

**Saving Between Cohorts: The Role of Planning**

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Around the world, and particularly in the United States, employers have increasingly shifted from defined benefit (DB) to defined contribution (DC) pensions. In the latter, workers must select not only their contribution levels, but also the allocation of their retirement portfolios. To facilitate these decisions, employers and the government have worked to foster retirement savings and improve financial literacy via retirement seminars and other financial preparedness efforts. At the same time, the financial industry has worked to produce products and tools aimed at improving workers' capacity to undertake retirement planning. Whether these have had any impact on saving is the subject of this chapter.

We address the issue by comparing the saving behavior of two generations: the Early Baby Boomers (EBB), age 51-56 years old in 2004, and an earlier cohort (hereafter, the original HRS cohort), age 51-56 years old in 1992. By examining individuals of the same age but born in different years, we can assess how being exposed to different economic circumstances affects saving patterns.<sup>1</sup> We find that most EBB have accumulated more wealth than the previous generation, but most of this is attributable to appreciation in housing equity. By contrast, measures of non-housing wealth show little or no change between cohorts. There is also a sizeable group of Early Boomers who have less wealth than the HRS cohort; these families are disproportionately those with low educational attainment or minorities. For both cohorts, low wealth may be traced to lack of retirement planning, which translates into low saving rates. At the median, non-planners hold 20 percent less wealth than planners, but figures are much higher (closer to 45 percent) for households at lower levels of the wealth distribution.

This chapter proceeds by comparing personal and income characteristics between the earlier and later cohorts. Next we examine levels and composition of household wealth. We

show that many Early Boomers have not planned for retirement, despite the fact that wealth is higher for those who do.

## **Empirical Approach**

This chapter relies on data from the Health and Retirement Study (HRS), comparing the “Early Boomer” cohort where at least one household member was age 51-56 in 2004, and the “original HRS” cohort who were age 51-56 in 1992.<sup>ii</sup> By comparing cohorts of the same age but in different time periods (2004 versus 1992), we can assess how being born in a different time and having lived in different economic conditions affects financial behavior.<sup>iii</sup>

The Early Boomers are particularly important to study as they represent the leading edge of a large generation on the brink of retirement. To carry out the comparison between this cohort and its predecessor, we construct from the surveys variables that are comparable across years. Specifically, the measure of total net worth includes cash, checking, savings, mutual funds and brokerage accounts, bonds, stocks, IRAs, net housing equity, other real estate, net value of own businesses, cars and other vehicles minus debts.<sup>iv</sup> Total household income is the sum of labor and capital income, government transfer program income, and other income (gifts, lottery, etc.). All values are expressed in \$2004 and statistics are weighted.<sup>v</sup> Questions about wealth and income are asked to the most knowledgeable member in the HRS household regarding financial matters; this individual is termed the financial respondent hereafter.

Comparing the demographic composition of the two cohorts, many have noted that Early Boomers have greater educational attainment than the HRS cohort; not only are they more likely to have a college degree or more than college education, but also they are less likely to be high-school drop-outs. Boomers are also less likely to be married and more likely to have experienced

a family break-up, so the fraction of families with children decreased over the time period. (c.f. Iams et al., this volume; Manchester et al., this volume; Wolfe et al., this volume). The proportion of Hispanic households rose from 1992 to 2004 while the proportion of Whites declined.<sup>vi</sup> Because wealth varies substantially across demographic groups and it is strongly affected by education, marital status, and race, it is important to keep these changes into account when examining household wealth holdings (see also Appendix Table 1).

Of key interest is a comparison of the distribution of total household income between the EBB and the HRS cohort (Table 1). Both mean and median income for Early Boomers was higher than for the original HRS respondents; to the extent that more household income is a proxy for higher permanent income, we would expect EBB wealth to have increased as well. Note, however, that below-median Boomer households had less income than their counterparts in the HRS cohort, perhaps as a result of the stagnation in wages for workers without a college degree during the 1990s (Autor et al. 2006; Autor and Katz 1999). The households at the bottom of the income distribution are also disproportionately those with low education, unmarried, and Blacks and Hispanics, it might be anticipated that those groups would face increasing difficulty accumulating wealth over time.

