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Racial and Ethnic Differences  
in Wealth Holdings and Portfolio Choices

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## **Summary**

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There are large differences in wealth across racial and ethnic groups, much of which remain unexplained even after controlling for income and demographic factors. This paper studies the issue of whether differences in saving behavior and rates of return on assets are a possible source of the differences in wealth. It uses data from the Health and Retirement Study to examine the differences in various components of aggregate wealth, including nonhousing equity, housing equity, financial assets, and risky assets. Additionally, it inspects differences in portfolio choices by race and ethnicity. It shows the equalizing impact of pension wealth and Social Security wealth to total wealth.

Descriptive tabulations of components of wealth highlight differences in housing equity that narrow at higher income quartiles while differences in nonhousing equity mostly widen as incomes increase. This result stems from large differences in financial asset holdings, particularly risky assets. The paper finds that at every income quartile and education level, the percentage of black and Hispanic households who own risky, higher-yielding assets is considerably smaller than that of white households. Thus, some of the racial wealth gap may be attributable to differences in saving behavior and choice of assets as evidenced in the smaller participation in financial markets by minority households. Their portfolio composition and low levels of wealth may affect retirement income under certain proposed changes in Social Security benefits.

## **Introduction**

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Income from individually accumulated assets is an important component of retirement income. For those aged 65 or older, asset income is the second most common source of income after Social Security retirement income. The fraction of people in that age group reporting some asset income increased from about one-half in 1962 to roughly two-thirds in 1998.<sup>1</sup> However, the proportions with asset income vary by race and ethnicity. In 1984 (the earliest year for which data on asset income by race and ethnicity are available), 73 percent of whites aged 65 or older received asset income compared with 31 percent and 38 percent of blacks and Hispanics.<sup>2</sup> The gap persists, with 1998 data showing that 69 percent of aged whites had income from assets compared with 26 percent and 33 percent of blacks and Hispanics. Not surprisingly, the average share of income from assets also varies by race and ethnicity. Since 1990, aged whites have received about a fifth of their income from assets compared with no more than a tenth for blacks and Hispanics.

Although wealth levels vary substantially by race, little of the disparity is explained by differences in income levels and demographic characteristics. In fact, the racial wealth gap far exceeds the income gap. The large empirical body of wealth studies (for example, Wolff (1998, 2000); Hurst, Luoh, and Stafford (1998); and Blau and Graham (1990)) report striking racial differences in wealth holdings, with white households owning at least five times the wealth of minority households.<sup>3</sup> However, white households have earnings, on average, that are just twice as much as minority households.<sup>4</sup>

Several studies try to explain the racial wealth divide. Smith (1995a), using 1992 data, reports that large racial disparities in household wealth are due in part to lower minority incomes, poorer health, and smaller inheritances. Blau and Graham (1990), using data from the 1970s, find that even after controlling for income and demographic factors, almost three-quarters of the black/white wealth gap remains unexplained and speculate that differences in intergenerational transfers and, to a smaller extent, barriers to the accumulation of home and business equity may explain the gap.<sup>5</sup> Altonji, Doraszelski, and Segal (2001), who also find that income and demographics play a small role in explaining the racial wealth gap, suggest that differences in saving behavior and rates of return on assets may be more important than intergenerational transfers in explaining the gap.

The available empirical evidence therefore attests to the size of the racial wealth gap and the finding that income and demographics do not adequately explain it. Only a few studies have addressed how saving behavior might affect wealth accumulation. For example, Hurst, Luoh, and Stafford (1998), using the 1984-1994 Panel Study of Income Dynamics (PSID), report that a large part of the racial differences in wealth accumulation can be attributed to differences in permanent income and portfolio composition. Smith (1995b) reports that minority groups had lower rates of asset accumulation even after extensive controls (income, health, bequest motive, and so on) in his examination of wealth accumulation patterns in the first two waves of the Health and Retirement Study (HRS).

This paper explores the issue of differences in wealth arising from differences in saving behavior. It focuses on a narrow band of the population—persons who are near retirement—(unlike Hurst, Luoh, and Stafford (1998) who study the general population)

in an effort to reduce the impact of age and cohort effects on wealth differences. It documents in greater detail than that provided in previous research the racial and ethnic differences for broad wealth measures such as net worth, pension, and Social Security wealth as well as for narrower wealth measures such as housing equity, financial assets, and risky assets. The paper follows much of the approach used in Smith's (1995a) pioneering paper on racial and ethnic wealth differences in the HRS.<sup>6</sup> However, it uses improved data that include employer pension data and Social Security wealth information derived from administrative data, rather than the self-reported data that Smith used. The paper takes a much closer look at differences in wealth components and also examines the portfolio composition of minority households. It thereby attempts to shed light on whether differences in saving behavior by race and ethnicity are a potential cause of the wealth gap.

Understanding how people save, including knowing whether certain people are more vulnerable in light of their saving choices, can tell us about their financial preparedness for retirement and help anticipate their economic well-being thereafter. In recent years, there has been a shifting of employer pension schemes from defined benefit (DB) to defined contribution plans (DC) as well as increasing interest in privatizing a component of the Social Security retirement system. Pension plans and Social Security are becoming or may become more like individual saving. Additional future research on this topic can eventually help gauge economic security for future retirees, inform the current debate on privatizing Social Security, and indicate how wealth inequalities might perpetuate themselves.

This paper:

- Discusses the data used here,
- Discusses the demographic and income characteristics of the sample,
- Describes differences in levels of various wealth measures by race and ethnicity,
- Describes the distribution of those wealth levels by race and income,
- Examines the portfolio composition of households by race, income, and education,  
and
- Presents some concluding comments.

## **The Data**

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The data used are from wave 1 (1992) of the HRS matched, when permitted by respondents, with Social Security administrative data and employer-provided pension information. The HRS is a national, longitudinal database that focuses on individuals who were born between 1931 and 1941. The survey asks questions that relate primarily to the respondents' health, wealth, retirement, and economic status. The HRS uses a bracketing technique to obtain wealth information from respondents, which results in high-quality data about wealth.<sup>7</sup>

Mitchell, Olson, and Steinmeier (1996) construct a variable for household Social Security wealth that is the present value of the Social Security retirement benefit payable in the form of an annuity from retirement until death. It is calculated for those who are not Social Security disability beneficiaries and for whom lifetime covered earnings are available. Approximately 70 percent of the respondents gave permission for matching their records with their Social Security earnings records. The authors made hot-deck

imputations for cases in which earnings information was not available for a spouse in a married household. The Social Security wealth variable used here is expressed in 1992 dollars and reflects Social Security wealth for the respondents' household as of the time of the survey.<sup>8</sup>

The HRS Level 1 Pension file makes available pension wealth from defined benefit and defined contribution plans from current and past employers computed under alternative scenarios. Of persons eligible for employer pensions, about 67 percent gave permission to obtain pension plan information from their current or past employers. The value of pension wealth as of 1992 is used here, which is based on the Social Security Trustees' intermediate assumptions regarding the interest rate, wage growth, and inflation. The HRS sample includes imputations made for missing pension wealth using group means calculated by race, education, and whether one is a primary or secondary respondent. A primary respondent in a household in the HRS is the one who is most knowledgeable about household financial matters, such as housing, assets, and liabilities. Married households have a primary and a secondary respondent; single households have only primary respondents.

