

Housing Older Americans

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I. Overview and Statement of Findings

The aging of America will have profound effects on the economy and society. In 2002, the Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century, also known as the Seniors Housing Commission, released its report to Congress on the challenges facing all levels of government and society in ensuring support for housing and health needs as the population ages. In particular, by 2020, one-sixth of the population will be 65 or older, of which one-third and one-fifth will have housing and service needs, respectively, that current government initiatives may not address adequately. These numbers mask the potential policy difficulties somewhat, because many older Americans' housing issues first arise among the younger old, in particular, those aged 50 to 64.

This article provides a profile of the housing, functional status, and health status of the near old, individuals aged 50 through 64, and older Americans, aged 65 and older, in 2000 using data from the Health and Retirement Study (HRS) and the Asset and Health Dynamics of the Oldest Old (AHEAD) longitudinal studies. The article then examines the impact of functional status and health on the demand for different housing-structure types and residential mobility. There are a number of principal findings:

- There were over 43 million American households including individuals aged 50 or older. 78 percent of these households were homeowners. Although there has been extensive research on the housing needs of older Americans, homebuilders, financial-services providers, and policymakers need to be more informed regarding this important and growing market.

Gary V. Engelhardt received a B.A. in economics from Carleton College and a Ph.D. in economics from the Massachusetts Institute of Technology. Currently, he is an Associate Professor in the Department of Economics, Senior Research Associate in the Center for Policy Research, and Faculty Associate in the Gerontology Center in the Maxwell School of Citizenship and Public Affairs at Syracuse University.

Dr. Engelhardt's specialties are the economics of housing markets, aging, pensions, saving, and housing finance, and has published in numerous journals, including the Quarterly Journal of Economics, Journal of Urban Economics, Regional Science and Urban Economics, and Journal of Money, Credit, and Banking. His research has been sponsored by the National Institute on Aging, National Science Foundation, Social Security Administration, U.S. Department of Labor, and the TIAA-CREF Institute, and his work has been featured nationally in the Wall Street Journal, New York Times, Washington Post, Boston Globe, San Francisco Chronicle, and on National Public Radio.

Before coming to the Maxwell School, Dr. Engelhardt was a tenured faculty member at Dartmouth College. He has been a visiting scholar at the Wharton School of Business at the University of Pennsylvania, Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota, Center for Economic Research at Tilburg University in the Netherlands, and the Federal Reserve Bank of Boston.

Foreword

Jane King, Manager, Housing Options, AARP

AARP and Fannie Mae have agreed to collaborate to increase the availability of affordable and appropriate housing that meets the needs of the burgeoning population of those fifty and over. From AARP's standpoint, the home is crucial to its goal of assuring that people 50+ have independence, choice and control over their lives as they age. This report makes an important contribution to our understanding of the circumstances that influence the ability of older persons to stay in their homes and to continue to live independently.

Housing serves as shelter; provides quality of life, is a source of wealth, and influences a person's ability to remain independent as their needs change over their lives. Yet many older people experience serious housing problems, such as high housing costs, inappropriate design for aging-in-place, poor quality shelter, lack of supportive services, and challenges to protecting their investment in the home. A consequence of those problems is that many older persons (especially those with modest means) must make tough decisions about cutting back on other important expenditures (e.g., health care, clothing, groceries, transportation) in order to stay where they are, and they need to put off decisions on home maintenance, or move to some other community or residential setting.

With regard to the decision to move, persons over the age of 50 may choose to seek another home or community for many reasons. Some of these are related to changes in lifestyle, goals, or amenities. But frequently moves in later years are the results of a disparity between the features of the home and community and the needs of the older person. Most persons in mid-life and beyond are hoping to stay in their current residences for as long as possible. In a recent AARP survey, 89 percent of respondents age 55 or older agreed with the statement "What I'd really like to do is stay in my current residence for as long as possible." Among respondents age 65 to 74, 92 percent agree. Among those 75 and older, 95 percent agree.

The issue is critical; many communities simply do not have the range of affordable and appropriate housing options that enable older persons to remain independent in the face of changing needs. For such persons, moving can mean the loss of important social ties, as well as the network of informal support that develops over time from friends, families, and neighbors. One of the most illuminating results from this paper is the complex relationship between changing physical needs and the incidence of moves among persons of various ages beyond 50 and their abilities. As noted by Professor Engelhardt, "Housing is unique as a commodity because of the close link between functional status, health, and the demand for housing, especially among older individuals."

In all, this paper highlights many key issues surrounding housing affordability and appropriateness. These issues will become increasingly important over the next several decades; between 2004 and 2020, the population age 50-64 will increase from 48 million to 62 million (29 percent increase), while the population 65 and older will increase from 36 to 54 million (50 percent increase). By comparison, the population under 50 will grow from 202 million to 209 million (3 percent increase). Therefore, many of the housing decisions being made today will have consequences that reverberate for years to come.

- Housing is still the dominant asset in the portfolios of older Americans. Median housing equity for older American homeowners was \$80,000; the median housing-equity-to-income ratio was 2:1; and 50 percent of the typical older homeowner's portfolio was composed of housing wealth.
- 61.5 percent of older American homeowners did not hold a mortgage in 2000. Their associated housing equity alone was a stunning \$2.5 trillion.
- Although near old and older homeowners have accumulated an impressive amount of housing wealth, more than one-third of older renters spend more than 30 percent of annual gross income on rent, which suggests that the availability of affordable rental housing is a concern for older Americans. In addition, older renters have almost double the number of limitations in their ability to conduct daily activities relative to homeowners.
- Functional status and health play an important role in older Americans' demand for housing, and unanticipated declines in functional status and health are an important determinant of residential mobility among the oldest old, those aged 85 and over. Residential moves are junctures at which the oldest old sometimes reduce their housing equity.
- Older Americans have a greater demand for structures that have been built or modified to accommodate their functional or health status. This demand is broad-based and affects both single- and multi-family properties, including owner-occupied and rental units.

Throughout this report, all individuals ages 65 and older are referred to as "older Americans," those ages 50 through 64 as the "near old," and those 85 and older are referred to as the "oldest old."

The report is organized as follows. Section II provides important background information. The profile of older Americans' housing is contained in Section III, and Section IV presents a profile of the functional status and health of older households. The relationship between differences in functional status and health and choices of housing-structure type is discussed in Section V. Section VI examines the impact of unanticipated changes in functional status and health on residential mobility.

II. Aggregate Trends in Population Aging and Homeownership

America is growing older. **Figure 1** illustrates the most recent U.S. Census Bureau projections of the age distribution of the population decennially from 2000 to 2050 for individuals 45 and older.¹ In 2000, 45 to 64 year-olds comprised 22 percent of the population, and 65 to 84 year-olds comprised 11 percent of the population. The oldest old, those 85 and older, comprised 1.5 percent of the population. In sum, almost 35 percent of the population was 45 or older in 2000. By 2050, this same share is projected to rise to 42 percent. Most of the growth in the number of persons aged 45 and older initially will occur because of the aging of the Baby Boomers. However, the group that will experience the fastest rate of growth is the oldest old, whose population share is anticipated to more than triple from 2000 to 2050 when the youngest Boomers have reached the age of 85.