*Table 1 here*

The distribution of total net worth and nonhousing wealth is displayed in Table 2. For both groups, the distribution of total net worth is very disperse: that is, there are large differences in wealth even within this narrow age band. Also, for both the mean and upper quartiles, Boomers have indeed accumulated more wealth than their earlier counterparts, and the differences are statistically significant. On the other hand, it would appear that Boomers in the lower quartile of the wealth distribution accumulated less wealth than the earlier cohort

(differences are not statistically significant). Lowest quartile households are also more likely to be in debt, for the more recent group.

*Tables 2 here*

One big difference for the EBBs is that they experienced a large run-up in housing prices, particularly during 2002 and 2003. Consequently Panel B in Table 2 explores the possibility that improvements in EBB wealth could be the result of the appreciation in home equity. In fact, we see that most households hold little beside housing wealth, for both generations. Also when we subtract housing equity from total net worth, we confirm that EBB respondents at the bottom of the wealth distribution and all the way up to the median hold lower non-housing wealth than the precursor generation. As a result, much of the rise in EBB wealth can be attributed to housing equity and the result is statistically significant. There are no significant differences in mean non-housing wealth between cohorts.

The distribution of total net worth in the population hides some important differences across demographic groups highlighted in Table 3. Here the least educated Boomers, along with Blacks, are found to have much less wealth than the original HRS cohort. Only EEB households with a college degree (or higher degrees) have higher wealth than HRS cohort with the same educational attainment. Thus there are many differences in the pattern of wealth, even after controlling for both age and economic status. Below we show how low wealth can be traced to lack of retirement planning.

*Table 3 here*

We turn now to a comparison of the composition of wealth between these two generations, illustrated in Table 4 and Figure 1. This is important in view of the large changes in both the stock and housing market during the 1990s, which could have influenced the wealth of

EBB. Clearly one of the most important assets held by both generations is their housing. Not only did home-ownership increase slightly between the two generations (differences are significant at the 10 percent level of significance), but also home equity accounts for one-third of total net worth among the EBB. The amount of wealth accounted for by total real estate is close to 50 percent for EBB, while it was 44 percent for the HRS cohort. Thus, exposure to the housing market has increased for the EBB compared to the HRS cohort.

*Table 4 and Figure 1 here*

Two other important assets in the portfolios of both EBB and the HRS cohort are stocks and IRAs or Keoghs. Figure 2 shows that ownership of these assets increases slightly between the two cohorts (but the differences are not statistically significant). Most households do not hold large amounts of wealth in stocks and IRAs; the share of wealth accounted for by stocks is 13 percent among EBB and 8 percent among the HRS cohort. The share of IRAs or Keoghs is similar but slightly lower in both years. On the assumption that all IRAs were invested in the stock market, more than 23 percent of EBB's wealth would be held in stocks; using similar measures, a lower portion of the HRS cohort's wealth, 15.6 percent, could have been invested in the stock market. In other words, not only are Early Boomers more concentrated in housing, but also exposure to the stock market has increased compared to the HRS.<sup>vii</sup>

*Figure 2 here*

In both cohorts, then, a large percentage of households in the lower deciles of the wealth distribution own a home, but stock ownership is high only near the top of the wealth distribution. What this means is that home prices can play a major role in explaining changes in the distribution of wealth between generations. For instance, Lusardi and Mitchell (2006b) show that, if home prices by region in 2004 returned to their 2002 levels, which would entail a cut of

of about 13 percent on average, Boomers would lose approximately 9 percent of total wealth. A similar percentage change in stock prices would have a much smaller impact on Boomer wealth, of only 2 percent (Gustman and Steinmeier, 2002). In other words, while Boomers benefited from a remarkable increase in home prices lifting their wealth with respect to the previous generation, they remain vulnerable to housing fluctuations.<sup>viii</sup>

### **Explaining Differences in Wealth Holdings: The Role of Planning**

Thus far, we have shown substantial wealth dispersion for both Early Boomers and their HRS precursors, and these wealth patterns persist even for specific demographic groups. Next we ask whether initiatives seeking to foster savings – such as retirement seminars – seem to have any impact on household saving patterns. This question was broached by Lusardi (1999) who pointed out that many households do not plan for retirement, even when they are only a few years from this momentous event. Other studies have confirmed her findings (c.f. Yakoboski and Dikemper, 1997; Ameriks et al. 2003). And furthermore, Lusardi (1999, 2002, 2003) has demonstrated that *planning* is a powerful determinant of wealth. Specifically, those who report that they do not plan, arrive at retirement with much lower amounts of wealth than those who do.