The HRS oversamples black and Hispanic households as well as Florida residents. Our analysis refers to a household as a minority household if it is black or Hispanic. All the results shown here use household weights to describe a representative population. The analysis is done at the household level (as opposed to the individual level) and excludes from the sample cases in which only one spouse in a married household participated in the survey. It also excludes unmarried persons living together and those households for which no information on Social Security wealth was available. The final sample used here consists of 5,362 households, of which 3,895 are married households.<sup>9</sup>

## **Some Demographic and Income Characteristics of the Sample**

Selected demographic and income characteristics of our sample of 50- to 62-year-old households in the HRS are listed in Table 1.<sup>10</sup> The sample consists of a relatively older cohort than those used in most wealth studies.<sup>11</sup> Differences that surface in this tabulation provide a backdrop for understanding differences in patterns of wealth holding noted here as compared with other studies.

We study differences in wealth within an HRS sample based on a relatively narrow age range. In many wealth studies that report statistics on households of all ages, critics point out that it is hard to disentangle age, cohort, and time effects.<sup>12</sup> Although the sample is subject to these effects, they are less important in the sample used here. The racial and ethnic groups of non-Hispanic whites, non-Hispanic blacks, and Hispanics are defined by the race or ethnicity of the primary respondent. From here on, we refer to non-Hispanic whites and non-Hispanic blacks simply as whites and blacks. The “All” category consists of all races, including American Indian, Asian-Pacific Islander, and Others. These three subgroups are too small in our sample to make up an individual category.

More than 75 percent of white households are married with spouse present as compared with less than half of black households. This can be an important difference because marriage allows for pooling of resources and, in general, larger accumulations of wealth.



**Table 1.**  
**Selected demographic and income characteristics of households, by race and ethnicity (in percent unless otherwise indicated)**

Characteristic	All	White	Black	Hispanic
Married	72.31	75.87	47.37	64.87
Education of primary respondent				
Less than high school	23.31	18.44	42.38	59.16
High school graduate	34.89	37.37	29.07	17.21
Some college	19.41	20.01	17.18	16.00
College graduate	22.39	24.17	11.36	7.63
Education of spouse				
Less than high school	25.92	21.93	42.92	66.99
High school graduate	39.22	41.15	34.69	20.29
Some college	18.67	20.03	11.69	8.46
College graduate	16.19	16.89	10.70	4.26
Health of primary respondent				
Poor	1.96	1.58	3.94	3.00
Fair	9.58	8.76	11.34	16.90
Good	72.65	74.37	65.67	61.73
Very good or excellent	15.80	15.29	19.05	18.37
Health of spouse				
Poor	2.07	1.90	3.95	3.12
Fair	8.00	7.46	10.22	13.92
Good	75.23	76.44	69.04	64.24
Very good or excellent	14.70	14.20	16.79	18.73
Expect primary respondent to live to 75+				
No chance	5.83	4.78	8.28	15.45
Absolutely certain	20.75	19.90	27.42	21.55
Expect spouse to live to 75+				
No chance	5.23	4.65	5.98	14.58
Absolutely certain	21.89	21.37	26.67	22.42
Born in United States				
Primary respondent	91.77	95.92	95.47	47.90
Spouse	90.47	94.32	91.84	48.89
Number of children (mean)	3.19	3.07	3.59	3.91
AIME (mean value in dollars)				
Primary respondent	1,369	1,463	987	825
Spouse	1,007	1,041	905	643
Quarters of coverage (mean number)				
Primary respondent	100	104	90	75
Spouse	85	87	87	64
Household income (mean value in dollars)	52,257	55,560	34,585	33,432
Sample size (weighted)	12,515,330	10,230,244	1,184,523	810,752

SOURCE: Data from HRS wave 1 (1992) matched with employer-provided pension data and SSA administrative data.

NOTE: AIME = average indexed monthly earnings. See Box 1 for details.

The differences in education are also quite large. Among primary respondents, almost 25 percent of whites are college graduates compared with about 10 percent for black and Hispanic households. More than half of Hispanics have less than a high school diploma. Regardless of race, spouses have lower levels of education compared with primary respondents.

Differences in self-reported health are not large, either across races or across primary and secondary respondents. While no obvious pattern can be discerned from the data, a larger proportion of minority households claim to be in poor or fair health than white households. For the other subjective measure—respondents' expectations of their own mortality—a somewhat larger proportion of Hispanic respondents report that they are certain they will not live beyond 75.

More than 90 percent of the white and black populations are native-born Americans, and among Hispanic households more than 50 percent are foreign-born. Immigrants might have lower values of Social Security wealth, particularly if the individuals began their earnings histories in the United States after having worked in other countries for many years. Hispanics have shorter work histories as seen in their lower quarters of coverage. With more education, somewhat better health, and longer earnings histories (Social Security-covered earnings as measured in average indexed monthly earnings (AIMEs), defined in Box 1), it is not surprising that white households earned considerably more in 1991 than their black and Hispanic counterparts.

### Box 1. Definitions of variables

**Net worth** = housing equity + nonhousing equity

**Housing equity** = value of primary residence - mortgage(s) - home equity line of credit

**Nonhousing equity** = financial assets + tangible assets - debt

**Financial assets** = liquid assets + stocks + bonds + IRAs/Keoghs + other assets

**Tangible assets** = vehicle equity + business equity + other real estate (besides primary residence)

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**Liquid assets:** Checking and savings accounts, money market funds, certificates of deposit, government savings bonds, and T-bills.

**Stocks:** Stocks, stock funds, and investment trusts (nonretirement accounts).

**Bonds:** Bonds (corporate, municipal, government) and bond funds (nonretirement accounts).

**IRAs:** Individual Retirement Accounts and Keogh plans.

**Other assets:** Other savings or assets, money owed by others, valuable collections for investment purposes, annuities, or rights in a trust or estate not mentioned elsewhere.

**Debt:** Credit card loans, medical debts, life insurance policy loans, money owed to relatives and friends, second and nonprimary home debt, and so on.

**Pension wealth:** Pension wealth values are those provided in the Level I Pension File of the HRS, and are based on *employer*-provided information on various pension plans. These pension values are accumulated across jobs and aggregated in 1992 dollars. Pension plans may be a defined benefit or a defined contribution plan. The combination of inflation, interest rates, and the wage growth employed by the Social Security Administration in its intermediate projections of long-term system solvency are used here. Pension values are imputed for households if one member of a married household claims to have earned a pension but has missing pension information. Group means by race, education, and whether respondent is a primary or secondary respondent were used to impute missing pension values.

**Social Security wealth:** Expected present value (1992) of benefits based on a respondent's projected earnings if he or she was younger than age 62 at the time of the survey. The values are given as household level variables.

**Quarters of coverage (QC):** To become eligible for Social Security benefits, a worker needs a certain number of credits based on work in covered employment. Credits are measured in terms of quarters of coverage (QC). In 2000, a worker can earn one QC for every \$780 in covered earnings up to a maximum of four QCs each year.

**Average indexed monthly earnings (AIME):** Annual Social Security taxable earnings of a worker are wage-indexed. The 35 currently highest indexed earnings are used to compute the AIME.