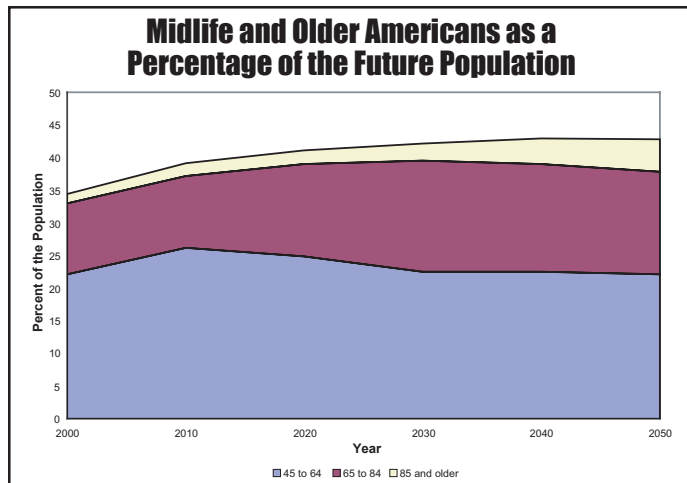


FIGURE 1

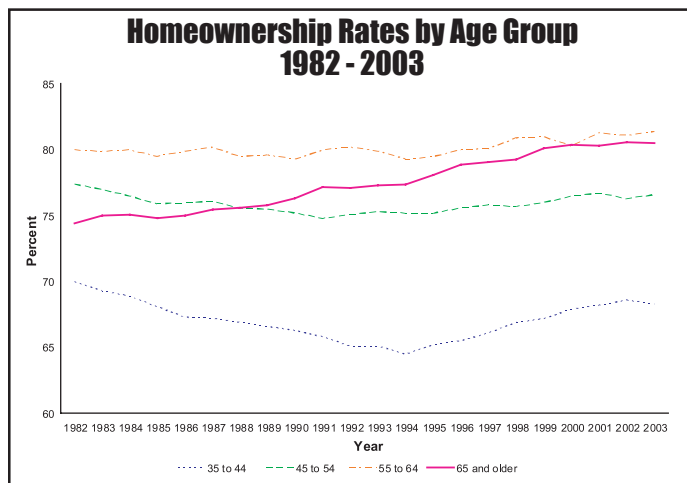


FIGURE 2

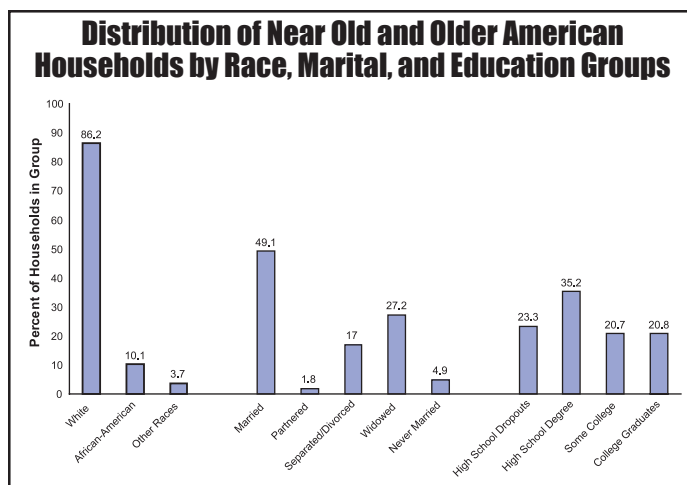


FIGURE 3A

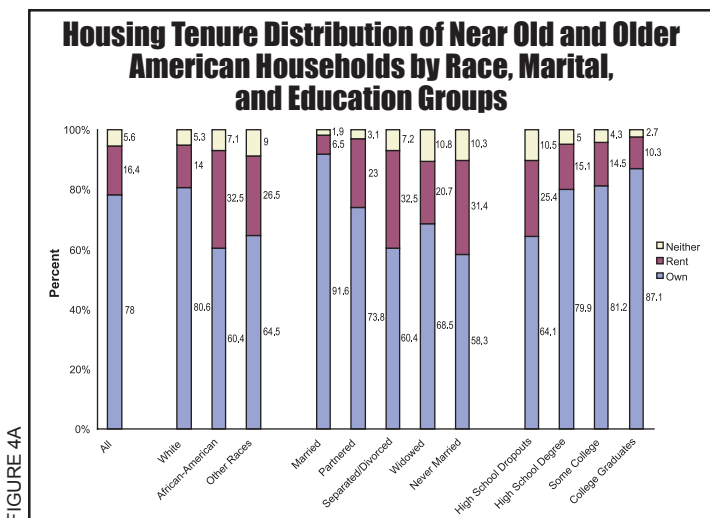
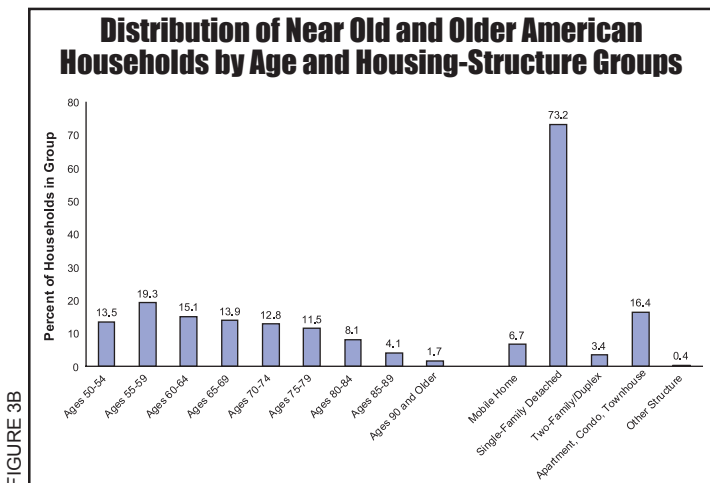
In addition to the rapid growth in the older population, there is a greater proportion of individuals who are homeowners now than ever before. **Figure 2** plots the path of aggregate annual homeownership rates by age groups taken from the U.S. Census Bureau's Housing Vacancy Survey. Although homeownership rates are currently at an historical high for the population as a whole, the figure illustrates that there have been strikingly different trends in homeownership across age groups. In

¹ The underlying data for the figure are taken from Table 2a of U.S. Census Bureau (2004).

particular, homeownership rates for 45 to 64 year-olds essentially have been flat for the last two decades, and, for 35 to 44 year-olds, the rates actually fell from 1982-1993 and rose from 1994-2003 almost back to the level in 1982. The homeownership rate for those 65 and older

rose consistently from 74.4 percent in 1982 to 80.5 percent in 2003. In relative terms, this 6.1 percentage point increase in the older households' homeownership rate represents an increased 8.2 percent total growth in homeownership between 1982 and 2003.²

A significant difficulty in studying older Americans is that traditional, nationally-representative household surveys tend to have relatively small proportions of older individuals. This lack of data is especially problematic for the oldest old, the fastest growing segment of the population. In addition, housing surveys tend not to have the detailed information on health and functional status required to analyze housing and service needs as people age. The analysis below utilizes data from the Health and Retirement Study (HRS) and Asset and Health Dynamics of the Oldest Old (AHEAD), large longitudinal surveys specially designed to study the economics of aging, including housing and health. Therefore, these nationally-representative surveys are particularly appropriate for a study such as this. The analysis sample is composed of 18,207 individuals, ages 50 and older, who comprised 12,467 households in 2000. All figures presented below are weighted using the household-analysis weights provided by the HRS/AHEAD that adjust for differential sampling and sample attrition. When weighted, the analysis sample represents 63,847,993 individuals and 43,117,308 households in the population. For details regarding these data sources, see the Technical Appendix.



III. A Profile of the Housing Choices of Older Americans

This section presents summary statistics from the HRS/AHEAD datasets in order to lay out some basic facts regarding the sample. **Figure 3A** shows the distribution of households ages 50 and older by race, marital, and education groups. A total of 86.2 percent of households were white, just over 10 percent of the households were African-American, and 3.7 percent of households were those self-reporting other races. Unlike some surveys, the HRS/AHEAD allows for unmarried older individuals who live with a partner to be classified distinctly from other groups. The two largest groups were married couples, 49.1 percent, and the widowed, 27.2 percent; those who were separated or divorced, projected by the Census Bureau to be the fastest growing group of older Americans, represented 17 percent of households. Those with a high-school degree comprised the largest portion of the older population (35.2 percent), with the remainder of households split roughly evenly between high-school dropouts, those with some college, and college graduates. **Figure 3B** shows the distribution of older households across five-year age groups and housing-structure type. Most households lived in single-family, detached homes.

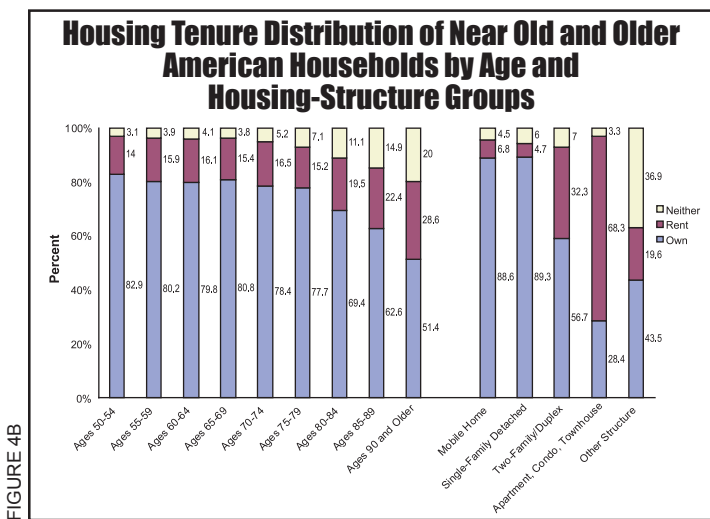


Figure 4A is a bar chart that shows the breakdown of housing-tenure status by demographic group—homeowner, renter, and those who neither own nor rent. Households that neither own nor rent likely live in a shared arrangement, an in-law suite or similar living situation, or might have placed their home into a living trust. In the figure, the total height of each bar represents 100 percent of households in that category. So, for example, the left-most bar shows that the homeownership rate was 78 percent over all households; 16.4 percent were renters and the remaining 5.6 percent neither owned nor rented.

² That is, the 6.1 percentage point increase in the homeownership rate divided by the 1982 base rate of 74.4 equals 0.082 or 8.2 percent. This is the total percent growth in the homeownership rate from 1982 to 2003 and should not be confused with average annual growth rate in homeownership.

Selected Summary Statistics on Financial Characteristics for Older Homeowners by Demographic Characteristics and Housing Structure Type

All Dollar Figures are Means in 2000 Dollars with Medians in Square Brackets

	(1)	(2)	(3)	(4)	(5)
Sample	Housing Equity	Income	Wealth	Mortgage Debt	Annual Mortgage Payment
All Homeowners	116,193 [80,000]	60,713 [36,420]	406,830 [180,800]	72,413 [55,000]	9,839 [7,296]
A. By Race					
White	121,408 [85,000]	62,984 [38,200]	436,319 [203,000]	74,578 [58,000]	10,104 [7,632]
African-American	61,128 [46,252]	37,465 [24,000]	121,746 [62,500]	47,829 [35,000]	7,108 [5,880]
Other Races	105,947 [60,000]	53,746 [28,024]	275,645 [96,000]	83,015 [47,000]	10,502 [6,600]
B. By Marital Status					
Married	131,631 [90,000]	79,081 [52,800]	499,334 [235,000]	79,533 [60,000]	10,903 [8,160]
Partnered	105,679 [70,000]	60,308 [46,520]	335,671 [119,000]	71,466 [60,000]	8,679 [7,200]
Separated/Divorced	90,714 [59,000]	40,395 [27,444]	264,189 [104,000]	61,873 [50,000]	8,428 [7,080]
Widowed	97,631 [75,000]	28,050 [18,288]	261,430 [141,600]	50,033 [40,000]	6,571 [5,256]
Never Married	89,123 [70,000]	59,226 [26,836]	450,001 [145,600]	62,220 [54,000]	7,544 [6,600]
C. By Education Group					
High School Dropouts	71,906 [51,000]	26,985 [17,868]	166,709 [79,300]	43,996 [33,000]	6,219 [4,992]
High School Degree	105,179 [77,000]	43,841 [32,060]	302,825 [162,000]	54,057 [45,000]	7,492 [6,204]
Some College	115,299 [85,000]	68,053 [43,000]	418,424 [212,100]	69,911 [55,000]	9,272 [7,560]
College Graduates	170,784 [120,000]	112,516 [73,206]	755,362 [396,000]	102,639 [70,000]	13,987 [10,200]
D. By Age Group					
Ages 50-54	97,390 [66,000]	88,957 [63,640]	338,722 [145,000]	84,399 [60,000]	10,737 [8,400]
Ages 55-59	113,577 [75,000]	83,057 [52,560]	441,358 [176,000]	73,722 [60,000]	9,983 [8,340]
Ages 60-64	133,379 [85,000]	69,322 [44,400]	457,891 [199,000]	73,321 [55,000]	11,427 [7,200]
Ages 65-69	117,269 [90,000]	50,819 [33,458]	450,186 [215,159]	61,886 [45,000]	8,607 [6,600]
Ages 70-74	117,985 [90,000]	45,056 [26,440]	388,622 [191,000]	66,278 [42,000]	8,011 [5,400]
Ages 75-79	116,782 [90,000]	36,364 [24,632]	389,666 [195,000]	47,328 [35,000]	6,327 [4,800]
Ages 80-84	125,986 [85,000]	31,732 [21,200]	363,391 [167,500]	50,705 [50,000]	6,047 [5,076]
Ages 85-89	104,475 [72,000]	27,220 [17,965]	333,147 [155,000]	51,261 [28,000]	6,234 [4,980]
Ages 90 and older	95,922 [76,000]	24,613 [14,979]	281,314 [140,100]	36,921 [25,000]	4,349 [3,768]
E. By Structure Type					
Mobile Home	53,612 [25,000]	32,222 [23,040]	174,796 [55,500]	29,303 [20,000]	4,732 [4,176]
Single-Family Detached	121,756 [87,000]	63,677 [38,360]	427,883 [195,550]	73,990 [57,000]	10,182 [7,620]
Two-Family/Duplex	121,517 [100,000]	45,945 [29,800]	308,378 [181,300]	72,020 [60,000]	9,987 [9,600]
Apartment, Condo, Townhouse	118,007 [87,000]	62,365 [42,896]	455,859 [241,500]	85,802 [60,000]	9,475 [7,932]
Other	50,462 [35,000]	37,200 [27,717]	182,791 [195,000]	71,746 [60,000]	9,257 [10,200]

TABLE 1

The figure documents well-known differences in homeownership across demographic groups. Within white households, 80.6 percent were homeowners, 14 percent were renters, and 5.3 percent neither owned nor rented their residence. Only 60.4 percent of African-Americans were homeowners. The homeownership rate among those self-reporting other races was 64.5 percent. Almost all married couples were homeowners. In contrast, the homeownership rates for the widowed and divorced were much lower, 68.5 and 60.4 percent, respectively. The group with the lowest rate of homeownership, 58.3 percent, was those who never married, but Figure 3A indicates that they comprised less than 5 percent of older Americans. Finally, the homeownership rate of high-school dropouts was 64.1 percent; almost 11 percent of high-school dropouts reported they neither own nor rent. Homeownership rose with education and peaked at about 87 percent for college graduates.

