

**Effects of the Economic Crisis on the Older Population:
How Expectations, Consumption, Bequests, and Retirement Responded to
Market Shocks**

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Abstract

We study the effects of the 2007-2009 recession on the population age 55+. Households in and near retirement have suffered sizeable losses in assets as a result of the economic crisis. There are a number of ways in which households might respond: reduce spending and with that increase saving, work longer, and/or bequeath less. Using longitudinal data from the Health and Retirement Study and its supplemental surveys, we find that all of these adjustments have been important.

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The financial crisis that unfolded rapidly in the latter part of 2008 developed into a recession that stands out from other recessions of the post-World War II era in several important ways. The stock market began to decline in October 2007. At first moderate, the pace of the decline increased rapidly, coinciding with the troubles in the financial sector that began in September 2008. By March 2009, the S&P 500 had lost more than 50 percent from its peak 2007 level (Coronado and Dynan, 2012). The swings in the economic environment have been unequalled since the Great Depression, and the crisis has also affected several markets simultaneously (housing, stock and labor market), consequently providing a number of channels through which individuals and their households might be affected. The economic crisis and the subsequent increase in the unemployment rate operated through several channels, affecting people of different ages in differing ways.

The at-retirement population has been vulnerable to negative shocks in the equity and housing markets because of their asset positions, and somewhat less obviously because of linkages to their children. On the positive side, they have been relatively unaffected by unemployment. Furthermore, because of the importance of social security to the bottom half of the income distribution, many less-well-off older households were unaffected directly by the crisis. The older pre-retirement population has also accumulated equity and, because of the transition from defined benefit (DB) to defined contribution (DC) pensions, their sources of retirement income security are subject to capital market risk. In on the other hand, because of

relatively high rates of labor force participation, they are vulnerable to unemployment. When they lost jobs, they had little time to recover from those losses. In contrast to the retired population, those of working age at the lower end of the income distribution were particularly vulnerable to unemployment. Another consideration is how housing values behaved. After appreciating for some time, the housing market reached its maximum in May 2006 and then began a long downward slide. While stocks have recovered somewhat since then, the housing market has not.

This chapter studies the effects of the financial crisis on the population age 55+ drawing on longitudinal data from the Health and Retirement Study (HRS), a household dataset containing observations from the time before the economic crisis began until it was well underway, with the latest available data point in 2009. The HRS data, collected every two years since 1992, span this period. Especially when combined with supplemental data collections, the HRS provides very rich information for the study of the effects of the financial crisis on older households: Specifically, in 2001 the HRS began collecting longitudinal data on household spending: this effort is repeated every two years. In 2009, much of the HRS Internet study content was dedicated to eliciting information relevant to measuring the effects of the financial crisis. In what follows, we analyze changes in consumption associated with the crisis and examine housing, expectations, and retirement among older Americans.¹

Data sources

The analysis focuses on the Health and Retirement Study from the 2006 and 2008 core surveys, as well as from two supplemental studies, the Consumption and Activities Mail Survey (CAMS), and the HRS Internet Study. The HRS is a biennial panel first conducted in 1992, with

the target population the cohorts born between 1931 and 1941 (Juster and Suzman, 1995). Additional cohorts were added in 1993 and 1998, so that in 2000, the HRS represented the population from the cohorts of 1947 and earlier. In 2004, new cohorts were again added, making the HRS representative of the population age 51+. In September 2001, CAMS Wave 1 was mailed to 5,000 households selected at random from households that had participated in HRS 2000. In couples households, it was sent to one of the two spouses at random. The fact that the CAMS sample was drawn directly from the HRS 2000 sample offered an important advantage: it allowed the CAMS data to be linked to the vast amount of information collected in prior waves of the HRS on those participating in the core longitudinal survey. In 2003, 2005, 2007, and 2009, CAMS waves two through 5 were sent to these same 5,000 households.² To facilitate panel analysis, the structure of the questionnaire was almost the same in each of these waves (Hurd and Rohwedder, 2006).