## **Racial and Ethnic Differences in Measures of Average Wealth**

The various measures of wealth available from the HRS that are examined here are described in Box 1. All wealth components reflect entitlements as of 1992. Net worth excludes retirement wealth held in DC pension plans (which are part of pension wealth) and Social Security wealth. Housing equity consists of equity in a primary residence only. Pension wealth (in 1992 dollars) is calculated from employer-provided pension data and is the sum of DB and DC pension plans from the current job as well as any pensions from certain previous jobs. Social Security wealth (in 1992 dollars) is based on a respondent's actual lifetime earnings (Mitchell, Olson, and Steinmeier 1996).

Almost all households in our sample have net worth in some form, as shown in Table 2, which describes wealth levels for all households (owners and nonowners). The mean value for white households, on average, is more than three times that of black and Hispanic households, a result well established in previous HRS wealth studies (Smith 1995a). A much smaller proportion of households own homes than have other forms of net worth, with the overall home-ownership rates much smaller for minority households. The mean housing equity for white households is about twice that of the other groups. But the relative difference in housing equity is not as pronounced as the relative difference in net worth. Much of the disparities in net worth appear to originate with nonhousing equity. As Table 2 shows, although most households have positive nonhousing equity, on average, the mean value of nonhousing equity for white households is at least four times that of black and Hispanic households. The ratio is far more dramatic if looking at median values. Again, these results are unsurprising in light of previous wealth studies.<sup>13</sup>

**Table 2.**  
**Wealth holdings for all households, by race and ethnicity**

	Non-Hispanic white			Non-Hispanic black			Hispanic		
	Percentage ownership	Mean (dollars)	Median (dollars)	Percentage ownership	Mean (dollars)	Median (dollars)	Percentage ownership	Mean (dollars)	Median (dollars)
Net worth	99	273,847	127,000	87	78,444	30,500	87	79,751	36,000
Housing equity	84	70,621	52,000	61	29,656	15,000	58	35,606	18,000
Nonhousing equity	99	203,226	58,000	84	48,788	6,000	86	44,145	5,300
Financial assets	93	89,158	25,000	62	17,659	600	54	11,388	200
Liquid assets	91	24,367	6,100	60	6,731	500	53	5,442	100
Stocks	36	24,933	0	9	3,387	0	7	1,608	0
Bonds	8	4,005	0	2	118	0	2	127	0
IRAs/Keoghs	50	24,581	20	15	5,366	0	12	2,741	0
Other	20	11,271	0	7	2,057	0	6	1,471	0
Tangible assets	96	117,357	15,000	71	34,239	4,000	80	35,141	4,000
Vehicle equity	96	15,899	10,000	70	7,451	3,000	78	6,868	3,000
Business equity	16	45,977	0	5	7,483	0	7	8,687	0
Other <sup>a</sup>	36	55,481	0	18	19,305	0	22	19,586	0
Debt	40	3,289	0	47	3,110	0	36	2,384	0
Pension wealth	79	100,865	37,721	66	65,897	24,076	47	32,581	0
wealth	96	134,431	142,836	87	89,075	78,806	83	86,412	83,431
Total wealth	100	509,142	351,144	97	233,415	155,695	94	198,744	148,394

SOURCE: Data from HRS wave 1 (1992) matched with employer-provided pension data and SSA administrative data.

NOTE: IRAs = Individual Retirement Accounts.

a. Real estate other than main home, which is housing equity.

Nonhousing equity is made up of financial assets and tangible assets. There are substantial differences across racial and ethnic groups in the holdings of financial assets. The mean financial asset wealth for whites is five times that of blacks and eight times that of Hispanics. While a majority of households in each group own liquid assets, the differences in ownership of stocks, bonds, IRAs, and other assets are particularly large. About 36 percent of white households report stock ownership, and for all whites, the mean value of stocks is \$24,933. However, less than 10 percent of black or Hispanic households report owning stock, resulting in a much lower mean stock holding of \$3,387 for black and \$1,608 for Hispanic households. Yet despite these differences in mean values, note that the median value of stocks, bonds, or other assets is zero for all households, regardless of race and ethnicity. Although white households in aggregate report high mean values, less than half of white households own stocks, bonds, or other assets, as evidenced in the zero median values.

On average, tangible assets are larger than financial assets. Mean tangible assets for whites are more than three times that of blacks and Hispanics. Most households have vehicle equity. Although the differences in business equity are large, it is owned by relatively few, even among white households. About a third of white households and about a fifth of black and Hispanic households own real estate other than their main home. Overall, the relative differences in mean values of vehicle equity and other real estate are not as large as those observed in components of financial assets. The median household of all groups owes no debt, and the mean debt owed by all groups is roughly the same.

Pension wealth is an important source of overall wealth, particularly for households nearing retirement. About 79 percent of white households own pension wealth compared with 66 percent and 46 percent of black and Hispanic households, respectively. The differences in mean and median pension wealth holdings across the three racial and ethnic groups are not as large as in financial assets, except for Hispanic households, whose median pension wealth is zero.

Relative differences in Social Security wealth are not as large as in housing or nonhousing equity across racial and ethnic groups.<sup>14</sup> Note that the median Social Security wealth of all three racial groups is larger than their median net worth.

Total wealth is a broad concept of wealth, including net worth, pension wealth, and Social Security wealth. Racial and ethnic relative disparities in total wealth are not as large as those in net worth. Including pension wealth reduces overall wealth differences between white and minority households. In each of the three groups, Social Security wealth has a less skewed distribution than pension wealth, despite the shorter work histories and lower average lifetime earnings observed for Hispanic households in Table 1. The inclusion of Social Security wealth in a measure of total wealth has an even greater equalizing impact than does the inclusion of pension wealth, particularly for Hispanic households.

## **Racial and Ethnic Differences in the Distribution of Wealth**

### **Distribution of Components of Total Wealth**

To better understand the nature of racial and ethnic wealth differences, we examine the distribution of mean wealth values by income (see Table 3). The household income

**Table 3.**  
**Broad measures of wealth, by race/ethnicity and income quartile**

Wealth measure and income quartile	Percentage ownership			Mean value for all households (dollars)			Mean value for owner households only (dollars) <sup>a</sup>		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<b>Net worth</b>									
Lowest quartile	95.74	74.92	78.60	100,914	41,607	44,040	105,408	55,539	56,033
Second quartile	99.66	96.06	92.26	170,973	64,651	68,370	171,551	67,303	74,110
Third quartile	100.00	94.66	97.05	218,957	73,478	126,902	218,957	77,620	130,764
Highest quartile	100.00	99.01	100.00	551,818	247,555	182,871	551,818	250,028	182,871
<b>Housing equity</b>									
Lowest quartile	66.86	40.00	43.72	39,061	14,189	18,729	58,426	35,469	42,481
Second quartile	84.64	71.68	66.16	57,631	30,398	38,867	68,091	42,406	58,748
Third quartile	89.08	77.33	72.31	69,570	38,369	47,110	78,100	49,616	65,153
Highest quartile	92.32	87.23	82.40	107,503	70,751	81,559	116,441	81,110	98,981
<b>Nonhousing equity</b>									
Lowest quartile	94.70	71.19	76.68	61,853	27,418	25,310	65,315	38,514	33,008
Second quartile	99.55	93.91	90.25	113,342	34,253	29,503	113,852	36,476	32,690
Third quartile	99.84	91.51	97.05	149,387	35,109	79,791	149,630	38,364	82,220
Highest quartile	100.00	99.01	100.00	444,314	176,804	101,312	444,314	178,570	101,312
<b>Pension wealth</b>									
Lowest quartile	58.74	41.68	30.25	33,088	19,515	12,610	56,330	46,815	41,691
Second quartile	78.60	77.97	54.35	66,634	60,514	32,384	84,781	77,609	59,584
Third quartile	88.00	87.00	65.17	111,014	100,276	43,536	126,152	115,259	66,801
Highest quartile	87.74	93.29	70.61	173,882	193,223	99,499	198,170	207,110	140,912
<b>Social Security wealth</b>									
Lowest quartile	89.76	78.34	72.73	92,186	54,834	61,004	102,700	69,999	83,874
Second quartile	96.69	93.93	93.73	127,067	99,336	100,831	131,415	105,753	107,580
Third quartile	97.29	93.02	90.55	146,933	120,332	111,304	151,021	129,360	122,919
Highest quartile	97.59	97.06	93.18	161,369	143,943	124,245	165,353	148,298	133,338