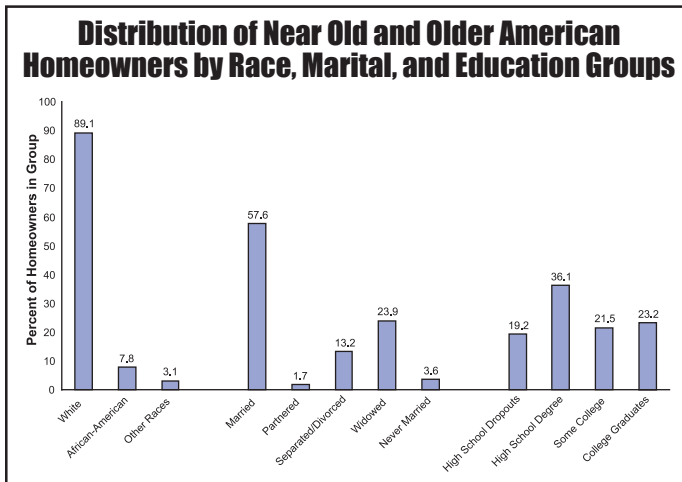


FIGURE 5A

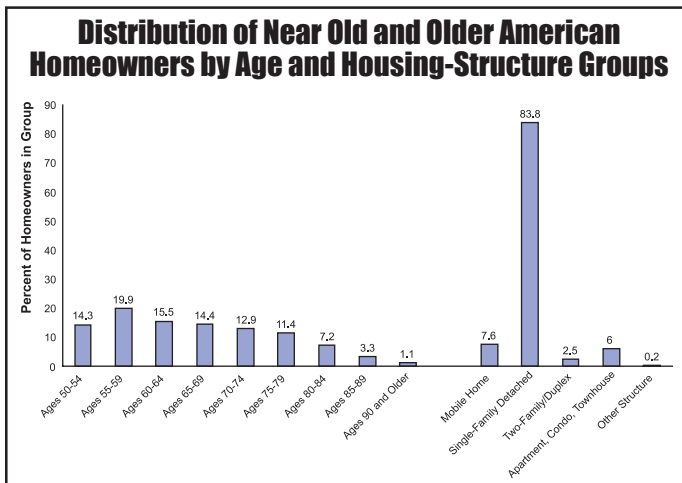


FIGURE 5B

Figure 4B shows the housing-tenure distribution of older households across five-year age groups. The homeownership rate was almost 83 percent for the youngest age group and then was roughly flat at about 80 percent up through age 69, after which it declined. Conversely, the percent renting rose across groups. Among those 90 and older, who were less than 2 percent of older households, the homeownership rate was 51.4 percent, and the percent who neither owned nor rented was 20 percent. When interpreting the tabulations by age group, it should be emphasized that, because this analysis uses data for the year 2000, drawn from a single cross-section, the pattern of behavior across age groups cannot be attributed necessarily to the pure effect of age, because members of each age group also uniquely represented the same year-of-birth cohort, and behavior may have varied across cohorts for a variety of reasons that were independent of age.

Finally, the figure shows similar tabulations for structure type. The bulk of older Americans lived in a single-family, detached home, and almost all of these were owner-occupied. Not surprisingly, the highest proportion of renters lived in apartment, condominium, or townhouse structures.³ Almost seven percent of those ages 50 and older lived in mobile homes, and about 89 percent of these mobile homes were owner-occupied.

Homeowner Data

Table 1 presents selected statistics on financial characteristics for the sub-sample of homeowners only. The distribution of homeowners by demographic and structure-type groups is shown in Figures 5A and 5B, in a manner that parallels Figures 3A and 3B for all households, respectively. In particular, most homeowners ages 50 and older are white, married, and live in single-family, detached homes.

Each column in Table 1 represents a housing- or financial-behavior outcome; each row represents the relevant population subgroup. For each of the outcomes—housing equity, household income, total household wealth, mortgage debt, and the annual mortgage payment—two statistics are reported. The first is the mean value. The mean is useful when using the statistics in the table along with those in Figures 3A-5B to make aggregate estimates for the population or subgroup as a whole. The second statistic is the median and is shown in square brackets in the table. The median represents the midpoint in the distribution of that outcome, such that half of the homeowners in that row's population subgroup had outcomes above the median level and half had outcomes below the median level. The median is the preferred measure and should be thought of as measuring the outcome for the typical homeowner.⁴

From columns 1 and 2 of Table 1, median home equity for all older homeowners was \$80,000 and median household income from all sources (not just labor-market

³ Apartments, condos, and townhouses were aggregated into one structure type for two reasons. First, in many, but not all, contexts in studying housing behavior, there is little difference between these structures. Second, the manner in which the HRS/AHEAD asked and electronically coded the structure-type questions in the survey makes the decomposition of this subgroup into separate types for apartments, condos, and townhouses, though technically feasible, very complicated in practice.

⁴ For example, in the first row, for which the population group is all homeowners, median housing equity, defined as the difference between housing asset value (including the secondary residence, if any) and associated mortgage debt, was \$80,000, measured in calendar-year 2000 dollars. Thus, half of older homeowners had housing equity greater than \$80,000 and half had less than \$80,000. As is well known, the distribution of income and wealth in the population is highly skewed to the right, in that there is a small part of the population that has a disproportionately large amount of overall income and wealth, so that the mean frequently exceeds the median, often times by a substantial amount.

FIGURE 6A

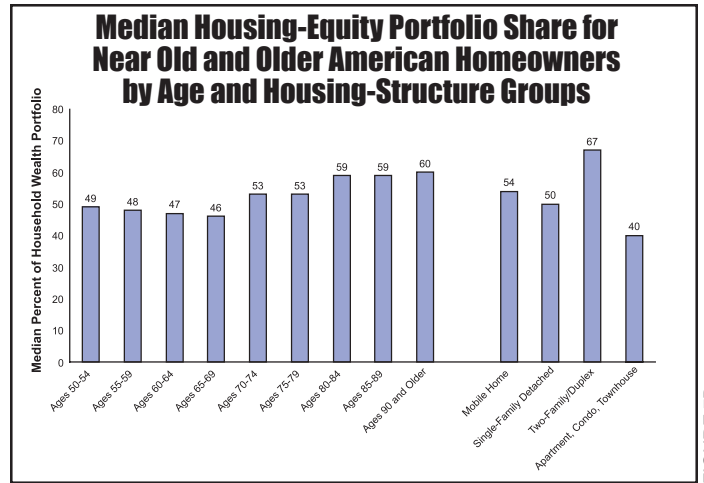
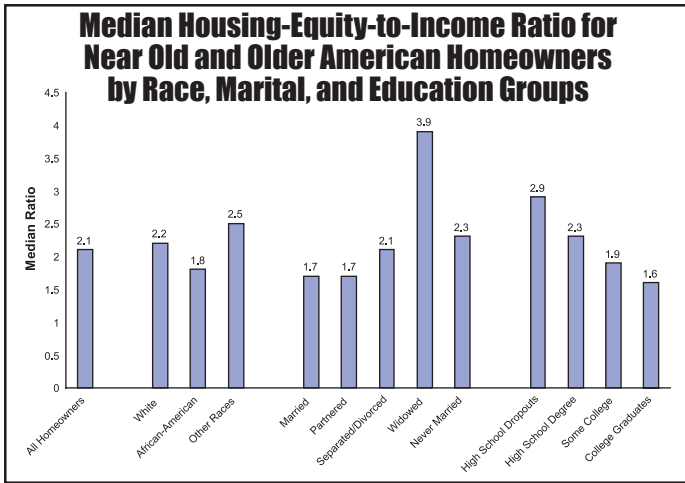


FIGURE 7B

FIGURE 6B

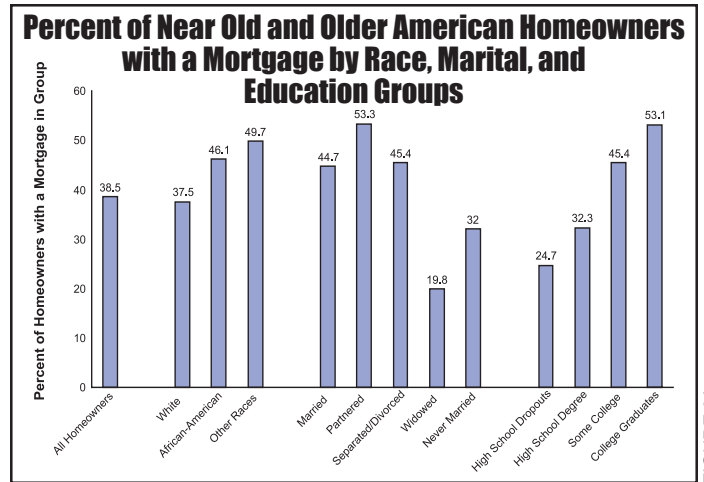
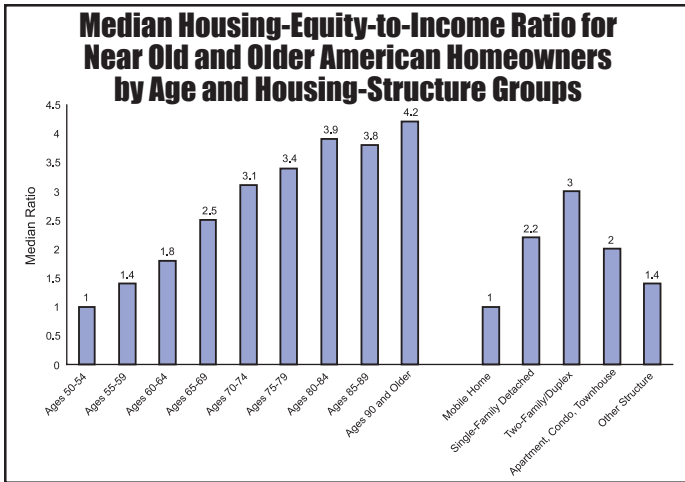