CAMS asked respondents about their spending in each of 32 categories which cover almost all spending according to the Consumer Expenditure Survey (CEX). Rates of item nonresponse were small. Some values could be imputed to zero with considerable confidence, due to the information in the linked HRS core data.³ The 2009 HRS Internet survey is the third wave in a series of Internet surveys of a subset of HRS respondents. Eligibility to participate in the 2009 wave was determined by whether, in the 2008 core HRS survey, a respondent reported regularly using the Internet, and about 7,000 respondents qualified.⁴ The resulting sample tends to over-represent those with higher education, but this bias is less for those age 65 or younger in the HRS; in this age group, Internet usage is more common throughout the distribution of both education and wealth.⁵ The field period was March 2009–August 2009. For the purposes of this chapter, we will refer to the data collection as having taken place in May 2009.

The HRS Internet survey has a module on the economic effects of the crisis on individual households, as well as modules on health and life satisfaction. To measure responses about the crisis's economic effects, broadly our approach is to find within-person changes in important outcomes that have resulted from the crisis.

Effects of the crisis on the economic circumstances of HRS households

A broad gauge of the scale of the impact of the economic crisis is the simple response to a question about whether a respondent has been affected. About 28 percent of respondents reported that they had been affected a lot, about 46 percent said they had been affected a little, and just 26 percent reported not having been affected.

Effects on consumption. Economists deem consumption a better measure of economic well-being than income or wealth. To judge whether households reduced consumption in response to the crisis, the HRS Internet survey asked respondents how their spending compared with a year earlier. In May 2008, prices in the housing market had begun to decline, but the stock market was still at a relatively high level (the large declines in stocks began later in the year).

Unemployment was at 5.4 percent although it had been increasing. Accordingly, from the typical household's point of view, the economic crisis was still in the future.

Table 1 shows the percentages of respondents indicating in May 2009 that their spending had increased, decreased, or remained the same, compared with a year earlier. In normal times, we would expect that for the younger age groups, spending would increase over time, and this is what we observe in cross-section spending data. But among respondents in their 50s, more than 30 percent said their spending had decreased, whereas only about 15 percent said it had increased. For those 65+, however, the pattern reverses, which is a first indicator that the older

population was relatively better protected from the effects of the crisis.

Table 1 here

The Internet survey contained follow-up questions to assess more directly the importance of various reasons for any changes in spending for respondents reporting having lowered their spending. Table 2 shows the percent that indicated that a specific reason for reducing spending was very important or somewhat important. Averaged over all ages, 85 percent of respondents indicated that being worried about the economic future was an important factor. Although the differences by age are not large, in the oldest age group this percentage was somewhat lower. There is disagreement in the literature about whether households will change their spending in response to movements in asset prices such as stocks or housing. In the HRS, about half of respondents who had decreased spending attributed their actions to declines in asset prices (stocks and housing). With regard to the other reasons, there is a clear age gradient: the older population was less likely to have reduced spending because of the need to reduce debt, having a lower income, or worse employment prospects.

Table 2 here

The Internet survey also asked those respondents who said their spending had increased to indicate the importance of various reasons. Broadly speaking, a household's spending might increase due to an increase in the household's economic resources (a positive reason) or due to an increase in the household's needs (possibly a negative reason), such as higher mortgage payments, for example. Table 3 shows the distribution of responses among those who said spending had increased. Almost all respondents cited increased spending needs. About half of the respondents were optimistic about their economic future, in sharp contrast to those who had reduced spending (Table 2). It is notable, however, that among those age 55-64, fewer had

increased spending because of optimism. Because just 15 percent of this group had increased their spending (Table 1), the fraction of the total age 55-64 population that spent more because of optimism is only about 6 percent.

Table 3 here

About one-third of the 55-64 year-olds cited better employment as a reason for increasing spending, compared with a negligible percentage in the 75+ age group which is mostly retired. About 30 percent of those age 55-64 attributed more spending to higher mortgage payments. This is in line with rising housing debt (which we will examine directly below), and possibly with balloon mortgages that were a frequent financing instrument during the housing-market bubble.