SOURCE: Data from HRS wave 1 (1992) matched with employer-provided pension data and SSA administrative data.

NOTE: The cutoff points (in 1992 dollars) for the quartiles are \$23,460, \$41,900, and \$66,900.

a. Owner households are those who own the specified form of wealth.



quartiles have cutoff points (in 1992 dollars) of \$23,460, \$41,900, and \$66,900. Those cutoff points are defined over the entire sample and not specifically by race and ethnic group.<sup>15</sup> Data are also given for all households and owner households only. The former includes households irrespective of ownership of any asset whereas the latter includes only households who own the particular form of wealth.

For owners of net worth, the relative differences in means between white and minority households are sharpest among those in the second and third income quartile. Housing equity continues to be more equally distributed than nonhousing equity. Although white/black disparities in home ownership have narrowed since 1977, the homeownership rate of blacks, as of 1995, remained 27 percentage points below that for whites.<sup>16</sup> Racial differences in home equity, adjusted for income, have been explained by credit, financial, locational, and home ownership disparities in addition to the prevalence of discrimination among lenders. As income level increases, more households own housing equity, with the largest relative disparity in the lowest income quartile as seen in Table 3. Among homeowners, differences in housing equity levels by race and ethnicity generally diminish with rising levels of household income.

Nonhousing equity is quite a different story. Among households who report positive values, racial and ethnic relative differences in nonhousing equity tend to widen as incomes increase. For example, a differential of 2 to 1 between whites and Hispanics in the lowest income quartile increases to 4 to 1 in the highest income quartile. The differential between white and black households ceases to widen only at the highest income quartile.

Pension ownership rates rise with household income for all groups as do their mean pension wealth levels. Pension ownership is the lowest among Hispanic households, particularly in the lowest income quartile, a statistic not surprising given the relatively larger numbers of Hispanic households in our sample who are foreign-born and who have fewer quarters of coverage and smaller AIMEs. Pension ownership rates of blacks are about the same as those for whites except in the bottom quartile. Note that Table 2 verifies the standard result that white households own higher pension wealth than minority households. In Table 3, however, once pension wealth is tabulated by income class, we find that in the top quartile for pension owners, black households, on average, own slightly larger amounts of pension wealth than white households. One reason may be that in the top quartile, a larger percentage of black than white households have two members with pensions. An unexpected finding that emerges from this table is that black and white households in our sample have similar access to pensions.

Social Security wealth is more equally distributed than is net worth. Racial and ethnic relative differences in Social Security wealth decrease with higher income, reflecting the redistributive nature of the Social Security benefit formula.

### **Distribution of Components of Financial Wealth**

We had noted earlier in Table 2 that although a sizable percentage of white, black, and Hispanic households own financial assets, large differences are observed in the size of their financial asset holdings. Several wealth studies (Wolff 1998, 2000) have reported that financial assets are even more concentrated among white households compared with black or Hispanic households than total personal wealth.<sup>17</sup> We look into the components of financial asset holdings that might generate these differences in Table 4.

Because liquid assets are considered safe and include such common instruments as checking and savings accounts, it is not surprising that in every income quartile a very large proportion of households report nonzero levels of liquid assets. (In contrast, risky assets are defined here as the sum of stocks, bonds, IRAs/Keoghs, and other assets.) In the lowest income quartile, a much higher proportion of white households own liquid assets than do black or Hispanic households. Racial and ethnic differences in ownership rates decline at higher income quartiles.

Stock ownership and amounts are very different not only between the top and the bottom income quartiles but also between white and minority households.<sup>18</sup> In the wealth literature, stock ownership is known to be very skewed. Wolff (1998) states that in 1992, the top 1 percent of families in the whole population, as ranked by net worth, owned almost 50 percent of corporate equity. Probably because the respondents in our sample are near retirement, it is not surprising to find some stock ownership even in the lowest quartile. Note that while stock ownership generally rises with income, it does so much more slowly for nonwhite households. In the highest income quartile, 26 percent of black households and 21 percent of Hispanic households own stock. Among stock-owning households, the racial and ethnic differences in the mean value of stocks are not as large as they are for all households. Across all households (owners and nonowners), the differences are substantial due to the very different patterns of stock ownership across the racial and ethnic groups. The white/minority stock wealth ratio ranges from 13 between whites and Hispanics in the lowest quartile to 4 between whites and blacks in the top income quartile.

**Table 4.**  
**Components of financial wealth, by race/ethnicity and income quartile**

Financial asset and income quartile	Percentage ownership			Mean values for all households (dollars)			Mean values for owner households only (dollars) <sup>a</sup>		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<b>Liquid assets</b>									
Lowest quartile	74.79	36.14	29.87	12,602	2,312	2,901	16,849	6,397	9,710
Second quartile	90.92	73.45	60.85	18,282	8,297	6,691	20,107	11,296	10,996
Third quartile	96.05	78.18	78.48	21,948	7,583	9,239	22,851	9,700	11,772
Highest quartile	97.35	89.42	91.69	41,189	17,988	7,736	42,311	20,116	8,438
<b>Stocks</b>									
Lowest quartile	14.86	1.49	1.81	7,181	2,202	553	48,321	b	b
Second quartile	28.24	11.50	5.53	11,072	1,586	1,008	39,205	13,788	b
Third quartile	39.18	10.75	14.06	18,172	1,763	3,379	46,387	16,395	24,029
Highest quartile	55.88	25.61	20.75	57,537	13,898	4,669	102,958	54,258	22,494
<b>Bonds</b>									
Lowest quartile	2.84	0.50	1.13	870	28	201	30,664	b	b
Second quartile	4.56	0.48	0.00	1,720	95	0	37,687	b	b
Third quartile	7.50	3.52	2.34	1,747	243	164	23,300	b	b
Highest quartile	16.44	5.17	6.24	10,637	308	35	64,716	b	b
<b>IRAs/Keoghs</b>									
Lowest quartile	23.51	3.73	6.65	6,459	685	789	27,472	18,348	11,859
Second quartile	42.57	15.50	13.61	17,309	3,409	1,668	40,661	21,985	12,256
Third quartile	55.02	23.22	21.02	24,004	4,231	7,048	43,628	18,219	33,538
Highest quartile	72.24	43.64	19.92	45,564	28,034	6,820	63,075	64,241	b
<b>Other</b>									
Lowest quartile	10.65	1.82	1.89	3,094	228	394	29,062	b	b
Second quartile	15.86	7.15	3.94	5,500	1,710	71	34,689	23,935	b
Third quartile	21.20	8.96	9.06	9,229	2,640	479	43,535	29,449	b
Highest quartile	29.58	19.80	23.21	24,702	8,503	10,355	93,502	42,940	44,618

SOURCE: Data from HRS wave 1 (1992) matched with employer-provided pension data and SSA administrative data.