FIGURE 8A

FIGURE 7A

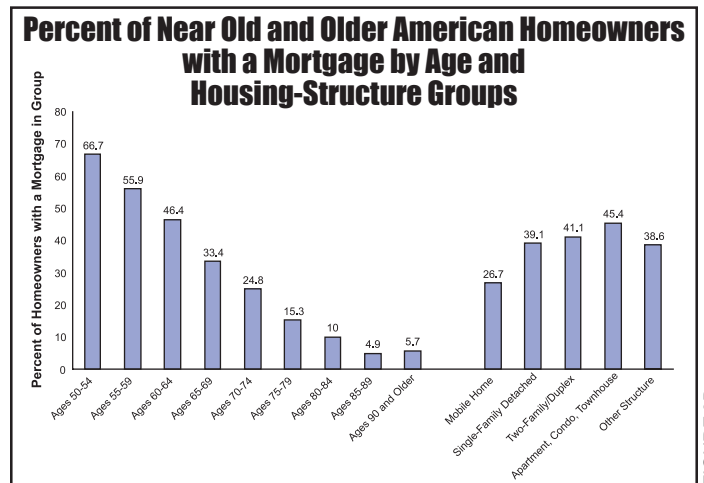
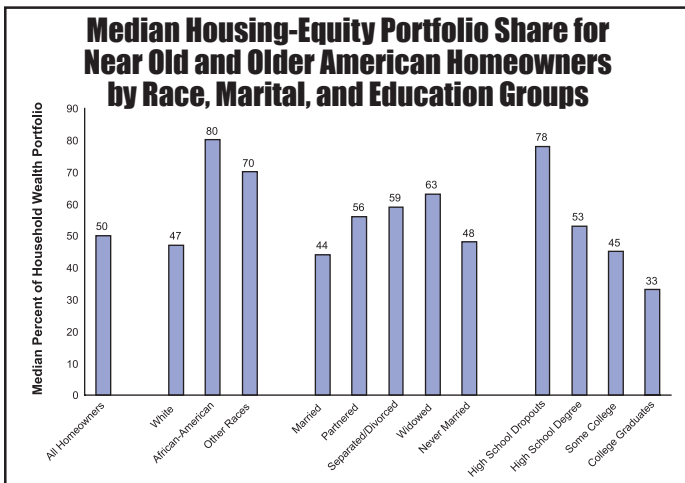


FIGURE 8B

earnings) was \$36,420. Policy-makers have expressed interest in the extent to which home equity might be converted to supplement the incomes of older households through a variety of financial-market products. Although the potential scope for this is discussed below, **Figures 6A and 6B** show, by demographic and structure group, the median housing-equity-to-income ratio among homeowners as a rough measure of the size of home equity relative to income. Over all homeowners, the

median ratio was 2.1:1, which means that the typical older homeowner household had housing equity equal to just over twice its annual income.⁵

Column 3 of Table 1 shows the median (and mean) total household wealth. It is a comprehensive measure of wealth that includes housing equity, the value of vehicles, collectibles, businesses, and financial assets, less the value of all debt, but excludes the expected present value of entitlements to Social Security and employer-provided

⁵ The housing-equity-to-income ratio is calculated first on a household-by-household basis, and then the median and mean of this ratio are calculated. In general, the ratio of the median housing equity in column 2 to the median income in column 3 will not equal the median of the ratio of housing equity to income.

FIGURE 9A

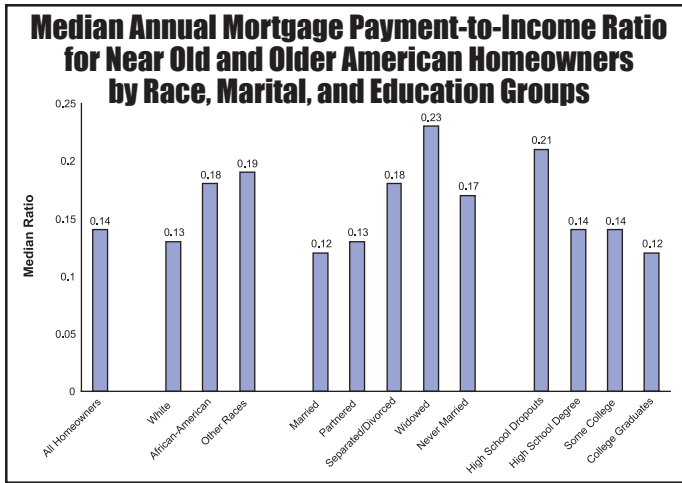
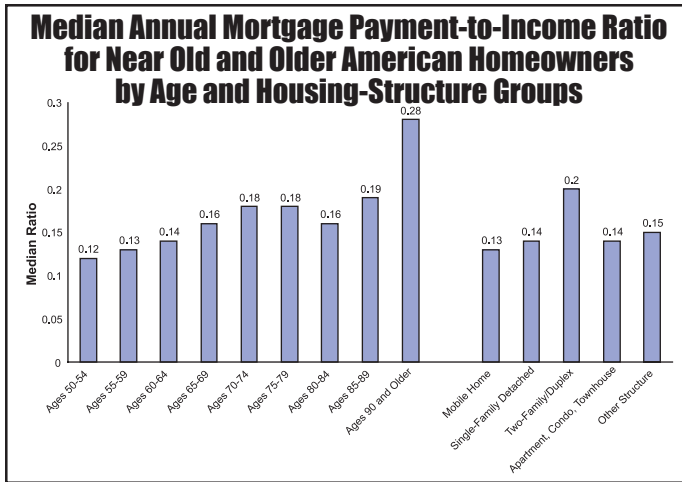


FIGURE 9B



pension benefits to be received in the future. Therefore, wealth in this column represents all of the household's non-pension resources at the time of the survey with which to finance retirement consumption. The median wealth was \$180,800 in 2000. Mean wealth was much higher, \$406,830, which, again, reflects the skewed nature of the distribution of wealth in America, even among homeowners.

Importance of Housing Equity

To help understand the importance of housing equity in total wealth accumulation, **Figures 7A and 7B** show the median housing-equity-to-wealth ratio, expressed as the percentage share of the household wealth portfolio, by demographic and structure group. For the typical older homeowner household, 50 percent of total wealth was in the form of housing equity, with the remaining 50 percent in the form of non-housing wealth. For the typical African-American homeowner, 80 percent of wealth was in the form of housing. This finding underscores the well-known facts that housing is one of the dominant forms of wealth accumulation and that the typical household portfolio is heavily weighted toward housing.⁶

⁶ See Poterba, Venti, and Wise (1994) and Smith (1995) for detailed descriptions of wealth accumulation and portfolios for older households.

⁷ A reverse mortgage is a term used broadly by researchers, policy makers, and the media to describe financial products that allow older homeowners to access their home equity while remaining in their home, but, more specifically, these products typically specify one of five payment options: a tenure payment option, which is an annuity payment made periodically for the remaining duration in the home; a term payment option, which is a periodic payment for a fixed term; a line of credit; a combination of a tenure payment and line of credit; and a combination of a term payment and a line of credit. Ahlstrom, Tumlinson, and Lambrew (2004) and Fratantoni (1999) have provided lucid descriptions of reverse mortgages, and Mayer and Simons (1994), Merrill, Finkel, and Kutty (1994), Rasmussen, Megbologbe, and Morgan (1995), and Fratantoni (1999) have analyzed the potential demand for reverse mortgages.

The subsequent five panels of Table 1 (panels A-E) provide separate tabulations for elderly homeowners by race, marital status, education, age, and structure type. In panel A, white homeowners had higher housing equity, income, and wealth than African-American homeowners and those of other races. Not surprisingly, married couples had the highest housing equity, income, and wealth (see Panel B). Median income among the widowed was only \$18,288. Figure 6A shows that their housing-equity-to-income ratio was 3.9:1, which indicates they were relatively house rich and income poor. Housing equity rose with education (panel C) and with age (panel D) up until age 84, after which it declined. This decline, however, cannot be interpreted necessarily as evidence that older households spent down housing wealth as they aged because the older age groups represented those from older year-of-birth cohorts. Finally, panel E indicates that most of housing wealth in the aggregate was in the form of single-family, detached housing.

Mortgage Status

Although the HRS/AHEAD is particularly well-suited for the study of many economic aspects of aging, it was not designed as a survey of household housing finance. The survey did ask about mortgage balances and payments for up to three mortgages on the primary residence and summary measures for balances and payments for a second residence. Therefore, measures of total mortgage debt and payments for all residences can be calculated. However, the survey did not ask any detail on features of the mortgages, such as origination date, term, fixed-versus adjustable-rate, interest rate, refinancing, etc. This means that only general summary information is available for HRS/AHEAD households.

This summary information is given in **Figures 8A and 8B** and columns 4 and 5 of Table 1. Specifically, the figures show, by demographic and structure group, the percent of older homeowners who had a mortgage on either the primary or secondary (if any) residence. Overall, 38.5 percent of such homeowners had a mortgage in 2000 (Figure 8A). The mean and median mortgage debts, conditional on having a mortgage, were \$72,413 and \$55,000, respectively, as shown in column 4 of Table 1. Column 5 shows the mean and median annual mortgage payments, which were \$9,839 and \$7,296 respectively.

To get a sense of how large these were, relative to household resources, **Figures 9A and 9B** show, by demographic and structure group, the median of the ratio of annual mortgage payments to household income. Over all homeowners with a mortgage, the median ratio was 0.14, which indicates that the typical older homeowner with a mortgage made payments equal to 14 percent of annual gross income. Widowed homeowners had one of the highest ratios: their mortgage payments were 23 percent of income at the median.

Reverse mortgages and other mortgage products could be a means for house-rich, income-poor older Americans to tap into home equity to help meet the cost of long-term care and other needs, yet remain in their homes.⁷ Columns 1 and 2 of **Table 2** give statistics for home equity broken out by whether or not the household had a mortgage. In particular, the sub-sample of households in column 2,

Selected Summary Statistics on Home Equity by Type of Debt for Older Homeowners, Demographic Characteristics and Housing Structure Type

All Dollar Figures are Means in 2000 Dollars with Medians in Square Brackets

Sample	Home Equity for Sub-Sample with	
	(1) Mortgage	(2) No Mortgage
All Homeowners	109,337 [66,000]	120,492 [90,000]
A. By Race		
White	115,078 [70,000]	125,198 [95,000]
African-American	52,333 [37,000]	68,659 [50,000]
Other Races	119,469 [60,000]	92,580 [60,000]
B. By Marital Status		
Married	125,359 [75,000]	136,694 [100,000]
Partnered	70,686 [50,000]	145,640 [80,000]
Separated/Divorced	77,184 [49,000]	101,973 [66,800]
Widowed	78,672 [55,000]	102,318 [80,000]
Never Married	71,763 [51,500]	97,316 [75,000]
C. By Education Group		
High School Dropouts	51,313 [40,000]	78,652 [60,000]
High School Degree	102,615 [60,000]	106,402 [86,000]
Some College	94,627 [66,000]	132,520 [100,000]
College Graduates	149,787 [98,000]	194,575 [146,000]
D. By Age Group		
Ages 50-54	93,175 [63,000]	105,822 [75,000]
Ages 55-59	109,718 [65,000]	118,467 [90,000]
Ages 60-64	141,279 [72,000]	126,552 [94,000]
Ages 65-69	101,454 [70,000]	125,218 [100,000]
Ages 70-74	105,071 [70,000]	122,244 [95,000]
Ages 75-79	105,520 [65,000]	118,816 [95,000]
Ages 80-84	91,565 [65,000]	129,793 [85,000]
Ages 85-89	83,735 [55,000]	105,549 [73,000]
Ages 90 and older	43,492 [44,000]	99,099 [80,000]
E. By Structure Type		
Mobile Home	115,460 [38,000]	31,117 [22,000]
Single-Family Detached	110,670 [70,000]	128,859 [100,000]
Two-Family/Duplex	99,369 [80,000]	137,003 [125,000]
Apartment, Condo, Townhouse	94,456 [60,000]	137,569 [100,000]
Other	44,800 [12,000]	54,021 [50,000]