These changes in consumption observed in the Internet survey are self-assessed. While respondents may have good qualitative knowledge of the changes they have made, they are considerably less likely to have a good quantitative assessment. Accordingly, to quantify the magnitude of spending declines, we use CAMS to compare two-year panel transitions in spending in ‘normal’ times, with two-year panel transitions during the economic crisis. We define ‘normal’ times to be 2001-07, and the time of the economic crisis to be 2007-09. We average three panel transitions in spending (2001-03, 2003-05, and 2005-07) so as to smooth out noise in the data and average out other macro shocks. We disaggregate by age band because the older population may have been better protected, as suggested by the self-assessed differences in changes in spending shown in Table 1.

Table 4 shows changes in mean and median spending both overall and for nondurables, adjusted for price changes.⁶ Among those age 50-64, mean total spending declined by about 2.1 percent every two years, averaged over the period 2001-07. This reduction is likely due to a

number of reasons such as changes in household composition or parental support for children's education.⁷ The decline in mean nondurable spending among this age group was about one percent per two-year period. Among those age 65+, reductions were much greater, amounting to 6.3 percent in mean total spending, and 4.9 percent in mean nondurable spending. These reductions are likely life-cycle effects. During the economic crisis, consumption fell at a much greater rate: almost 10 percent for the younger age group, and nine percent for the older one. The levels and changes in the medians are smaller, but the patterns are the same.

Table 4 here

We summarize and compare the results for the two age groups in Table 4-5. Among those age 50-64, mean spending declined between 2007-09 by 7.6 percentage points more than between 2001-07. Among those 65+, spending declined by 3.4 percentage points more in the later period than the earlier. Our interpretation is that, indeed, spending declined in response to the economic crisis, and that the comparisons of actual measured spending are consistent with the self-assessments in Table 1. Furthermore, spending by the older population declined less during the crisis than spending by the younger population in keeping with our expectations that the older population was better protected against the economic crisis and the self-reports of Table 1.

Table 5 here

Effects on housing. Whether homeowners were affected by the large drops in home values, and how seriously they were affected, depends on where they live and when they live. According to the Case-Shiller 20-city average,⁸ prices peaked in May 2006 at about 50 percent above the level at which they had been at the beginning of 2003, but this average conceals substantial intercity variation. In Denver, there was a moderate increase in housing prices, followed by a small

decline. In Los Angeles and Phoenix, prices peaked at more than 100 percent above their 2003 value and declined thereafter by more than half. Thus a family living in Denver would be relatively unaffected by price changes, while a family living in Los Angeles or Phoenix might be affected depending on its purchase date, method of financing, and the family's overall economic situation. For example, a family that bought a house in 2003 and took on a mortgage that was reasonable in relation to family income could have sound finances today, even though the value of the home dropped below its 2006 peak. However, if a family bought at the top of the market with a small percentage down-payment and a balloon loan, that family would now find itself with substantial negative home equity and increased mortgage costs that it might not be able to afford.

The HRS asks respondents about the value of their houses, both in the core survey and the Internet study. These data have the advantages of being reports on the same house over time and being nationally representative. Other commonly used data sources are based on recent actual property sales (possibly including refinanced properties) or in the Case-Shiller index, confined to 20 large cities.

Over several waves of the HRS, the longitudinal rate of homeownership has remained constant at almost 90 percent. Table 6 shows mean and median house values, and mean and median housing debt, as reported by HRS respondents in 2006, 2008, and 2009, converted to 2010 dollars. Mean house values declined between 2006 and 2008 by about seven percent real per year, and the median declined by about four percent real over the same time period.⁹ Between 2008 and the HRS Internet survey, on average about nine months later, the decline was about nine percent real, and the decline in the median was about 11 percent real. These are, of course, very substantial reductions in the most important asset of most Americans. The mean

value of housing debt (mortgage balances plus other outstanding home loans) expressed in 2010 dollars dropped by about four percent per year between 2006 and 2008, and the median dropped by about 3 percent per year over the same period. Note that in nominal dollars the mean was almost constant between 2006 and 2008, and the median did not change, implying that at the population level there was almost no net pay-off of mortgage balances over that period.