These issues can be addressed using responses to questions posed in the HRS about retirement planning,<sup>ix</sup> comparing self-reported planning efforts across cohorts. We can then link these answers to household wealth. Table 5 reports the extent to which people in the two cohorts indicate they have planned for retirement, and the associated levels of wealth they have. We see, first, the proportion of non-planners (those who have thought about retirement “hardly at all”) fell among Early Boomers, as compared to the original HRS, and this change is statistically significant. Nonetheless, a large fraction of EBB (28 percent) still has not given much thought to

retirement, even respondents are rapidly nearing this life change. Second, we note that planning appears to be strongly and positively correlated with wealth holdings: that is, those who plan accumulate much larger amounts of wealth than non-planners. Overall planners have accumulated up to 7 times the amount of wealth of non-planners. The median planner holds double the amount of wealth than the non-planner, and differences are even larger at the first quartile of the wealth distribution. Evidently for many, lack of planning is tantamount to lack of saving. Note, however, that there is not much difference in mean net worth between planning categories. This is because there are several extremely wealthy households who have not given any thought to retirement. Later we examine the impact of these households on estimates of the effect of planning. Finally, the planning effect appears strikingly similar, if we compare the two cohorts. In other words, the relationship between planning and wealth does not seem to have been much influenced by changes in home prices, changes in stock prices, or increases in financial education during the 1990s.

*Table 5 here*

Which households are more likely to be planners? Figure 3 reports the proportion of planner types across education, sex, race, and cohort. The large majority of those with less than a high school education are non-planners. This is the case not only in the HRS cohort, but also among EBB. The proportion of non-planners decreases at higher education levels, but the share of non-planners across education groups is very similar between the two cohorts. This means that planning is strongly linked to more education, although there is also a sizeable fraction of non-planners among those with college and higher degrees. Since educational attainment has increased during the 1990s, this may explain why the fraction of non-planners has decreased in the same time period. Similarly, while financial education programs have been undertaken



during the 1990s, many low income and minority workers were not exposed to such programs (Lusardi 2004). This may explain why lack of planning tends to persist among these groups over time.

*Figure 3 here*

The Figure also confirms that planning is also strongly correlated with race/ethnicity: non-planners are disproportionately concentrated among Blacks and Hispanics. But it is encouraging to see that the proportion of non-planners among Blacks and Hispanics falls for the later cohort. There are also differences in planning between women and men; women are more likely to be non-planners in both years. Lusardi and Mitchell (2006a,b) further show that planning is strongly correlated with financial literacy; those who can do simple calculations and understand the working of inflation, interest compounding, and risk diversification, are also more likely to plan.

Do the large differences in wealth across planning type persist when we account for demographic characteristics and income? Has the effect of planning changed over time? To address these questions, we next turn to a multivariate analysis of the effects of planning on wealth.<sup>x</sup> We perform regressions for each cohort and in the pooled sample, where we combine the data between years.<sup>xi</sup> The analysis is structured as follows: we first construct a simple indicator variable indicating “lack of planning” (called *No planning*), which takes the value 1 when households report they have given “hardly any thought” to retirement. The models also control for other determinants of wealth including age (and age squared), number of children, marital status, education, sex, race/ethnicity, and whether the financial respondent is partially or fully retired. In addition, we include total household income.<sup>xii</sup> Together with race and education, income serves as a proxy for permanent income, i.e., lifetime income. Because the distribution of

wealth is skewed to the right, we perform quartile regressions rather than Ordinary Least Square (OLS) regressions.

Empirical estimates appear in Table 6, where the coefficient on lack of planning is always negative and statistically significant – for each of the three wealth quartiles and in the pooled sample. Estimates are not only sizeable but also very similar between cohorts (in the pooled sample, the interaction term between no planning and the 2004 year dummy is mostly not statistically significant). Evidently, lack of planning sharply reduces wealth, even after accounting for demographic characteristics and income. Looking at medians, non-planners accumulate from \$17,000 to \$20,000 less wealth than those who do some (a little/a lot) planning, about 20 percent less wealth. Our findings are therefore consistent with previous studies which also show that lack of planning has an effect on wealth (Lusardi, 1999, 2003; Ameriks et al. 2003). They are also consistent with other analysis of the 2004 HRS using different measures of planning (Lusardi and Mitchell, 2006a).