TABLE 2

Distribution of Near Old and Older American Renters by Race, Marital, and Education Groups

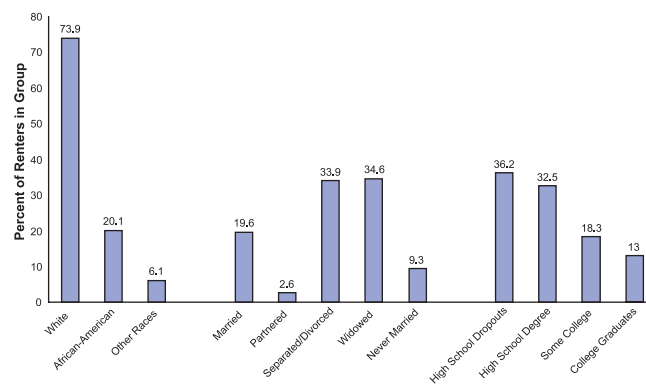


FIGURE 10A

Distribution of Near Old and Older American Renters by Age and Housing-Structure Groups

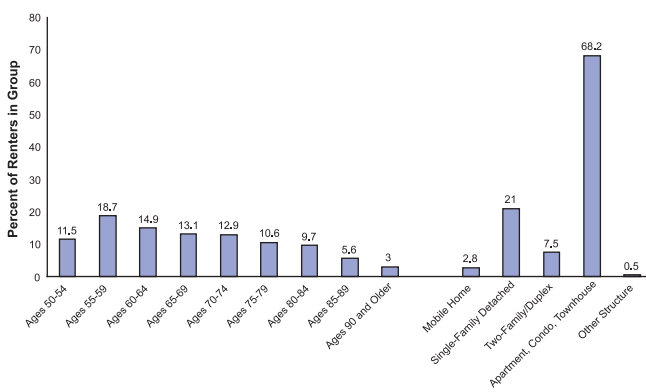


FIGURE 10B

who had no mortgage, are often thought of as the best candidates for home-equity conversion mortgages. Note that the percent of older homeowners without a mortgage was 61.5 percent in 2000. In addition, from Figure 4A, 78 percent of the 43,117,308 older households under study, or 33,631,500 households, were homeowners, so that there were 20,683,373 homeowners with no mortgage. Given that the mean housing equity for this group was \$120,492 (column 2 of Table 2), these figures imply that, in aggregate, these older Americans held \$2.492 trillion in equity in residential structures without debt.⁸

Renter Households

Even though the vast majority of older households are homeowners, many important housing issues affect renters. **Figures 10A-10B** show, by demographic and structure group, the distribution of older renters, and **Table 3** provides a financial profile of older renters.⁹

In general, older renters include a number of heterogeneous groups, each of which may respond to housing policies in different ways. The largest renter group is those who have had relatively lower lifetime socio-economic status (SES). Approximately 10 percent of

⁸ From the Federal Reserve Flow of Funds data, there were an estimated aggregate \$11.267 trillion in real estate assets and \$4.828 trillion in home mortgages on households' balance sheet, which implies an estimated \$8.255 trillion in residential real estate net worth. The source for these figures is Table B.100 of the Federal Reserve's Flow of Funds Accounts of the United States, 1995-2003. Therefore, these figures imply that 30.1 percent (i.e., 2.942/8.255=0.301) of aggregate residential real estate was held by older households without a mortgage. In addition, one feature of the HRS/AHEAD survey that is useful in this context, however, is that it asks whether or not the respondent has a home-equity line of credit, and, if so, whether or not there is a current loan on that line and the amount of the loan. Over all older homeowners, 15.5 percent had a home-equity line of credit, which suggests that at least some older households already had in place a product that would have allowed them to tap into their home equity. Furthermore, these 15.5 percentage points were composed of 8.6 percentage points of homeowners who had a line of credit with an outstanding loan (or 55.8 percent of those with lines of credit; i.e., 8.6/15.5=0.558) and 6.9 percentage points of homeowners who had an untapped line. Homeowners without a home-equity line of credit (regardless of whether they held a mortgage or not) held \$3.205 trillion in real estate net worth or an estimated 38.8 percent of the aggregate \$8.255 trillion of home equity in 2000 from the Flow of Funds.

⁹ A similar table for those who neither own nor rent is not provided because these households only represent 5.6 percent of all older households (Table 1), and the sample sizes become too small for disaggregated analysis.

Selected Summary Statistics on Rent, Income, and Wealth for Older Renters by Demographic Characteristics and Housing Structure Type

All Dollar Figures are Means in 2000 Dollars with Medians in Square Brackets

Sample	(1) Income	(2) Wealth	(3) Annual Rent	(4) Annual Rent-to-Income Ratio	(5) Percent with 0.3 Rent-to-Income Ratio
All Renters	28,736 [15,148]	79,032 [3,000]	5,550 [4,500]	0.54 [0.24]	37.4
A. By Race					
White	32,814 [17,544]	100,158 [7,000]	5,997 [4,800]	0.50 [0.24]	35.3
African-American	15,343 [9,120]	14,392 [20]	4,125 [3,600]	0.71 [0.27]	43.0
Other Races	22,907 [9,072]	36,340 [60]	4,735 [3,768]	0.49 [0.27]	45.7
B. By Marital Status					
Married	48,770 [32,000]	123,598 [11,000]	7,580 [6,000]	0.41 [0.17]	25.5
Partnered	51,960 [23,640]	175,693 [3,363]	5,877 [5,388]	0.29 [0.14]	25.0
Separated/Divorced	30,105 [14,900]	73,137 [2,000]	4,875 [4,200]	0.74 [0.24]	36.3
Widowed	17,196 [11,664]	60,537 [2,000]	5,230 [3,600]	0.43 [0.28]	44.8
Never Married	18,701 [13,992]	53,062 [1,500]	4,892 [4,800]	0.60 [0.28]	40.9
C. By Education Group					
High School Dropouts	12,698 [8,820]	13,829 [200]	3,672 [3,000]	0.61 [0.28]	43.0
High School Degree	23,646 [17,092]	59,919 [5,699]	5,156 [4,680]	0.50 [0.24]	38.2
Some College	35,454 [24,408]	96,766 [14,000]	6,912 [5,940]	0.65 [0.22]	31.9
College Graduates	76,313 [35,820]	283,169 [76,600]	9,836 [7,920]	0.31 [0.18]	28.1
D. By Age Group					
Ages 50-54	56,778 [25,000]	80,313 [3,000]	5,868 [4,968]	0.70 [0.17]	26.1
Ages 55-59	34,622 [20,000]	63,503 [3,363]	5,536 [5,100]	0.70 [0.22]	32.6
Ages 60-64	29,788 [15,800]	111,088 [2,200]	5,656 [4,800]	0.69 [0.24]	38.6
Ages 65-69	21,723 [12,944]	61,171 [1,819]	4,660 [4,080]	0.45 [0.25]	37.8
Ages 70-74	22,067 [12,096]	56,138 [1,000]	4,806 [3,600]	0.40 [0.27]	38.9
Ages 75-79	17,980 [13,368]	66,908 [5,000]	5,312 [4,140]	0.35 [0.26]	41.3
Ages 80-84	20,048 [14,640]	85,496 [8,000]	6,152 [4,800]	0.42 [0.27]	42.7
Ages 85-89	21,965 [12,700]	129,031 [10,000]	7,195 [4,200]	0.43 [0.31]	50.4
Ages 90 and Older	16,835 [11,800]	117,934 [6,500]	6,847 [3,000]	0.44 [0.27]	43.4
E. By Structure Type					
Mobile Home	22,867 [13,728]	17,827 [2,500]	0 [0]	0 [0]	0 [0]
Single-Family Detached	27,715 [16,620]	67,756 [2,500]	4,652 [4,200]	0.47 [0.21]	32.4
Two-Family/Duplex	48,714 [19,824]	103,849 [10,000]	5,846 [5,400]	0.54 [0.19]	29.6
Apartment, Condo, Townhouse	27,132 [14,684]	80,792 [3,000]	6,030 [4,800]	0.59 [0.27]	41.4
Other	21,826 [11,280]	286,025 [6,000]	4,886 [4,080]	0.31 [0.27]	36.9

TABLE 3

elderly individuals have never owned a home at any point in their lives, and these are from the portion of the population that both had low lifetime and current incomes. The first row of the Table 3 indicates that the median income of renters was \$15,148, less than half of the median income of \$36,420 for homeowners in the first row of Table 1. In addition, the median wealth of renters was \$3,000, so that the typical elderly renter had essentially no assets, and of those with assets, much of this is in the form of vehicles that depreciate in value. Another important group of renters includes relatively high SES individuals who choose to rent, especially later in life, for a variety of reasons. Note that the first row of Table 3 indicates that even though the median renter wealth was \$3,000, the mean wealth was \$79,032, which indicates the presence of some very wealthy renters. Wealth disparities among renters can be seen in panel C of the table, which shows that renter wealth rose with education, and in panel D of the table, which shows that median and, especially, mean wealth was higher for older renters compared to younger renters.

Column 3 shows that the median annual rent for all renters was \$4,500. To get a sense of the rent burden for older households, column 4 shows the annual rent-to-income ratio. The median rent-to-income ratio is 0.24, which indicates that the typical elderly household that rents spent 24 percent of annual gross income on rental payments.¹⁰ Column 5 shows an alternative measure of rent burden: the percentage of renters who paid 30 percent or more of annual gross income in rent. The threshold of 30 percent was chosen because it is one of the factors used by the federal government and housing authorities in the amount of subsidy for public and Section 8 housing.¹¹ For all older renters, 37.4 percent had rent-to-income burdens of over 30 percent, suggesting that the availability of affordable rental housing is an important issue for older persons. Finally, **Figures 11A and 11B** show the percent of older renters who lived in public or subsidized rental housing. Just over 6 percent of all renters lived in such housing. Most subsidized renters were non-white, widowed, or high-school dropouts.

IV. A Profile of Functional Status and Health

Housing is unique as a commodity because of the close link between functional status, health, and the demand for housing, especially among older individuals. As discussed above, one feature that distinguishes the HRS/AHEAD from other surveys used to study housing is the breadth and depth of information on functional status and health gathered. **Tables 4 and 5** are modeled after Tables 1 and 3, and present a profile of functional status and health, and how they are related to demographic characteristics and structure type, for homeowners and renters, respectively.