However, in just the short period between the 2008 HRS core interview and the HRS Internet interview, the mean value of housing debt increased by about \$6,000 or 7.5 percent, while the median remained unchanged. The increase in the mean could be due to equity extraction, which may have made households more vulnerable to other economic shocks such as unemployment. When combined with the reduction in house prices, the debt-to-value ratio increased between 2008 and the Internet survey.

Table 6 here

Table 6 is calculated over all households that reported owning a home in all three surveys.¹⁰ It also includes some who did not fully report actual values for house prices and for their mortgages or other home loans; most of the non-reporters reported a bracket. Thus Table 7 excludes anyone with an imputed value because we want to report the fraction of households with negative housing equity: the imputation of a value even within a bracket could falsely classify some as having more mortgage than house value. A comparison of Table 7 with Table 6 shows that excluding respondents with incomplete reports does not materially affect the conclusions we make about the trends in home value and housing debt on average.¹¹ The table shows that in 2006 and 2008, about 1.1–1.4 percent of homeowners owed more than their house was worth.¹² Among homeowners with a mortgage, 1.8–2.4 percent had negative equity. But by 2009, 3.9 percent of all homeowners had negative equity and 6.7 percent of those with a

mortgage had negative equity.

Table 7 here

House price expectations. As reported in Table 2, an important reason for a reduction in spending was worries about the economic future. We assess one component of expectations about the economic future, house price expectations. Respondents were asked about expectations that their own home would appreciate in price, in the form of a subjective probability as follows:

On a scale from 0 percent to 100 percent where 0 means that you think there is no chance and 100 means that you think the event is absolutely sure to happen, what do you think are the chances that by next year at this time your home will be worth more than it is today?

In follow-up questions, respondents were asked about additional price targets, such as an increase in value of 10 or 20 percent or a decrease in value of 10 or 20 percent. Respondents were also asked the same question with a time horizon of five years.

Table 8 shows the average of those subjective probabilities. The average subjective probability that respondents expected their houses to be worth more in a year than they were at the interview date was just 32 percent. This indicates that individuals were very pessimistic about the housing market, and these expectations were very much different from historical trends. For instance, housing price data show that in 88 percent of one-year intervals between 1991 and 2009, housing prices increased.¹³ Individuals are somewhat more optimistic over the five-year horizon: There, the average subjective probability is about 54 percent. But the discrepancy with the historical record is even greater, as in every five-year interval between 1991 and 2009, U.S. actual housing prices increased.¹⁴ Most likely, such pessimistic expectations are a partial explanation for the decline in spending reported in Tables 1 and 4.

Table 8 here

Stock market expectations. Using the same format as for house price expectations, respondents were asked about the chances the stock market would be higher in a year. This question was asked in both HRS 2008 and in the HRS Internet survey, so we can make a direct comparison of the same people over time. Figure 4-1 shows the cumulative distribution of reported subjective probabilities of a gain. The distribution for 2009 is shifted to the left of the 2008 distribution, showing a reduction in the average expectation of a gain. Indeed the average subjective probability declined from 52 percent probability in 2008, to 41 percent probability in the HRS Internet survey. The decline was particularly striking at the lower part of the distribution: at the 25th percentile, the subjective probability was 40 percent in 2008, but it was just 20 percent in 2009. As with housing prices, such pessimistic expectations may explain some of the spending decline.

Figure 1 here

Subjective bequest probabilities. Using the same format, the HRS asked respondents about the probability they would leave a bequest greater than \$10,000. If this reported probability was positive, the question was repeated with a target of \$100,000 and then with a target of \$500,000. In cross-section, these subjective bequest probabilities varied positively with wealth, which increases our confidence that they are predictive of actual bequests. We expect some of the losses of assets between 2008 and 2009 would result in lower bequests as well as lower consumption. Table 9 shows the implied distribution of probability mass in the population in each of the wealth intervals. Averaging over all responses, the probability of a bequest less than \$10,000 was 16.2 percent and the probability of a bequest between \$10,000 and \$100,000 was 19.8 percent. It is clear that between 2008 and 2009, the probability mass shifted toward the lower wealth bands, reflecting wealth losses.

