of the three categories, personal net worth is the most unevenly and Social Security wealth the most equally distributed. The net result is that Social Security is especially important

23. Duncan and Mathiowetz (1984) conducted a methodological pilot study of 371 respondents in a Midwestern firm to assess the accuracy of household survey data on pension characteristics. They report that 97 percent correctly reported the existence of their pension plan, 90 percent the correct number of their years counted for pension benefits plus or minus one year, and that workers' reports of annual wages differed from employers' by less than 1 percent in aggregate. Using a similar data collection procedure in the Survey of Consumer Finances (SCF), Curtin, Juster, and Morgan (1988) report that estimates of pension incomes derived from employer plans were only 7 percent below those obtained directly from respondents when missing values were imputed for those who did not report their benefits.

24. We have to rely on respondents' answers for these past jobs since their prior employers were not contacted.

25. The complication arises because of extensive missing data, especially for expected future pension incomes. In many cases, 50 percent of the expected pensions are missing. The first step than involved imputing pension incomes for the nonresponses. These imputations varied by type of pension, number of plan, whether the plan was for a current or past job, and the personal attributes of the respondent. Separate models were estimated for defined benefit and defined contribution plans. The attributes included age, sex, race, age expect to receive pension, education, industry, union status, federal worker, state or local worker, seniority, and salary.

26. There is some new evidence (see Lillard, Brien, and Panis [1993]) that mortality is higher among those with low wealth. This correlation is not taken into account in these estimates. See also Shorrocks (1987).

Table 13
HRS Wealth Distribution

	Means			
	Net Worth	Social Security	Pension	Total
All	238,544	120,756	103,597	467,081
White	263,739	124,849	109,371	502,700
Black	71,587	93,632	65,332	231,048
Hispanic	79,658	94,043	39,221	218,212
	Medians			
All	99,500	115,436	40,981	320,928
White	115,000	120,218	47,000	349,718
Black	24,750	85,131	6,950	158,712
Hispanic	29,650	85,377	0	154,201

for the median household who has more Social Security wealth than personal net worth.

Broadening the wealth definition also has an enormous impact on racial and ethnic disparities in wealth. This impact largely flows from the equalizing effect of Social Security (which differs remarkably little across race and ethnicity). While Social Security comprises one-quarter of the total wealth of white households, it represents over 40 percent of the wealth of black and Hispanic households.[27] This broader wealth definition not only substantially alters the amount of wealth of HRS households, but it also significantly reduces minority disparities. With the inclusive definition of wealth, black (Hispanic) households have 46 (43) percent of the wealth of white households. While these disparities are still not small, they are considerably less than the original black (27) and Hispanic (35) wealth gaps using the more conventional personal net worth concept.

These data suggest that one explanation for large racial and ethnic disparities is an incomplete definition of wealth. As the wealth concept is expanded, these disparities narrow. When regressions equivalent to those in Table 11 were run with total wealth as the dependent variable (see Table A.1), we predicted blacks (Hispanics) to have $411,000 ($388,000) in total wealth if their characteristics were the same as whites. Controlling for characteristics, black (Hispanic) households have 83 (78) percent as much total wealth as white households do. However,

27. Racial differences in pensions are more substantial than those in Social Security, but less than those in net worth. The large pension difference takes place with Hispanics. The median Hispanic household has no pension wealth, reflecting the fact that many Hispanics work in sectors of the economy with little pension coverage.

even with the broadest wealth concept used in Table 13, racial and ethnic wealth disparities are a good deal larger than would seem justified by group differences in permanent income alone. Broadening the definition of wealth, therefore, does not fully resolve the puzzle of why low-income minorities save so little.

VI. HRS Wealth Distribution

A possible resolution of the puzzle may stem from the behavioral interaction between these wealth components. The array of social insurance programs that has been set up to protect individuals, especially those less well off, during their old age may have made it irrational for them to accumulate assets (see Hubbard, Skinner, and Zeldes [1992] for an insightful elaboration of this argument). Some of these social programs impose asset tests for participation, supplying low-income households with an incentive to divest assets in order to qualify. But the issue is more fundamental and extends to social insurance programs that are not income or asset conditioned. The combination of pensions and Social Security may have overannuitized low-income households who have little remaining incentive to save for a future that compares favorably with their present circumstances (Deaton 1992; Feldstein 1974).

VII. Conclusion

This paper examined the wealth data available in the first wave of the HRS. In comparison to the other major surveys with significant asset modules, the quality of HRS asset data appears to be high. As in all these surveys, missing asset data remains a problem to which future HRS analysts must remain sensitive. Evidence is presented in this paper that missing asset data is not random, and solutions for imputing missing asset data are developed. Finally, racial and ethnic disparities in wealth are large in the HRS. These minority wealth disparities are due in part to differential inheritances and desired bequests as inequities perpetuate themselves across generations, to lower minority incomes and poorer health, and to an excessively narrow definition of wealth that excludes Social Security and employer pensions.

Appendix

Table A1
HRS Multivariate Model of Wealth

	Means		Medians	
Variable[a]	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Family income quintile				
Second	42,709	2.41	46,742	6.42
Third	106,563	5.53	100,605	12.9
Fourth	184,592	8.83	166,177	16.6
Fifth	528,798	23.6	353,675	25.4
Health status				
Excellent	106,713	4.14	52,828	4.83
Very good	74,728	3.05	37,407	4.85
Good	45,616	1.94	24,468	3.20
Fair	61,153	2.53	17,670	2.68
Education				
12–15	38,265	2.75	43,577	8.77
College	223,136	11.74	156,542	15.6
Law/M.D./Ph.D.	200,215	2.98	25,917	0.74
Marital status				
Married	66,630	2.44	101,897	10.5
Partner	34,927	0.81	57,189	2.86
Separated	−51,572	1.37	2,221	0.20
Divorced	−62,212	2.10	−9,284	1.05
Widowed	−73,215	2.27	−2,243	0.22
Financial horizon				
Next year	−20,715	0.95	3,464	0.53
1–5 years	23,383	1.40	25,363	4.09
5–10 years	27,675	1.59	24,890	3.44
10+ years	78,395	3.30	33,239	3.18
Probably will live to 75+	2,403	1.18	2,188	3.32
Labor force				
Estimated age at retirement	−8,794	4.29	−10,487	9.46
Currently retired	−494,336	3.67	−622,864	8.87
Will never retire	−544,946	4.08	−707,324	9.81
Currently working	40,881	1.53	21,350	1.54
Region				
Northeast	35,689	2.26	18,412	2.09
Midwest	32,899	2.26	17,021	3.35
West	73,018	4.34	25,597	3.36

Table A1 (*continued*)

	Means		Medians	
Variable[a]	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Expect salary to go up	−69,051	2.96	−35,437	2.67
Expect salary to stay same	−54,761	2.27	−31,818	2.35
Inheritances and bequests				
Leaving to heirs very important	79,565	5.08	16,600	2.90
Leaving to heirs somewhat important	57,934	4.29	15,611	2.93
Leaving to heirs different spousal opinions	92,707	2.92	27,601	1.60
Received inheritance	11,986	0.88	11,945	1.46
Value of inheritance	.3517	13.1	.3373	3.63
Black	−91,569	5.73	−42,541	8.32
Hispanic	−110,383	5.24	−48,265	6.46
R^2	.29		.29	

a. Regressions also include controls for birth cohorts and missing value indicators.

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