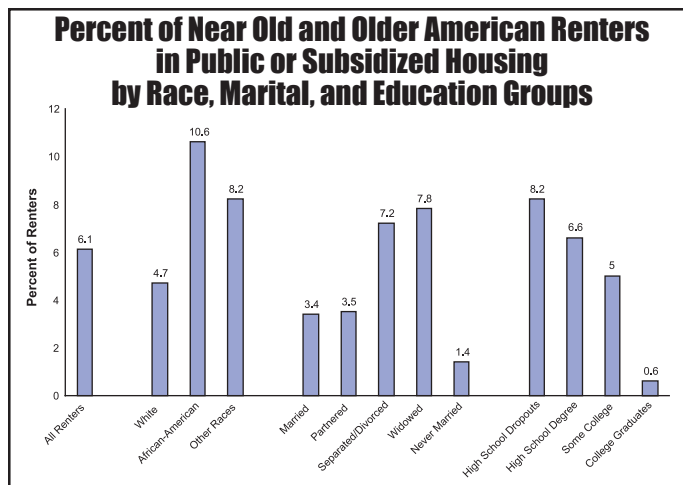


FIGURE 11A

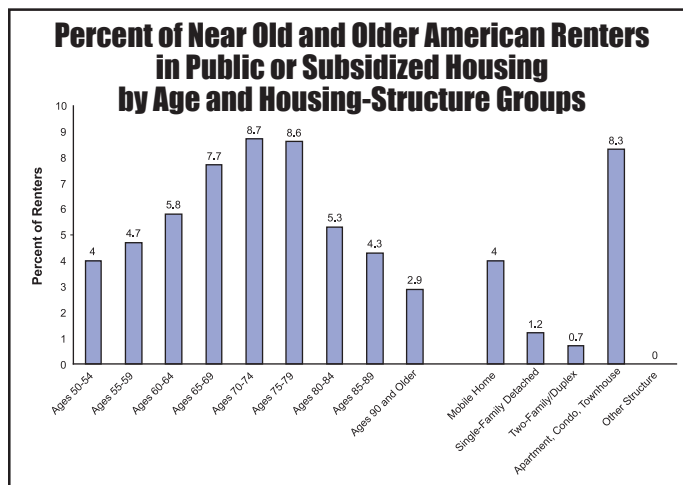


FIGURE 11B

The profile focuses on six indices of functional status and health that are calculated based on responses to a series of underlying questions on health and functional status given during the interview. The first measure is a count of the number of limits to Activities of Daily Living (ADLs). Five such activities—bathing, eating, dressing, walking across a room, and getting in and out of bed—are used to measure various dimensions of an individual’s ability to function in his or her residential space. For each of the five tasks, the index records a 1 if the respondent had difficulty with that task and a zero otherwise. The scores are summed for the five tasks, so that the ADL index ranges from 0 (no difficulties with any of the tasks) to 5 (difficulties with all of the tasks).

The second measure is a count of the number of limits to Instrumental Activities of Daily Living (IADLs). There are five such activities: using a telephone, taking

¹⁰ The mean rent-to-income ratio is 0.54, which is very high. The reason for this is that some households were unable or refused to respond to all of the income questions in the HRS/AHEAD survey. The HRS/AHEAD used a sophisticated method to impute missing components of total income. Households with imputed income are included in the sample, but, in a small number of cases, the income imputations were significantly less than the rent payments the households reported, which generated unusually large rent-to-income ratios that skewed the mean. For this reason, the median ratio shown in column 5 is a more reliable measure of rent burdens.

¹¹ Specifically, eligibility is based on a family’s total annual gross income, family size, and citizenship status. Generally speaking, part of the basis for eligibility is that the family must have income below the “very low” income limit, defined to be 50 percent of the median income in the county of residence, although it is possible for a family to qualify if income is below the “low” income limit, defined to be 80 percent of county median income. If qualified, the family pays rent equal to the larger of 30 percent of income (after some adjustments) or its welfare rent payment (if any), so that the amount of the effective subsidy depends on the relationship between fair market rent for the unit and 30 percent of adjusted family income. Painter (2001) and Yelowitz (2001) discussed the impact of low-income housing assistance on housing and labor force behavior.

medication, handling money, shopping, and preparing meals. For each of the five tasks, the index records a 1 if the respondent reports having had difficulty with that task and a zero otherwise. Then the scores are summed for the five tasks, so that the IADL index ranges from 0 (no difficulties with any of the tasks) to 5 (difficulties with all of the tasks).

Because the ADL index only measures functionality within the residence space, the profile also includes an index of mobility outside of the living space. This measure is a count of the number of limits to five different aspects of mobility: walking several blocks, walking one block, walking across the room, climbing several flights of stairs, and climbing one flight of stairs. For each of the five tasks, the index records a 1 if the respondent reports having had difficulty with that task

and a zero otherwise. Then the scores are summed for the five tasks, so that, like the ADL and IADL indices, the mobility index ranges from 0 (no difficulties with any of the tasks) to 5 (difficulties with all of the tasks).

The remaining three indices utilized below all measure aspects of health, the first of which is the Center for Epidemiological Studies Depression (CESD) score. It is an index of mental health. The CESD score ranges from 0 to 8 and is the sum of two components. The first component is a count of the number of “negative” sentiments the respondent indicated were present in response to the CESD questions. The six negative sentiments were “feeling depressed,” “feeling everything is an effort,” “sleep is restless,” “feeling alone,” “feeling sad,” and “feeling that one could not get going.” The second component is a count of the number of “positive”

Selected Summary Statistics on Functional Status and Health for Older Homeowners by Demographic Characteristics and Housing Structure Type

Sample	(1) Mean Number of Limits to ADLs	(2) Mean Number of Limits to IADLs	(3) Mean Number of Limits to Mobility	(4) Mean CESD Score	(5) Mean Number of Health Conditions	(6) Mean Body Mass Index
All Homeowners	0.34	0.27	1.16	1.82	2.02	28.4
A. By Race						
White	0.33	0.26	1.14	1.79	2.02	28.2
African-American	0.51	0.41	1.40	2.01	2.18	30.2
Other Races	0.34	0.35	1.21	2.37	1.86	29.4
B. By Marital Status						
Married	0.36	0.29	1.22	1.78	2.13	29.5
Partnered	0.43	0.21	1.10	2.31	2.13	29.3
Separated/Divorced	0.22	0.18	0.92	1.75	1.64	27.7
Widowed	0.36	0.31	1.22	2.03	2.07	26.2
Never Married	0.24	0.18	0.78	1.28	1.58	27.3
C. By Education Group						
High School Dropouts	0.57	0.53	1.66	2.42	2.47	28.6
High School Degree	0.35	0.25	1.21	1.88	2.05	28.5
Some College	0.30	0.22	1.09	1.72	1.94	28.7
College Graduates	0.18	0.15	0.76	1.37	1.68	27.8
D. By Age Group						
Ages 50-54	0.24	0.15	0.80	1.98	1.48	29.8
Ages 55-59	0.26	0.17	1.00	1.86	1.67	29.7
Ages 60-64	0.26	0.19	1.04	1.68	1.95	29.1
Ages 65-69	0.28	0.22	1.18	1.75	2.22	28.6
Ages 70-74	0.38	0.28	1.23	1.77	2.29	28.0
Ages 75-79	0.40	0.37	1.37	1.80	2.46	26.8
Ages 80-84	0.60	0.58	1.66	1.93	2.45	25.9
Ages 85-89	0.76	0.76	1.91	2.02	2.46	24.5
Ages 90 and Older	0.95	1.14	1.98	1.97	2.34	24.1
E. By Structure Type						
Mobile Home	0.49	0.38	1.59	2.28	2.43	29.0
Single-Family Detached	0.33	0.27	1.14	1.79	2.00	28.5
Two-Family/Duplex	0.40	0.33	1.19	2.00	2.00	28.0
Apartment, Condo, Townhouse	0.25	0.19	0.95	1.62	1.81	26.5
Other	0.27	0.24	1.32	2.08	2.49	29.6

TABLE 4

sentiments the respondent indicated were absent. The two positive sentiments were “feeling happy” and “enjoying life.” Therefore, the larger the CESD score was, the more “negative” the individual felt, and the poorer mental health the individual had.

The second health measure is an index of medical conditions the individual had. Specifically, this index is a count of the number of conditions a doctor had ever told the respondent that he or she had. The eight conditions were high blood pressure, diabetes, cancer, lung disease, heart disease, stroke, psychiatric problems, and arthritis. The index ranges from 0 (the absence of all eight conditions) to 8 (the presence of all eight conditions) where, obviously, a larger index value indicates poorer health.¹²

The last health measure is the body-mass index (BMI). BMI is defined as weight, expressed in kilograms, divided by the square of height, measured in meters. An individual with a BMI value of less than 18.5 is considered underweight; between 18.5 and 24.9 is considered normal; between 25 and 29.9 is considered overweight; and 30 or higher is considered clinically obese. Although the BMI is widely used as a measure of total body fat, and is highly correlated with the risk of poor health, disease, and death, it has limitations. In particular, it overstates obesity and being overweight for individuals with an athletic build and understates body fat in older individuals, especially those who have lost muscle mass, which is important in the context of studying older individuals.

Selected Summary Statistics on Functional Status and Health for Older Renters by Demographic Characteristics and Housing Structure Type

Sample	(1) Mean Number of Limits to ADLs	(2) Mean Number of Limits to IADLs	(3) Mean Number of Limits of Mobility	(4) Mean CESD Score	(5) Mean Number of Health Conditions	(6) Mean Body Mass Index
All Renters	0.62	0.51	1.52	2.38	2.26	27.9
Public or Subsidized Renters	0.90	0.77	2.06	2.60	2.69	28.7
A. By Race						
White	0.58	0.47	1.47	2.22	2.20	27.5
African-American	0.70	0.62	1.60	2.66	2.46	29.2
Other Races	0.79	0.67	1.76	3.39	2.33	28.3
B. By Marital Status						
Married	0.81	0.74	1.74	2.63	2.52	30.7
Partnered	0.73	0.56	1.83	3.73	2.45	29.2
Separated/Divorced	0.46	0.32	1.32	2.30	2.01	28.3
Widowed	0.65	0.57	1.58	2.24	2.39	26.1
Never Married	0.63	0.54	1.48	2.21	2.07	26.7
C. By Education Group						
High School Dropouts	0.89	0.77	1.93	2.97	2.62	28.4
High School Degree	0.50	0.39	1.38	2.30	2.18	27.8
Some College	0.40	0.31	1.23	1.91	2.06	27.6
College Graduates	0.45	0.41	1.08	1.65	1.72	26.9
D. By Age Group						
Ages 50-54	0.54	0.36	1.04	2.75	1.74	30.5
Ages 55-59	0.59	0.49	1.45	2.30	2.04	29.8
Ages 60-64	0.49	0.34	1.44	2.62	2.27	28.6
Ages 65-69	0.55	0.44	1.58	2.40	2.28	28.4
Ages 70-74	0.65	0.52	1.64	2.48	2.40	27.1
Ages 75-79	0.56	0.47	1.53	1.97	2.51	26.5
Ages 80-84	0.65	0.68	1.59	2.20	2.61	24.8
Ages 85-89	0.56	1.00	2.08	2.08	2.64	25.0
Ages 90 and Older	0.76	1.05	1.95	2.14	2.15	23.1
E. By Structure Type						
Mobile Home	0.56	0.60	1.69	1.97	2.56	28.4
Single-Family Detached	0.65	0.62	1.45	2.57	2.30	28.0
Two-Family/Duplex	0.40	0.28	1.32	2.26	2.16	28.7
Apartment, Condo, Townhouse	0.64	0.50	1.55	2.35	2.24	27.7
Other	0.10	0	1.38	1.82	2.24	32.8

TABLE 5

¹² As one might imagine, the presence of all eight conditions is quite rare. In fact, only 3 individuals in the 2000 wave indicated they had been told by a doctor they had all eight conditions.