NOTES: The cutoff points (in 1992 dollars) for the quartiles are \$23,460, \$41,900, and \$66,900.

IRAs = Individual Retirement Accounts.

a. Owner households are those who own the specified form of financial asset.

b. Fewer than 19,000 weighted cases.

Bond ownership is much lower than stock ownership. Even within the top income quartile, less than 20 percent of white households own bonds. Across all income quartiles, the mean bond wealth among all households is smaller than the mean value of stock portfolios. Too few minority households own bonds across all income quartiles to allow for further comparisons.

A larger percentage of households in all income and racial and ethnic groups own IRAs/Keoghs than own other risky components of financial assets.<sup>19</sup> Ownership rates of IRAs/Keoghs increase with income for all racial and ethnic groups, although Hispanic households show little change from the third income quartile to the highest quartile. In part, because a larger proportion of people own IRAs/Keoghs, particularly in the two higher income quartiles, the differences in IRAs/Keogh mean wealth levels are not as large between white and minority households when compared with stock and bond holdings.

A sizable proportion of white households in all income quartiles and of minority households in the top quartile own some form of other assets, which include money owed by others, valuable collections, and annuities. However, without knowing the specific form of the asset, it is difficult to comment on the differences by race and ethnicity observed here.

## **Racial and Ethnic Differences in Portfolio Choices**

### **By Income**

Here, we investigate portfolio choices by income as a way of exploring the notion that the differences in financial assets just observed may be due to differences in saving behavior

and choice of assets. Informal surveys and occasional media accounts (Brimmer 1988; Mabry 1999) provide reports of differential saving behavior by race. Those reports discuss why many blacks have missed out on the most spectacular stock-market rally in U.S. history and that blacks are far less invested in financial securities, especially stocks, and tend to favor more conservative investment vehicles, such as real estate and insurance.

Note how differently the racial and ethnic subgroups choose to allocate their wealth. Only selected components of wealth are examined in Table 5, and thus the portfolio allocation ratios do not add up to 100 percent. Consider housing equity. For most households, a home not only provides shelter but also represents the most important asset in their overall portfolio. The share of housing, defined as the primary residence, in a household's total asset portfolio changes across the life cycle as well as across the income or wealth distribution. Because the sample used in this paper focuses on 51- to 61-year-olds in 1992, life-cycle differences are not a concern here.<sup>20</sup> In general, those in the middle of the income distribution own a disproportionate share of total assets in housing, and the very wealthy own other assets, thereby reducing the share of housing in their portfolios.

Across white, black, and Hispanic homeowners, the share of housing falls as income levels increase and is lowest for those in the highest income quartile. This is true for the share of housing in total net worth among all households and households that report positive net worth (owner households). Portfolio allocation patterns by racial and ethnic group are remarkably similar. Among owners of net worth all households except those in the very top income quartile have roughly half of their net worth tied up in their

**Table 5.**  
**Ratios of portfolio allocation, by race/ethnicity and income quartile**

Portfolio allocation and income quartile	All households			Owner households only <sup>a</sup>		
	White	Black	Hispanic	White	Black	Hispanic
Housing wealth/net worth						
Lowest quartile	0.40	0.29	0.32	0.46	0.50	0.47
Second quartile	0.44	0.45	0.47	0.46	0.54	0.55
Third quartile	0.42	0.47	0.42	0.45	0.66	0.45
Highest quartile	0.36	0.38	0.35	0.35	0.39	0.41
Risky assets/financial assets <sup>b,c</sup>						
Lowest quartile	0.23	0.05	0.07	0.30	0.13	0.21
Second quartile	0.38	0.18	0.12	0.41	0.24	0.19
Third quartile	0.48	0.25	0.24	0.49	0.31	0.30
Highest quartile	0.63	0.42	0.38	0.63	0.44	0.41
Stocks and bonds/financial assets <sup>c</sup>						
Lowest quartile	0.06	0.01	0.01	0.08	0.03	0.04
Second quartile	0.11	0.06	0.03	0.12	0.08	0.05
Third quartile	0.14	0.07	0.10	0.15	0.09	0.13
Highest quartile	0.24	0.11	0.14	0.24	0.11	0.15
IRAs and Keoghs/financial assets <sup>c</sup>						
Lowest quartile	0.12	0.02	0.04	0.15	0.06	0.13
Second quartile	0.21	0.09	0.07	0.22	0.11	0.11
Third quartile	0.26	0.13	0.11	0.26	0.16	0.14
Highest quartile	0.29	0.25	0.10	0.29	0.27	0.11

SOURCE: Data from HRS wave 1 (1992) matched with employer-provided pension data and SSA administrative data.

NOTES: Ratios of selected components of wealth are shown here and thus do not add to 100 percent.

The cutoff points (in 1992 dollars) for the quartiles are \$23,460, \$41,900, and \$66,900.

IRAs = Individual Retirement Accounts.

a. Owner households are those who own net worth (for the housing wealth ratio) or financial assets (for the ratios for risky assets, stocks and bonds, and IRAs/Keoghs).

b. Risky assets are the sum of stocks, bonds, IRAs/Keoghs, and other assets.

c. Financial assets are the sum of liquid assets and risky assets.

home. In the top income quartile for all subgroups, the share of home equity is slightly lower, thereby allowing for increased asset diversification.

The share of risky assets in financial assets rises as income levels rise, as seen in Table 5. It is well known that wealthier households hold larger percentages of their assets in riskier forms.<sup>21</sup> However, previous research has shown that blacks are more risk-averse than whites. Blacks who do have a margin of funds to invest typically prefer safer assets such as checking accounts or real estate when compared with white households (Brimmer 1998). (Similar data on Hispanics are not available.) Certainly, this is borne out by the numbers in Table 5, which show a smaller share of risky assets by most minority households when compared with white households. The differences are largest in the lowest income quartiles, with black and Hispanic households displaying roughly similar patterns. Even among households who own financial assets, racial and ethnic differences in the share of risky assets continue to be large.

Across all households, there are sizable differences in the shares of stocks and bonds held by white and minority households. Among households who own financial assets (owner households), portfolio composition is again quite dissimilar across the racial and ethnic groups. Minority households own very small shares of financial wealth in stocks and bonds, even in the highest income quartile, whereas white households in that quartile own a quarter of their financial assets in stocks and bonds. (See Table 4, which shows that more white households in the top income quartile own stocks and bonds than any other group.)

A similar phenomenon can be observed with the share from IRAs/Keoghs. There are significant differences when one considers all households as well as households that own financial assets. At every income quartile, black owner households allocate a smaller



share of their portfolio to IRAs/Keoghs than do white owner households, although the differences narrow in the highest income quartiles.