*Table 6 here*

Other variables in Table 6 also have signs consistent with expectations. For example, education and wealth are positively associated, and in particular, in 2004, wealth is concentrated among those with college or higher degrees. Blacks and Hispanics accumulate less wealth than Whites, but the effect is particularly pronounced among Blacks. Family break-ups such as divorce and separation are also detrimental to wealth accumulation. The effect of divorce in both the median and third quartile estimates is much larger among the EBB than the previous generation. Having more children also leads to lower wealth holdings.

We also examine a different measure of wealth in Table 7, namely total non-housing wealth.<sup>xiii</sup> Lack of planning continues to be statistically significant and negative both across years

and in the pooled sample. In other words, planning affects other components of wealth beyond housing equity. This result is to be expected, as the effect of planning is similar between cohorts while housing equity increased substantially before 2004.

*Table 7 here*

### **Interpreting the Effect of Planning**

The previous estimates show that the effect of planning on wealth is sizeable. How do we interpret the effect of lack of planning on wealth? To better understand this effect, Table 8 reports median and OLS estimates of lack of planning on net worth. For brevity, only pooled sample results are reported and only for the key variables of interest. It is very interesting that the OLS estimates of lack of planning are barely significant, indicating that the choice of estimation technique is critical to assess the effect of planning and, most importantly, that at high levels of wealth, planning may cease to matter.

*Table 8 here*

To understand this finding further, Figure 4 provides a graphic of the prevalence of non-planning by wealth percentile; the figure reports both the point estimates and 95 percent confidence intervals. Note that, up to the 80<sup>th</sup> percentile of the wealth distribution, estimates are negative; that is, lack of planning leads to lower wealth ; and the confidence intervals are narrow enough to make the estimates statistically significant. The downside range of outcomes becomes more negative as we move to higher values of wealth: for households in the HRS cohort in the third decile of wealth, lack of planning is associated with a 30 percent reduction in wealth, while lack of planning in the sixth decile is associated with 13 percent lower wealth. Estimates are even stronger for the EBB: lack of planning in the third decile is linked to 45 percent less wealth

holdings, while lack of planning in the sixth decile is linked to 25 percent less wealth. The effect of lack of planning reverses as we move close to the top of the wealth distribution. Among EBB, as we move past the third quartile of wealth, the effect of lack of planning first becomes insignificant and then positive rather than negative. The same is true for the HRS cohort, even though the effect happens at higher percentiles of the wealth distribution.<sup>xiv</sup>

*Figure 4 here*

Our next goal is to illustrate that planning actually has an identifiable influence on wealth. In other words, we seek to go beyond correlation to directional causation: if someone were to begin planning tomorrow, would he end up with larger net worth because of it? The difficulty is that planning is potentially endogenous, in which case wealth could also influence planning through reverse causality. One reason reverse causality is a concern is that wealthy individuals may plan more because they have more to gain from planning, driving the significance of the coefficient in the OLS and quantile regressions. There may also be a positive link between planning on wealth due to some unobserved factor such as discipline, impatience, or cognitive ability, which is responsible for the observed correlation between planning and wealth.<sup>xv</sup>

For all of these reasons, we require a different estimation technique to test for the causal relationship of interest. One way to account for reverse causality is to use an instrumental variable technique, which poses instruments for planning (Lusardi 2003; Ameriks et al. 2003). By contrast, here we develop a test to examine directly whether reverse causality exists, by instrumenting wealth. The instrument must first provide an exogenous change in wealth, one outside the control of the individual and uncorrelated with his or her preferences. If this exogenous change in wealth is uncorrelated with planning after accounting for all controls, then

it allows us to test for reverse causality. Specifically, we run a regression where the dependent variable is lack of planning, and regressors include net worth and all of the demographic variables considered before, including income. Our estimates (Table 9) indicate only mild evidence of reverse causality: specifically, the effect of wealth is negative – suggesting that higher wealth tends to increase planning – but the estimates are not always statistically significant (in 2004 they are only significant at the 10 percent level). Most importantly, the estimates are economically small in the separate and the pooled samples; an increase in wealth of \$10,000 decreases the probability of not planning .4-.5 percentage points. Given that wealth estimates may be affected by influential observations, we also used a cubic transformation of wealth, but results are similar.<sup>xvi</sup>