As baselines, the first rows of Tables 4 and 5 show the mean of each of the six measures of functional status and health for older homeowners and renters, respectively. For married couples, the HRS/AHEAD measures two values for each of six measures, one for the head and one for the spouse, but only the higher of the two is used in the tabulations in Tables 4 and 5. This was done for two reasons: housing choices for older married couples are, in large part, driven by the needs of the frailest member; and, from a purely expositional point of view, using one value per household reduced the number of tables needed to present the profile. The results were qualitatively unchanged when the indices for both spouses and couples were incorporated. The mean number of limits to activities of daily living (ADLs) for homeowners was 0.34. The comparable number for renters from the first row and second column of Table 5 was 0.62, which indicates that older renters had on average almost double the number of ADL limitations of homeowners. A similar pattern emerges for the instrumental activities of daily living (IADLs): the mean for homeowners was 0.27 and the mean for renters was 0.51. Homeowners had an average of 1.16 limitations to mobility—walking several blocks, walking one block, walking across the room, climbing several flights of stairs, and climbing one flight of stairs—and renters had a somewhat higher average of 1.52 limitations. Overall, renters had lower functional status than owners.¹³ In addition, research from other data sources shows that among renters, subsidized renters have much higher disability than other renters, further refining how to target toward need. The second row of the table

confirms this is these data: renters in public/subsidized housing have even lower levels of functional status and health.¹⁴

Columns 4-6 of Tables 4 and 5 show the mean values of the three health indices, respectively. Renters had a higher mean CESD score (2.38) than homeowners (1.82), which indicates relatively poorer mental health among renters. On average, renters had a somewhat higher number of medical conditions (2.26) than homeowners (2.02). So, homeowners appear to have had better health. However, the one dimension on which older renters and owners differ is the body-mass index (BMI), for which renters had a lower BMI (27.9) than homeowners (28.4), although both means classified renters and owners as “overweight” on average. All of the differences in means between renters and owners shown in the first rows of Tables 4 and 5 were statistically significant at the 1 percent level, including the difference in BMI.¹⁵

For the purposes of comparability with the housing- and financial-behavior outcomes for homeowners and renters in Tables 1 and 3, respectively, the remainder of Tables 4 and 5 present disaggregated statistics on the six functional status and health measures by race, marital status, education, age, and structure type. Most notably, the disaggregated patterns conform to what is widely known about functional status, health, race, and SES: higher SES groups, such as the highly educated and homeowners had fewer functional limitations and had better health than low SES groups; whites had better functional status and health than African-Americans; and functional status and health declined with age.

Percent Change in the Odds of Choosing Given Housing Type Relative to Owner-Occupied Single-Family, Detached Home with No Modifications for a One Unit Change in Functional Status and Health Indices, Based on Multinomial Logit Estimation

Double Asterisks Indicate Statistical Significance at the Five-Percent Level, Single Asterisk Indicates Significance at the Ten-Percent Level

Housing Type Chosen	(1) Percent in Housing Type	(2) Number of Limits to ADLs	(3) Number of Limits to IADLs	(4) Number of Limits to Mobility	(5) CESD Score	(6) Number of Health Conditions	(7) Body Mass Index
A. Structures that have been Modified for the Needs of the Elderly and Disabled							
Rented Single-Family Home	0.2	105.2**	5.6	-16.8	-25.3**	52.5**	-2.1
Rented Apartment, Condo, Townhouse	1.2	16.7**	26.0**	17.6**	1.1	19.2**	1.1
Owned Single-Family Home	4.4	27.6**	5.9	15.2**	-1.1	10.9**	2.1**
Owned Apartment, Condo, Townhouse	0.5	49.8**	-0.9	-2.7	-1.0	1.8	0.3
B. Structures that have not been Modified							
Rented Mobile Home	0.4	-12.9	28.9	-1.4	-13.7	30.4**	-4.1
Rented Single-Family Home	3.5	-2.3	18.4**	-0.2	7.1**	8.5**	-2.6**
Rented Two-Family/Duplex	1.3	8.4	-22.5	3.3	1.1	12.8*	-0.8
Rented Apartment, Condo, Townhouse	10.2	16.9**	-1.1	1.1	4.7**	4.3	-1.1*
Owned Mobile Home	5.9	-1.5	0.2	10.2**	1.1	15.1**	1.0
Owned Two-Family/Duplex	1.9	3.8	3.6	1.5	1.6	1.6	0.4
Owned Apartment, Condo, Townhouse	4.5	-1.8	-3.5	3.2	1.0	-4.7	-3.9*

TABLE 6

¹³ The comparisons of raw differences between owners and renters do not control for age differences between the two groups.

¹⁴ These results are consistent with the findings of Redfoot and Kochera (2004), who examined data from the 2002 American Communities’ Survey.

¹⁵ Again, these are simple comparisons that do not control for differences in age between the groups. In particular, the lower BMI, but poorer health, of older renters could be explained, in part, by the fact that renters tend to be older.

V. Functional Status, Health, and Housing Demand

One limitation of the descriptive analysis in the previous tables is the difficulty in making firm statements about the relationship of functional status and health to housing choices because many other factors affect functional status, health, and housing simultaneously. **Table 6** integrates the underlying data from Figures 5-13, Tables 1 and 3 on housing, and Tables 4 and 5 on functional status and health to examine the impact of functional status and health on the demand for different housing-structure types among older Americans. The analysis uses a multivariate framework that helps to isolate the independent impact of functional status and health on housing choices.

Specifically, Table 6 presents results from the estimation of a multinomial logit regression model of the impact of functional status and health on housing choices. The dependent or outcome variable is the housing choice the elderly household made measured along three dimensions: the type of structure (e.g., mobile home, single-family detached home, apartment, etc.); the housing-tenure choice (e.g., own, rent); and whether or not the structure had been modified to make it “easier or safer for an older person or a disabled person to live there.” This last dimension is particularly important given the strong desire of the older Americans to age in place.¹⁶ Overall, older homeowners could choose 12 possible combinations of structure, tenure, and modifications. Eleven of these possibilities are shown in the left-most column of Table 6: the four that involved modifications are shown in panel A, and the 7 that did not involve modifications are shown in panel B. Column 1 of the table shows the percent of older households who chose that housing type. The twelfth possibility, which was an owner-occupied, single-family, detached home with no modifications, was the most frequently chosen housing type in the HRS/AHEAD—with 66 percent of older households having chosen this type—and constituted the base group for the multinomial logit regression. The six indices of functional status and health are the primary explanatory or independent variables of interest.

Each entry in Table 6 shows the percentage impact of an increment of 1 to the associated functional status or health index on the odds that the older household chose the associated housing type relative to the base housing type—which was an owner-occupied, single-family, detached home with no modifications. The analysis accounts for the impact of income, wealth, region, as well as the race, marital status, education, and age characteristics shown in the profile tables above.¹⁷ For example, the table entry in the first row of panel A and column 2 indicates that, based on the multinomial logit regression, the impact of an additional limit to one of the five Activities of Daily Living (ADLs) raised the odds by 105.2 percent that the household chose to rent a single-family, detached home with modifications relative to owning a single-family, detached home without modifications (the base choice). Because an increase of 100 percent means a doubling of the odds, this is a very substantial impact of functional status on housing choice. The double asterisks indicate that this effect was

statistically different than zero at the five-percent level. A single asterisk indicates significance at the ten-percent level.¹⁸

Because the base housing-choice category is an owner-occupied, single-family, detached home with no modifications, which required a fair amount of independence for older households, an increase in functional or health limitations should have resulted in a relative increase in the demand either for structures that required less upkeep, such as apartments, condominiums, and townhouses, and/or had structural modifications. In other words, the expected value for the entries in panel A of Table 6 would be positive.

Indeed, for a number of the functional and health indices, the entries are positive. For example, in panel A, column 2, an additional ADL limitation raised the odds that the older households chose away from an owner-occupied, single-family, detached home with no modifications toward a residence with modifications, either in a multi-unit structure or detached. For example, an additional such limitation raised the odds that an owner-occupied apartment, condo, or townhouse was chosen. Overall, the three indices that had the most power in explaining housing choices that involved structural modifications designed for the elderly were the ADL, mobility, and health-conditions indices. The remaining three—IADL, CESD, and BMI—did not explain housing choices consistently. In addition, for the results for housing choices that did not involve modifications, shown in panel B, none of the indices did a particularly good job of explaining the pattern of observed housing choices for older Americans, with the exception of the index of health conditions.

	(1)	(2)	(3)
Subjective Probability of Moving in Two Years	Percent of Those Aged 67 and older in 2000	Percent Who Did Not Move by 2000	Percent Who Moved by 2000
No chance	69.0	93.3	6.7
From 1 to 10 percent	7.4	91.6	8.4
From 11 to 20 percent	2.4	90.1	9.9
From 21 to 30 percent	2.4	94.6	5.4
From 31 to 40 percent	0.9	84.9	15.1
From 41 to 50 percent	10.5	85.3	14.7
From 51 to 60 percent	0.5	79.3	20.7
From 61 to 70 percent	0.5	90.6	9.4
From 71 to 80 percent	2.2	68.2	31.8
From 81 to 90 percent	0.6	61.4	38.6
From 91 to 100 percent	3.6	48.4	51.6
All	100.0	89.8	10.2

TABLE 7

¹⁶ See American Association of Retired Persons (2000) for a detailed study of the demand to age in place.

¹⁷ Specifically, income, wealth, and age were entered in the multinomial logit specification as cubic functions to allow for potentially non-linear effects on housing choice. The results in Table 6 all come from a single multinomial logit estimation in which all of the functional status and health indices appear as explanatory variables.

¹⁸ All significance levels refer to two-tailed hypothesis tests.