### **By Education**

Researchers often find that any particular year's household income (current income) may be unrepresentative of a household's usual position in the income distribution. Temporary increases or decreases in current income may be potentially misleading. Therefore, a measure of permanent income is often constructed to avoid those pitfalls. The purpose at this stage of the analysis is to confirm some of the results on differences by race and ethnicity in ownership of assets and portfolio composition. Rather than construct a specific measure of permanent income from HRS data, we have opted to use education level as a proxy measure. We examine whether similar differences in portfolio compositions are exhibited when looked at by education levels, a correlate of long-term financial well-being.

We examine ownership of housing, risky assets, stocks or bonds (a subset of risky assets), and IRAs/Keoghs by education levels in Chart 1. Much of the differences in overall wealth levels appears to be due to differences in ownership rates of particular forms of wealth. But do differences in ownership persist when looking at wealth ownership by education levels? For example, are minority households less likely than white households to hold risky assets even at higher education levels?

The home ownership patterns seen in Chart 1 are similar to those observed when looking at ownership patterns by household income. At the lowest education level, the

Chart 1.  
 Ownership of various forms of wealth, by race/ethnicity and education  
 (in percent)

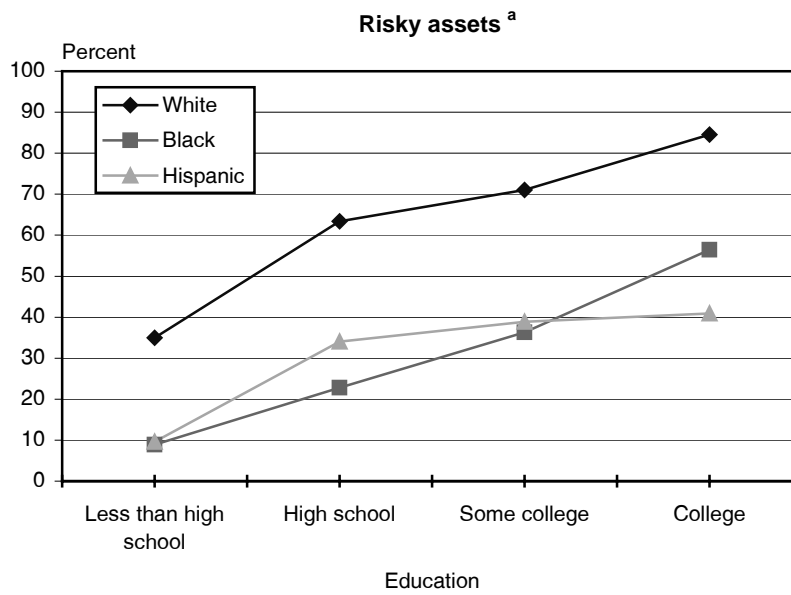
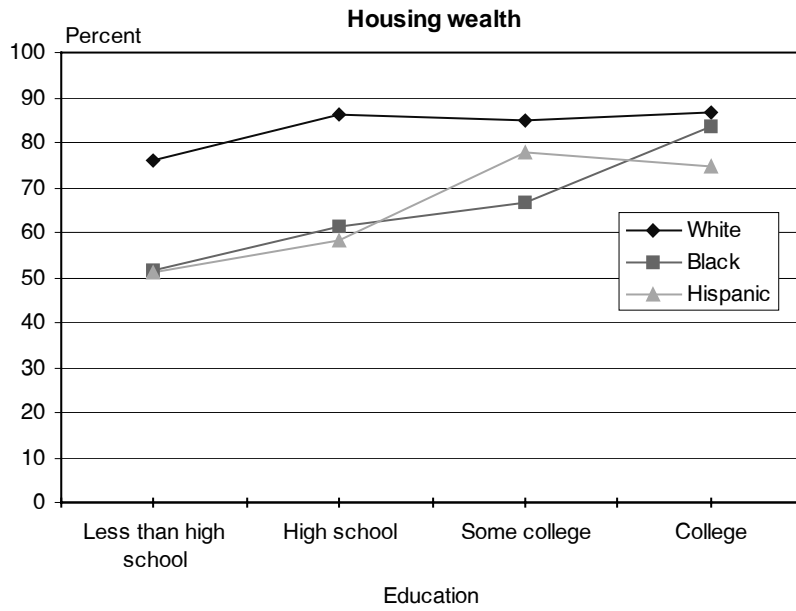
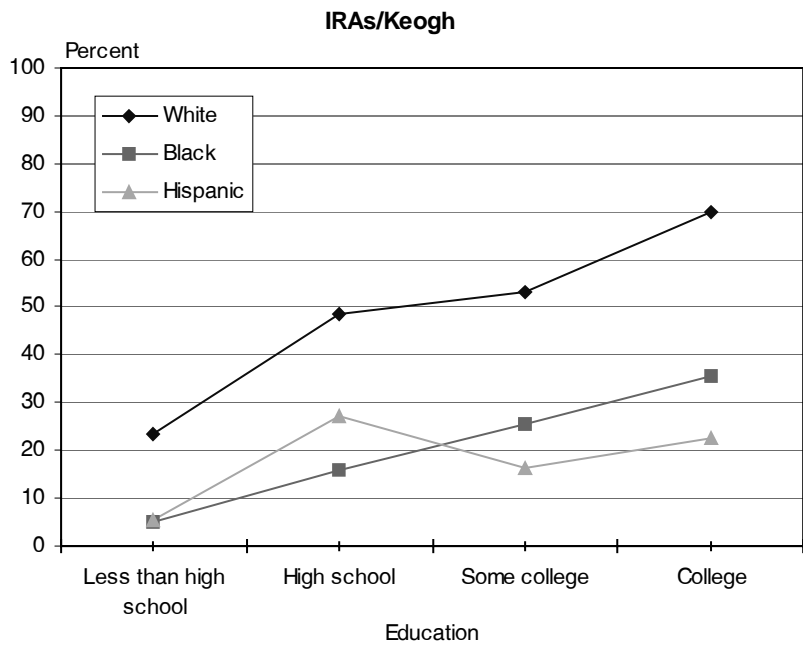
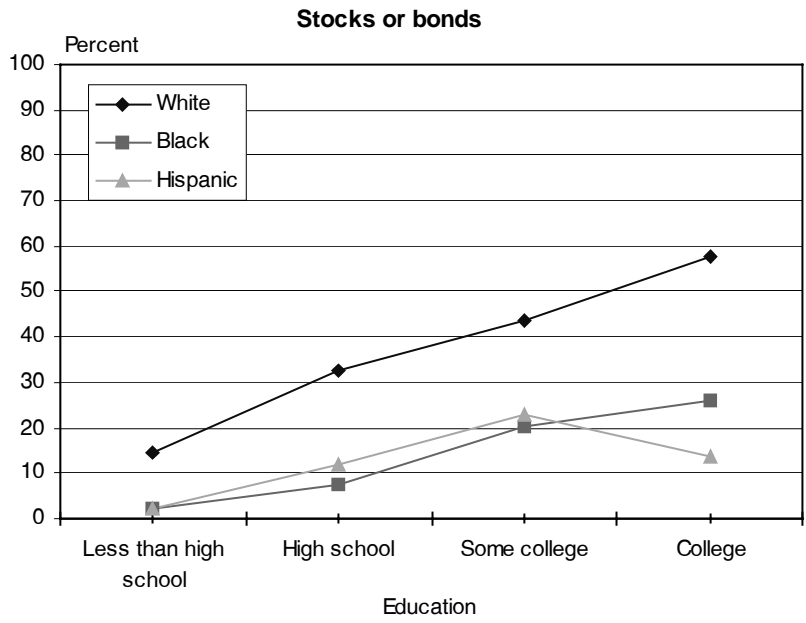


Chart 1.  
Continued



SOURCE: HRS wave 1 (1992).