Table 9 here

We calculate expected bequests by multiplying the expected bequest within a wealth band by the probability of a bequest in that interval and then summing over all intervals. The expected bequest within an interval is calculated from the observed distribution of wealth in that interval in the 2008 HRS. The average wealth in the interval 0 to \$10,000 was \$1,831, and the expected contribution to bequests from that interval was \$296. Summing over all intervals, we find that expected bequests declined from \$542,364 in 2008 to \$441,571 in the HRS Internet survey. This reduction is entirely dominated by the top interval, which is a result of the highly skewed distribution of wealth.

Effects on retirement. The interval between the HRS 2008 interview and the 2009 Internet interview was too short to observe many actual retirements. But, over many waves, the HRS has asked workers about retirement expectations (in the form of the subjective probability of working past ages 62 and 65). We call these subjective probabilities P_{62} and P_{65} . Earlier work has shown that they are predictive of actual retirement (Hurd and Rohwedder, 2009), and that they have an advantage over data on actual retirement because changes in the subjective probabilities control for individual fixed effects such as unmeasured permanent taste differences. Such fixed effects are difficult to control for when using data on actual retirement. We expect that the financial crisis would have had two opposing effects on retirement. The declines in stock and possibly housing values should have delayed retirement because of the unexpected loss of wealth. Yet the worsening of the labor market and increased risk of unemployment should have led to earlier expected retirement, because the older population often has more difficulty finding a job. The net effect is an empirical matter.

Table 10 shows averages of P_{62} for the population of workers in HRS 2008 who were

respondents in the Internet interview.¹⁵ The average increased from 58.2 percent to 61.7 percent, a large increase over a short time period (a little more than a year for some respondents and less than six months for others). To put that change in perspective, the labor force participation rate of the older population has risen during the 1990s and particularly in the 2000s. In 2003 the rate among those 60-64 was 51 percent, and was 54.1 percent in 2008.¹⁶ The increase over five years was 3.1 percentage points, about the same as the increase in *P62* over six to 12 months. If future actual labor force participation is well-predicted by *P62*, these data suggest an acceleration of the trend toward deferred retirement.

Table 10 here

We note, however, that the stock market reached its low in March 2009—just a month before the HRS Internet survey was initially fielded. Since then, it has recouped some of its earlier losses, so possibly some of the negative effect of the stock market decline on wealth has dissipated. Also the unemployment rate today is slightly higher than during the Internet survey. But most importantly, any expectations among respondents at the time of the survey that the unemployment rate would recover quickly were not realized. Instead, the mood about the labor market is likely worse today than it was in May 2009.

The table shows *P62* both in HRS 2008 and 2009 according to work status in the 2009 Internet survey. There are 145 individuals who were working in 2008 and so were asked about *P62*, but who were not working at the time of the Internet survey. When they were working in 2008, their average *P62* was just 44.7 percent. That low value compared with *P62* among those who were still working in 2009 shows the power of *P62* to predict future labor force participation. But a striking comparison is between the change in *P62* across the two groups. Among those who continued to work, *P62* increased by five percentage points; among those who

stopped working, *P62* declined by 4.4 percentage points. This difference in the change may well reflect the differing effects of the stock and housing market losses and of the worsening of the labor market.