The Percentage Increase in the Likelihood of Residential Mobility From Increases in the Subjective Probability of Moving and Changes in the Indices of Activities of Daily Living and Health Conditions

Double Asterisks Indicate Statistical Significance at the Five-Percent Level,
Single Asterisk Indicates Significance at the Ten-Percent Level

Outcome	(1) Increase in the 1998 Subjective Probability of Moving	(2) Increase in the Number of Limits to ADLs	(3) Increase in the Number of Health Conditions
Likelihood of Moving between 1998 and 2000	13.1**	6.6**	6.6*

TABLE 8

VI. Changes in Functional Status and Health and Residential Mobility

Despite the desire to age in place, many older Americans change their residences. For the younger old, housing changes typically occur because of job-related reasons. For the older old, housing changes typically occur for health-related reasons. A particularly useful feature of the HRS/AHEAD is that it asked individuals 65 and older about their subjective probabilities of moving over the next two years. Because two years is the interval between interviews, these expected-mobility responses in one wave can be compared to actual residential mobility between waves to assess the extent to which moves by older Americans were anticipated versus unanticipated.

Columns 2 and 3 in **Table 7** show the frequency of older households who stayed and moved, respectively, between 1998 and 2000, among those who were 65 and older in the 1998 wave of the survey and, hence, were 67 and older in the 2000 wave. Each row shows the subjective probability of moving as expressed in the 1998 wave. For example, in column 1, 69 percent of those aged 67 and older indicated in 1998 that there was no chance they would move in the next two years. Of this group, 93.3 percent did not move, but 6.7 percent did move, which was unanticipated as of 1998. From column 1, the positive subjective probabilities were not smoothly distributed from 0 to 1. Instead, they were lumped at 0.1, 0.25, 0.50, 0.75, 0.80, 0.90, and 1. Reading down column 3, the actual mobility rate rose from 6.7 percent, for those who said no chance, to 51.6 percent, for those who said they had between a 90 and 100 percent chance of moving, but did not always smoothly rise across the probability categories. Even for those who felt certain they would move, only about half actually did, although the data are not detailed enough to know why the need for a move was eliminated. In the final row of the table, over all households, the two-year mobility rate was 10.2 percent.

Table 8 explores the impact of changes in functional status and health on the likelihood that an elderly household moved.¹⁹ Specifically, the table presents results from the estimation of a probit regression model in which the dependent or outcome variable was whether or not the

household moved. The entry in column 1 of the table shows the percentage impact of an increment of 10 percentage points to the subjective probability of moving, accounting for the impact of changes in the number of limits to ADLs and health conditions, the two most important indices from the analysis of housing choice in **Table 6**, and in income and wealth in the two years from 1998-2000, as well as region, and the race, marital status, education, and age characteristics shown in the profile tables above.²⁰

The estimation results indicate that an increase in the subjective probability of moving of 10 percentage points raised the likelihood of a move two years hence by 13 percent. The double asterisks indicate that this effect is statistically different than zero at the five-percent level. A single asterisk indicates significance at the ten-percent level.²¹ The entry in column 2 of the table shows the percentage impact of an increment of 1 limit to the ADLs on the probability of moving, accounting for the impact of the subjective probability of moving and changes in the number of limits to health conditions and in income and wealth in the two years from 1998-2000, as well as region, and the race, marital status, education, and age characteristics shown in the profile tables above. The results also indicate that the loss of an additional ADL raised the likelihood of a move two years hence by 6.6 percent. Finally, the entry in column 3 of the table shows the percentage impact of an increment of 1 limit to the health conditions on the probability of moving, accounting for the impact of the subjective probability of moving and changes in the number of limits to ADLs and in income and wealth in the two years from 1998-2000, as well as region, and the race, marital status, education, and age characteristics shown in the profile tables above. The estimation results indicate that the loss of an additional health condition raised the likelihood of a move two years hence by 6.6 percent as well. Therefore, even though much of moving was anticipated, changes in functional status and health were important determinants of mobility behavior for the elderly.

¹⁹ See Venti and Wise (2001a and 2001b) for analyses of relationship between health, moving, and housing equity in the AHEAD data.

²⁰ Specifically, income, wealth, and age were entered in the probit specification as cubic functions to allow for potentially non-linear effects on mobility. The results in **Table 8** all came from a single probit estimation in which the functional status and health indices and the subjective probability appeared as explanatory variables.

²¹ All significance levels refer to two-tailed hypothesis tests.

VII. Conclusion

This article has examined the housing choices of a large sample of individuals ages 50 and older in 2000. These individuals, who came from the pre-Baby Boom cohorts, represented about 44 million American households. For homeowners, who comprised about 80 percent of these households, there was a strong desire to age in place. In addition, the analysis showed there is a strong demand for structural modifications to accommodate older persons. That said, older Americans do move—although at a much lower rate than younger Americans—and much of that residential mobility is anticipated well in advance. A primary driver of mobility comes from unanticipated declines in functional status and health. One aspect that this analysis did not touch on is the exact link between the magnitude of the decline in functional status and health and the tradeoff between modifying the current structure so that the person may age in place, or a move to a more suitable living arrangement.

Within the pre-Baby Boom cohorts, there are important differences in housing needs. The housing needs of homeowners are prominent just because of the sheer extent of homeownership, yet 20 percent of individuals in these cohorts live in rental housing and 5 percent live in public or government-subsidized rental housing. The analysis indicated that these individuals are pressed from two directions: not only do these individuals have poorer functional status and health, and, therefore, greater housing needs, but more than one-third of them spent more than 30 percent of their income on rent. Hence, affordable housing that helps meet the needs of the pre-Baby Boom cohorts in the rental market is an important concern.

In addition, although this analysis did not examine cohort differences per se, it is widely known that the younger cohorts within the pre-Boomers are more educated, wealthier, and healthier, so that the younger portion of the pre-Boomers likely will need specialized housing services at later ages than the older pre-Boomer cohorts.²²

Because these trends in education, wealth, and health have continued across cohorts, it seems likely that the Baby Boomers, the oldest of which are 58 currently, will need specialized housing services at later ages as well. This means that, even though the Baby Boomers are a large part of the population, their housing decisions in the near term will be influenced to a great extent by late-career employment and retirement behavior. The declines in functional status analyzed here will become particularly important in the longer term. Overall, there will be an increasing demand for housing that helps enable older individuals to maintain active, independent lives, but because substantial increases in functional limitations generally occur after age 75, Boomer-driven demand for specialized housing may be a couple of decades away.

Although there has been a substantial amount of research on housing needs and aging by demographers, sociologists, and gerontologists, homebuilders, financial-services providers, and policymakers need more information regarding this important and growing market. In particular, additional research and analysis that integrates the health status and housing choices of older Americans and is able to better predict behavior will be necessary to ensure the continued development of private and government programs, and housing, mortgage, and insurance products targeted to this market. ■

²² See Redfoot and Kochera (2004) for detailed analysis of housing needs in the rental market and Redfoot and Pandya (2002) for a lucid discussion of potential differences across cohorts in housing-service needs.

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Technical Appendix

The Health and Retirement Study (HRS) began in 1992 with a nationally representative random sample (plus an oversample of minorities and Floridians) of individuals born in 1931-41 and their spouses (regardless of birth year). In total, 12,682 individuals were interviewed in the first wave. This initial cohort has been re-interviewed in 1994, 1996, 1998, and 2000. The Asset and Health Dynamics of the Oldest Old (AHEAD), a companion survey, commenced in 1993 with individuals born 1896-1923 and spouses (regardless of birth year). In total, 8,922 individuals were interviewed in the first wave and have been re-interviewed in 1995, 1998, and 2000. In addition, the HRS/AHEAD began interviews in 1998 with large random samples of individuals born in 1942-46, the so-called War Babies, and 1924-1930, the so-called Children of the Depression (CODA). Both groups were re-interviewed in 2000. In combination, the original HRS and AHEAD cohorts, the War Babies, and the CODA cohort represent a large, random sample of individuals born before 1947 and spouses regardless of year of birth.

As clearly articulated by the Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century (2002), there is a strong complementarity between functional status, health, and housing characteristics, and this plays a critical role in the housing decisions of older Americans. The HRS/AHEAD devotes a significant portion of interview time toward measuring and assessing the health, cognitive, and functional status of the respondents. Surveys focused on housing typically do not ask detailed questions on health and functional status—the AHS did ask about disability as a special supplement in 1995—and surveys focused on health, such as the National Health Interview Survey (NHIS) and the National Health and Nutrition Examination Survey (NHANES), do not ask detailed questions on housing. Although Venti and Wise (2001a and 2001b) have used the HRS/AHEAD data, almost all other economic studies of aging and housing have used other data sources. Specifically, the various waves of the AHS have been used heavily in descriptive and multivariate analyses of older households, e.g., Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century (2002). The Retirement History Survey (RHS) and the Panel Study of Income Dynamics (PSID) have been used by economists to examine the older households longitudinally: Merrill (1984) and Venti and Wise (1989, 1990, 1991) with the RHS and Sheiner and Weil (1993) and Megbolugbe, Sa-Aadu, and Shilling (1997) with the PSID, among others. However, the RHS began in the late 1960s, ended in 1979, and is now quite dated, whereas the PSID has very small numbers of older individuals, making statistical precision a serious concern, especially for the oldest old.

This analysis focuses on calendar year 2000 for three reasons. First, 2000 is the most recent year for which detailed health and housing data are available for all individuals in the HRS/AHEAD. Specifically, the data used in the analysis come from the final data release from the 2000 interview. All HRS/AHEAD individuals were re-interviewed in 2002, but, as of the time of writing, only preliminary data were available from the 2002 interview. Second, even though some of the sample individuals were interviewed as early as 1992 (e.g., those born 1931-41), the HRS/AHEAD only sampled the full range of the older population beginning in 1998. Some of the 1998 data are used in the analysis. Finally, some of the survey questions concerning health, housing, and residential mobility were not asked in consistent ways across some of the waves prior to 2000, which complicates the measurement of some of the behaviors under consideration. Most of the changes in question wording were purposeful and either came about because of improvements in the type and amount of information that was collected or because of the movement to a standard questionnaire when the HRS and AHEAD surveys were merged in 1998.

The analysis sample has two restrictions. First, even though the HRS/AHEAD tracks survey respondents when they enter a nursing home, the analysis will be limited to individuals who do not reside in nursing homes. The primary reason for this is that only 425 respondents are in nursing homes in 2000, which, for the type of disaggregated analysis given below, yields sample sizes that are too small to make accurate statistical statements about the nursing-home population. Second, the analysis is limited to individuals age 50 and older. Specifically, even though the HRS/AHEAD is a random sample of individuals born before 1947 and, therefore, age 54 and older in 2000, there are many spouses that were born in 1947 or later. If those spouses were age 50 or older in 2000, they were included in the analysis. Overall, the analysis sample is composed of 18,207 individuals who comprise 12,467 households in 2000. All figures presented in the analysis are weighted using the household-analysis weights provided by the HRS/AHEAD that adjust for differential sampling and sample attrition. When weighted, the analysis sample represents 63,847,993 individuals and 43,117,308 households in the population.