- a. Risky assets are the sum of stocks, bonds, IRAs/Keoghs, and other financial assets.

home ownership rates for minority households are considerably lower than for whites, but the racial and ethnic gap shrinks for those with a college education.

A quite different picture emerges for risky assets, which are defined as the sum of stocks, bonds, IRAs/Keoghs, and other assets. Among the least educated, 35 percent of white households own risky assets compared with slightly less than 10 percent for minority households. At higher education levels, all households show increases in ownership rates of risky assets, but the gap does not appear to narrow as with housing equity. In fact, among white college graduates, almost 85 percent own risky assets compared with barely half and less than half of black and Hispanic households, respectively. With higher levels of education, black and Hispanic households are consistently less likely to hold risky assets in their portfolios than are whites.

In examining the stocks and bonds component of risky assets, we find that there are large differences in stock and bond ownership by education. For those with less than high school education, barely 3 percent of minority households participated in stock/bond ownership compared with 15 percent of white households. Because white households participate in stock/bond ownership more actively than minority households with higher levels of education, the absolute gap between white and nonwhite households increases for college graduates.<sup>22</sup>

Far smaller percentages of both black and Hispanic households than white households hold IRAs/Keoghs. A larger proportion of black and white households own IRAs/Keoghs with increasing levels of education. By contrast, a smaller proportion of Hispanic households with some college education own IRAs/Keoghs than those with only a high school degree. The racial and ethnic gap is large and persists at the highest levels of education. Two-thirds of white college graduate households are invested in

IRAs/Keoghs, compared with a little over one-third and one-fourth of black and Hispanic college graduate households, respectively.

## **Concluding Comments**

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In sum, the descriptive statistics in this paper show that racial and ethnic differences in holdings of certain components of wealth vary widely. The paper adds to the contributions of Smith (1995a) who first outlined the large racial and ethnic wealth differences in the HRS by household income using net worth as a broad measure of wealth. Here, we find that differences in housing equity narrow at higher income quartiles in contrast with differences in nonhousing equity that mostly widen. Much of the latter emanates from differences in financial asset holdings. Corporate stock holdings are one of the most unequal. The white minority stock wealth ratio ranges from 13 in the lowest income quartile to 4 in the highest income quartile. When a broader definition of wealth is used that includes Social Security wealth and employer-reported pension wealth, the racial and ethnic disparities in wealth are not as large. The inclusion of Social Security wealth has a slightly larger equalizing impact, in aggregate, on the wealth of Hispanic households than on black households.

Researchers believe that differences in levels of financial assets mostly generate the overall wealth differences. Lower rates of participation in financial markets by minority households may explain some of the differences in levels of financial assets. We find that at every income quartile and education level, minority households are less inclined to hold riskier, higher-yielding assets than white households.

The literature on household portfolio choice, in general, shows large differences in portfolio allocations. It is an empirical regularity that the wealthier a household the more risky and diverse its holdings of financial assets. Our finding, holding income or education constant, that minority households are less likely than white households to own a wide variety of assets supports the idea that various racial and ethnic groups have different saving behavior. To what extent that plays a role in explaining racial and ethnic differences in wealth remains to be answered. Indeed, research has found that lower stock ownership by black families has prevented them from benefiting as much as other families from the recent expansion in the economy (Hurst, Luoh, and Stafford 1998).

What explains this hesitancy? The lack of an appropriate financial environment has occasionally been put forth as a cause.<sup>23</sup> A differential taste for risk, higher information costs to acquire newer kinds of assets, or both, can explain the different asset allocation patterns among racial and ethnic groups. One possibility is a cultural bias created by financial brokers who have primarily targeted whites. Blacks have traditionally been more willing to invest in real estate and certificates of deposit because those industries have marketed their services to blacks and have agents who are themselves black. A recent article in the *Wall Street Journal* (Mabry 1999) claims that blacks have shied away from stocks partly because of a mistrust of Wall Street and that investment in risky assets will rise with an inflow of black investment professionals. A variety of factors may have effectively kept black and Hispanic households many years behind their white counterparts in acquiring financial expertise. Additional research on this issue can improve our understanding of the differences in saving behavior.

The lower participation in the financial market by minority households will probably result in slower wealth creation. Finance professionals and community leaders

have only recently focused on the possibility that black and Hispanic households are concerned excessively about present earned income and not enough about building wealth. Some investment firms now have "relationship-development teams" in major urban centers where advisers hold investing seminars and workshops (Mabry 1999). The Wall Street Project, a minority stockholders' plan, is a scheme calculated to increase black participation and has the support of important CEOs and public policy officials (Raspberry 1998). A similar effort is being made in the Hispanic community to encourage investing; religious leaders, personal finance advisers, and financial firms have urged their community members to learn more about financial markets as they become part of the middle class. Opening financial opportunities to comparatively disadvantaged minority households is a positive step in narrowing the racial wealth divide. It becomes even more critical if Social Security reform places increased responsibility on individuals to manage private accounts.

## Notes

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<sup>1</sup> Various issues of the Social Security Administration's *Income of the Population 55 or Older* series.

<sup>2</sup> Hispanics may be of any race.

<sup>3</sup> Minority households refer to black and Hispanic households only.

<sup>4</sup> Using the 1998 Survey of Consumer Finances, Wolff (2000) finds that the ratio of mean incomes for non-Hispanic blacks to non-Hispanic whites is 0.49, and for Hispanics to non-Hispanic whites, 0.54. The respective ratios for mean wealth are 0.18 and 0.25.

<sup>5</sup> Blau and Graham (1990) note that barriers to owning home and business equity can include difficulty in securing loans, poor information about investment opportunities, and racial differences in home ownership rates and housing values, including lower rates of return on housing in black neighborhoods than in white neighborhoods.

<sup>6</sup> Authors often use slightly different definitions of the various measures of wealth. For example, Smith (1995a) includes vehicle equity but excludes the value of 401(k) accumulations in his definition of net worth, unlike Wolff (2000). Because the focus of our study is closer to that of Smith, we choose to use the definitions of wealth used in his work.

<sup>7</sup> HRS asked unfolding bracket questions following an initial nonresponse. A bracket question asks whether a value is "greater than" or "less than" a certain amount. For example, in the case of checking accounts, a question would start with, "Are your assets more than \$1,000?" Then additional bracket questions would be asked that would ultimately place the responses within brackets, ranging from 0–\$1,000, \$1,000–5,000, and so on, leading to a bracket of over \$50,000. Different bracket intervals were used for different asset categories. This particular survey technique yielded enormous information—for example, Smith (1995a) reports that for many financial asset categories, nonresponse was reduced by as much as 75 percent.