Table 11 offers similar statistics with respect to working past age 65. Qualitatively, we find the same patterns as for *P62*: an overall increase in *P65* driven by increases among those working in 2008 and 2009, which offsets declines among those not working in 2009. Yet the magnitude of the increase was remarkably larger for *P65*, a little over double the increase observed in *P62* (for an increase of 7.8 percentage points, from 38.6 to 46.4). Putting it in historical perspective, according to CPS statistics (see note 15), the labor force participation rate among those 65-69 was 23 percent in 1999. By 2008, it had risen to 30.7 percent—a change of 7.7 percent. Thus the increase in the predicted labor force participation rate in just nine months of the economic crisis was about the same magnitude as the actual increase over nine years. Even if respondents have revised their expectations about working past age 65 since May 2009 when the HRS Internet interview was fielded—possibly due to increases in the stock market and worsening of the labor market since then—it is unlikely that *P65* will have returned to its 2008 levels. That would suggest that the economic crisis will accelerate the trend of the past two decades of increased labor force participation among the older population. The stratification by work status in 2009 reveals another difference with *P62*: the levels of *P65* in 2008 were much more comparable (just a six percentage point difference for *P65* compared to a 16 percentage point difference in *P62*).

Table 11 here

Conclusion

The 2007-09 recession imposed substantial losses in stocks and housing on the older U.S. population, and these losses particularly affect the retirement security of those at or nearing retirement. While stock values have recovered somewhat since March 2009, house prices have not. For the majority of older households, housing is the most important asset. In May 2009, HRS respondents were pessimistic that house and stock prices would recover any time soon (in next year). Both actual losses and this pessimism led many households to reduce spending with a stronger effect on households age 50–64. Those age 65+ were less affected due to having more home equity and social security. With wealth positions substantially reduced, it may be that households will pass on less wealth to the next generation. According to respondents' subjective beliefs, this will be the case and the reductions may be sizeable (about 20 percent on average). The median older household will not see much change because the bequest effect is concentrated among households with high wealth. The economic downturn also appears to have accelerated the increase in deferred retirement seen over the past 20 years. This accelerated trend will relieve some of the financial pressures facing Social Security and Medicare programs, since both programs will benefit from additional tax revenues when people work longer.

In sum, the economic crisis has caused households in and near retirement to respond in several ways: they reduced spending, and saved more, and believed they will work longer. They also will pass on less to their children. Future work will assess whether these intentions come true.

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Table 1. Household spending 2011 compared to a year ago (%)

Age	Increased	About the same	Decreased
55-64	14.7	52.7	32.6
65-74	19.2	56.7	24.1
75+	23.9	59.3	16.8
<i>Total</i>	<i>17.1</i>	<i>54.5</i>	<i>28.5</i>

Source: Authors' calculations from weighted HRS data.

Table 2. Important reasons for spending decline by age: Percent stating very or somewhat important.

Age	Needed to reduce debt	Lower income	Worse employment	Stocks down	Lower house value	Worried about economic future
55-64	74.5	76.4	53.7	56.3	53.4	86.4
65-74	63.6	71.8	36.9	65.7	48.9	82.1
75+	46.5	59	14.2	64.6	42.2	80
<i>Total</i>	<i>69.9</i>	<i>74.1</i>	<i>47.2</i>	<i>59.2</i>	<i>51.6</i>	<i>84.9</i>

Source: Authors' calculations from weighted HRS data.

Table 3. Important reasons for spending increase by age: Percent stating very or somewhat important

Age	Wealth increased	Better employment	Higher mortgage payment	Increased spending needs	More optimistic
55-64	42.8	32.2	31.4	92.3	42.7
65-74	36.9	15.4	27.8	96.2	63.9
75+	20.8	7	11.6	96	51.6
<i>Total</i>	<i>37.4</i>	<i>23</i>	<i>27.2</i>	<i>94.2</i>	<i>51.1</i>

Source: Authors' calculations from weighted HRS data.

Table 4. Two-year change in real consumption: 2001-07 and 2007-09

	Percent change in means		Percent change in medians	
	2001-2007	2007-2009	2001-2007	2007-2009
<i>Age 50-64</i>				
Total consumption	-2.1	-9.9	-2.3	-7.5
Nondurable consumption	-1	-8.6	-0.6	-7.3
<i>Age 65+</i>				
Total consumption	-6.3	-9.1	-3.3	-5.9
Nondurable consumption	-4.9	-8.3	-3	-6.4

Source: Authors' calculations from weighted HRS data.

Table 5. Summary of two-year change in nondurable spending (%)

	Means		Medians	
	50-64	65+	50-64	65+
2001-07	-1	-4.9	-0.6	-3
2007-09	-8.6	-8.3	-7.3	-6.4
2007-09 change minus avg. of 2-year changes from 2001-07	-7.6	-3.4	-6.7	-3.4

Source: Authors' calculations from weighted HRS data.

Table 6. Home values and housing debt balances (\$000, 2010)

Year	Home value		Housing debt	
	Mean	Median	Mean	Median
2006	358.6	248.8	81.7	32.4
2008	309.9	227.9	74.8	30.4
2009	282.5	203.3	80.4	30.5

Notes: Only households who report owning a home in all three years are included and for whom there is no missing information on whether they have a mortgage and on whether they have other home loans. Housing debt includes the value of any mortgages and other home loans on the primary residence. Input values allowed on amount. Constant weights used for all statistics (2008 household weights) to ensure that variation in statistics across waves is not due to cross-wave variation in weights.

Source: Authors' calculations from weighted HRS data; N=2630.

Table 7. Home values, housing debt and negative home equity (\$000, 2010)

Year	Home value (\$)		Housing debt (\$)		Negative home equity (%)	
	Mean	Median	Mean	Median	All homeowners	Only households with housing debt*
2006	361.9	270.4	86.2	40	1.1	1.8
2008	320.1	243.1	77.7	32.4	1.4	2.4
2009	292.2	223.6	84.1	30.5	3.9	6.7

Notes: Same sample as in Table 4-6, but imposing the additional restriction that none of the amounts are imputed. N=2,106. Constant weights used for all statistics (2008 household weights) to ensure that variation in statistics across waves is not due to cross-wave variation in weights. *Number of households with housing debt varies across waves: 1,187 in 2006; 1,128 in 2008; 1,111 in 2009.

Source: Authors' calculations from weighted HRS data.

Table 8. House price expectations, one year and five years ahead

	1 year from now	5 years from now
Any increase	32.3	53.5
Increase by 10% or more	21.3	47
Increase by 20% or more	10.6	28
Decrease by 10% or more	18.5	13.7
Decrease by 20% or more	11	9.2
N	1,820	1,723

Source: Authors' calculations from weighted HRS data.

Table 9. Bequest probabilities and expected bequests (\$2010), weighted

Wealth band	Average bequest probability (%)		Average wealth (\$) in 2008	Expected bequests (\$)	
	2008	2009		using 2008 probabilities	using 2009 probabilities
0 to <\$10k	16.2	23.9	1,831	296	438
\$10k to <\$100k	19.8	20.2	52,792	10,448	10,684
\$100k to <\$500k	35.2	33.4	275,134	96,921	92,005
\$500k or more	28.8	22.4	1,508,899	434,699	338,445
<i>All</i>	<i>100</i>	<i>100</i>	<i>715,417</i>	<i>542,364</i>	<i>441,571</i>

Note: N=3,061.

Source: Authors' calculations from weighted HRS data.

Table 10. Average subjective probability (%) of working past age 62 among those working in 2008: age 51-61

	All	Work status in 2009	
		Working	Not working
HRS 2008	58.2	60.9	44.7
HRS 2009	61.7	65.9	40.3
Internet			
<i>N</i>	<i>1062</i>	<i>917</i>	<i>145</i>

Notes: Average for 'all' is not equal to the weighted average of 'working' and 'not working' when the weights are the sample sizes. The average for 'all' uses the HRS person weight adjusted for the Internet interview.

Source: Authors' calculations from weighted HRS data.

Table 11. Average subjective probability (%) of working past age 65 among those working in 2008: age 51-61

	All	Work status in 2009	
		Working	Not working
HRS 2008	38.6	39.6	33.4
HRS 2009 Internet	46.4	49.5	30.8
<i>N</i>	<i>1056</i>	<i>911</i>	<i>145</i>

Notes: Average for 'all' is not equal to the weighted average of 'working' and 'not working' when the weights are the sample sizes. The average for 'all' uses the HRS person weight adjusted for the Internet interview.