<sup>8</sup> Projections of Social Security wealth may be low in two cases. One case is that of a widow(er) who expects to receive benefits based on a deceased spouse's record. Earnings records are not available here for deceased spouses. Another case is that of a divorced person who expects to receive benefits based on a former spouse's earnings history, which is also not available here.

<sup>9</sup> There were 7,702 households (2,373 single and 5,329 paired households) in the HRS wave 1. No reweighting is done to account for the households that were dropped. The income and demographic characteristics of the full sample were not substantially different from the sample used here.

<sup>10</sup> We include the fewer than a dozen primary respondents in the sample who were aged 50 or 62—those barely outside the expected range of 51–61. For married persons, the sample includes spouses even if they are not between 50 and 62 years of age.

<sup>11</sup> The typical wealth study examines the distribution of wealth across households of all ages. See Wolff (2000), Kennickel and Starr-McCluer (1997), and Hurst, Luoh, and Stafford (1998).

<sup>12</sup> For example, Gale (1998) points out that Hurst, Luoh, and Stafford (1998) are not able to disentangle age-specific, cohort-specific, or time-specific data patterns.



<sup>13</sup> Wolff (2000) shows similar results when looking at wealth differences by race and ethnicity across the whole population.

<sup>14</sup> Social Security wealth levels shown here represent wealth as of 1992. That is, future years of earnings to age 62 are filled with zeros for those below 62 in the calculation of this summary wealth variable. Therefore, the coverage rates and wealth levels seen here will be lower than those observed for the retiree population.

<sup>15</sup> Household income is defined as the sum of earnings, unemployment and workers' compensation, pensions and annuities, Supplemental Security Income and welfare income, capital income, disability income, other income, and income of other household members.

<sup>16</sup> The recent narrowing of this gap is not attributable to changes in income and the demographics that explain home ownership. Segal and Sullivan (1998) point out that recent changes in housing policies and lending laws may have had a positive effect on black homeownership rates.

<sup>17</sup> Wolff (1998, 2000) states that in 1992 for the population as a whole, white households owned almost six times as much financial wealth as did black households and almost five times as much as Hispanic households.

<sup>18</sup> Some pension wealth may be invested in stocks or bonds. Indirect stockholding or bondholding of this kind is not included in the definition of stocks or bonds used here. We concur with Haliassos and Bertaut's (1995) claim that it is conceptually problematic to equate pension membership with direct stockholding because the former has different liquidity constraints and payoffs from those in the latter kind of stock and bond ownership.

<sup>19</sup> Note that IRAs and Keoghs could consist of a variety of assets, including stock funds.

<sup>20</sup> Tracy, Schneider, and Chan (1999) report that housing shares in total wealth remain constant for homeowners from their mid-twenties to their early forties and then dip below 65 percent for homeowners aged 44 or older.

<sup>21</sup> Carroll (2000) finds that during 1962-1995, the wealthiest 1 percent in the population allocated 63 percent of their financial assets to risky assets, and the corresponding figure for the remaining 99 percent of the population was a much lower 36 percent.

<sup>22</sup> Note that stock ownership rates across the entire population are smaller than those quoted here—for example, Investment Company Institute (1996) states that in 1990 only 31 percent of the total population had direct ownership of stock and 37 percent owned bonds. However, our sample of households is older and belongs to an age bracket with relatively higher degrees of stock and bond ownership.

<sup>23</sup> Chiteji and Stafford (1999) find that the economic environment in the home in which a child grows up is important and that parental asset ownership affects their adult children's portfolio behavior. Parents can be influential in exposing their children to financial options in adulthood.

## References

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- Altonji, Joseph, Uhlrich Doraszelski, and Lewis Segal 2001. *The Role of Permanent Income and Demographics in Black/White Differences in Wealth*. NBER Working Paper No. 8473, Cambridge, Mass.: National Bureau of Economic Research.
- Blau, Francine D., and John W. Graham. 1990. "Black-White Differences in Wealth and Asset Composition," *Quarterly Journal of Economics* 105(2):321-339.
- Brimmer, Andrew. 1988. "Income, Wealth, and Investment Behavior in the Black Community." *American Economic Review* 78(2):151-55.
- Chiteji, Ngina S., and Frank P. Stafford. 1999. "Portfolio Choices of Parents and Their Children as Young Adults: Asset Accumulation by African-American Families." *American Economic Review* 89(2):377-380.
- Carroll, Christopher. 2000. *Portfolios of the Rich*. NBER Working Paper No. 7826, Cambridge, Mass.: National Bureau of Economic Research.
- Gale, William G. 1998. Comment and discussion on "The Wealth Dynamics of American Families, 1984-94," by Erik Hurst, Ming Ching Luoh, and Frank P. Stafford, *Brookings Papers on Economic Activity* 1:330-337.
- Haliassos, Michael, and Carol C. Bertaut. 1995. "Why Do So Few Hold Stocks?" *The Economic Journal* 105 (September):1110-1129.
- Hurst, Erik, Ming Ching Luoh, and Frank P. Stafford. 1998. "The Wealth Dynamics of American Families, 1984-94." *Brookings Papers on Economic Activity* 1:267-329.
- Investment Company Institute. 1996. *Mutual Fund Shareholders: The People Behind the Growth*. Washington, D.C.: ICI.
- Kennickel, Arthur B., and Martha Starr-McCluer. 1997. "Household Saving and Portfolio Change: Evidence from the 1983-89 SCF Panel." *Review of Income and Wealth* 43(4):381-399.
- Mabry, Tristan. 1999. "Black Investors Shy Away From Stocks." *Wall Street Journal*, May 14.
- Mitchell, Olivia, Jan Olson, and Thomas Steinmeier. 1996. *Construction of the Earnings and Benefit File for Use with the Health and Retirement Survey*. NBER Working Paper No. 5707, Cambridge, Mass.: National Bureau of Economic Research.
- Raspberry, William. 1998. "A Minority Stockholders' Plan." *Washington Post*, July 27.
- Segal, Lewis, and Daniel G. Sullivan. 1998. "Trends in Homeownership: Race, Demographics, and Income." *Economic Perspectives* 22(2):53-72, Federal Reserve Bank of Chicago.
- Smith, James P. 1995a. "Racial and Ethnic Differentials in Wealth in the HRS." *Journal of Human Resources* 30(Supplement):S158-S183.
- \_\_\_\_\_. 1995b. "Wealth Accumulation Between the Waves." Paper presented at the October 1995 HRS Conference at the University of Michigan, Ann Arbor.
- Social Security Administration. Various years. *Income of the Population 55 or Older*. Office of Research, Evaluation, and Statistics. Washington, D.C.

Tracy, Joseph, Henry Schneider, and Sewin Chan. 1999. "Are Stocks Overtaking Real Estate in Household Portfolios?" *Current Issues in Economics and Finance* 5(5):1-6. Federal Reserve Bank of New York.

Wolff, Edward N. 2000. *Recent Trends in Wealth Ownership*. Working Paper No. 300. New York: Jerome Levy Economics Institute.

\_\_\_\_\_. 1998. "Recent Trends in the Size Distribution of Household Wealth." *Journal of Economic Perspectives* 12(3):131-150.