Source: Authors' calculations from weighted HRS data.

Endnotes

¹ Related studies in this volume include Butrica et al. (2012), Chai et al. (2012) and Coronado and Dynan (2012).

² The CAMS 2005 also included a sub-sample of the Early Baby Boomer cohort recruited into the HRS sample in 2004.

³ For example, some homeowners (as recorded in the HRS core) did not report a value in CAMS for 'rent'; we impute rents of \$0 for these cases. Resulting spending levels are close to totals from the Consumer Expenditure Survey (www.bls.gov/cex) for the age groups 55-74. The CEX collects the most detailed and comprehensive information on total spending by households. CAMS shows higher levels of spending than the CEX among those age 75 or over. There is no obvious reason that this difference should show in this age group, but not in the younger age group. However, we believe that the higher CAMS totals are more accurate than those in the CEX because they better match observed rates of wealth decumulation at older ages. When compared with after-tax income in the HRS, the lower levels of spending in CEX imply that single persons accumulate wealth, whereas in panel, they decumulate wealth (Hurd and Rohwedder, 2009).

⁴ Unit response rates in the first two HRS Internet Surveys (conditional on being invited to participate) were 70 percent.

⁵ We have rich background information from the HRS core survey for those who did not

participate in the HRS Internet Survey, and this information can be used to re-weight any results. The authors are grateful for funding from the U.S. Social Security Administration (SSA) via the Michigan Retirement Research Center (UM10-06). The opinions and conclusions expressed are solely those of the author(s) and do not represent the opinions or policy of SSA or any agency of the Federal Government. Research Center is gratefully acknowledged. All findings, interpretations, and conclusions of this paper represent the views of the authors and not those of the Wharton School or the Pension Research Council. © 2011 Pension Research Council of the Wharton School of the University of Pennsylvania. All rights reserved.

from the Internet Survey.

⁶ The changes in Table 4-4 are derived from the ratios of mean and median spending. The mean of household-level spending change is not a good indicator of population spending change because observation error causes bias in the ratio.

⁷ On average, the two-year changes in household size among the 50-64 year old households show a decline of 6 percent for the 2001-2007 period.

⁸ Accessed August 18, 2011 at <http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/us/?indexId=spusa-cashpidff--p-us---->

⁹ These price changes are not directly comparable with the Case-Shiller index which is confined to 20 large cities.

¹⁰ In defining the sample, we do not include imputed information on home ownership, nor whether the household has any mortgage or other home loans.

¹¹ Note that median housing debt shows a decline in Table 4-7 between 2006 and later years, which is not observed in Table 4-6. We place more weight on the evidence in Table 4-6 as it is based on a larger sample (Table 4-6 includes observations with incomplete reports for amounts which are imputed, while Table 4-7 excludes these observations).

¹² These percentages of homeowners with negative equity are more representative of the population than those obtained from sources such as lenders or property records which are either incomplete or outdated.

¹³ Calculated as the percentage of 12-month intervals over which the housing price index increased between January 1, 1991 to November 1, 2009; authors' computations of FHFA data at http://www.fhfa.gov/webfiles/21741/MonthlyIndex_Jan1991_to_Latest.xls (accessed August 18,

2011).

¹⁴ Calculated as the percentage of five-year intervals over which the housing price index increased from January 1, 1991 to November 1, 2009. See note 12.

¹⁵ In HRS 2008, *P62* was only asked of workers younger than age 62. In the Internet survey, the question was asked irrespective of labor force status, so we have responses from people who had stopped working between the two surveys as well as from those who were still working.

¹⁶ See <ftp://bls.gov/pub/special.requests/lf/aa2003/aat3.txt> and <ftp://bls.gov/pub/special.requests/lf/aa2008/aat3.txt> accessed August 18, 2011.