*Table 9 here*

We next undertake IV estimation, recognizing that net worth is clearly an endogenous variable. The instrument which we argue influences net worth but is unrelated to planning is the recent regional change in house prices, a measure that should be strongly correlated with wealth because housing is a large component of total net worth for both cohorts. We exploit variation by region and not at the individual level, so these price changes are not likely to be correlated with the individual propensity to plan except through the channel of net worth. As mentioned before, the EBB enjoyed a sharp increase in home prices both before and during 2004. However, there is wide variation in home prices across regions in the US. For example, while the Pacific region experienced an increase of 10.3 percent in 2003, the southeast region experienced an increase of 3.6 percent in 2003. The HRS cohort had the opposite experience; during 1990 and 1991 the housing market experienced a bust, which was particularly pronounced in specific regions of the United States, such as New England. We use the change in home prices in the previous year (i.e.,

the changes between 2004 and 2003 for EBB and the change between 1992 and 1991 for the HRS cohort) across regions as an instrument for wealth.<sup>xvii</sup>

*Table 10 here*

As the first-stage regressions reported in Table 10 show, changes in regional prices are strong predictors of wealth. In particular, a one percent increase in home prices increases wealth by more than \$16,000 among EBB, while a one percent decrease in prices during the early 1990s increased wealth by close to \$5,000, perhaps a result of the fact that home prices had decreased sharply before that period and, consequently, had already depressed the value of wealth.<sup>xviii</sup> In the pooled sample, the increase in wealth following a change in home prices is also positive. The IV estimates reported in Table 11 show that the effect of wealth-instrumented by changes in home prices- on lack of planning is either not statistically significant or positive. In addition, in both 1992 and 2004, the positive IV estimates are significantly different than the negative OLS point estimates; for both cohorts, exogenous increases in wealth tend to *reduce* the propensity to plan.<sup>xix</sup> What this suggests is that lack of planning is positively influenced by wealth, so the OLS estimates are biased and represent an underestimate of the effect of planning, compatible with what Lusardi (2003) finds. The IV estimates of lack of planning on wealth are much larger than the OLS estimates, a result also consistent with Ameriks et al. (2003) who use a different dataset and use propensity to plan for a vacation and mathematical abilities as instruments for planning.

*Table 11 here*

To summarize: Planning is an important determinant of wealth and an important reason for why many families arrive close to retirement with little or no wealth. Both the quantile estimates and the IV exercise show that planning has a powerful effect on wealth. The IV estimation shows that reverse causality is not driving the significant relationship between wealth

and lack of planning. In fact, reverse causality tends to result in an under-estimation of the effect of planning. Thus, the effect of planning is even stronger than the OLS and quantile estimates report. Moreover and most importantly, the effect of planning has remained unchanged between years. Thus, while the increase in home prices has lifted the wealth of many EBB, lack of planning has the same effect between cohorts: it sharply reduces wealth.

### **Discussion and Conclusion**

As the Early Baby Boomers stand on the verge of retirement, along many dimensions they appear better prepared than their precursor counterparts; for instance, many EBBs have accumulated larger amounts of wealth in 2004. Yet this is not the case for all cohort members, since Blacks and the least educated accumulated less wealth than the previous generation. Moreover, a larger proportion of Boomer wealth is exposed to fluctuations in asset prices, particularly housing prices; accordingly a fall in housing values could undermine their retirement preparedness.

It is interesting that many Boomers have still not devoted much thought to their retirement prospects, even retirement is only a few years away. Close to 30 percent of respondents gave no thought to retirement, which leads to little saving. The effect of planning is found to be strong and positively associated with retirement wealth, and the impact is remarkably stable across cohorts. Thus, non-planners have not been much affected by the changes in the economy between 1992 and 2004, including the financial education initiatives undertaken during the 1990s. One reason is that they have not devoted much energy to retirement planning, even though planning is a crucial determinant of household wealth. Specifically, those who fail to plan have accumulated much less wealth than those who did some planning, and this finding is

strikingly similar across cohorts. Non-planners are disproportionately those with low education, low income, and Blacks/Hispanics. These households were largely unaffected by financial education programs instituted during the 1990s. In general, policies which stimulate saving might be best targeted to those groups least likely to plan.

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**Table 1. Distribution of Total Household Income for Original HRS (1992) and Early Boomer (2004) Respondents**

<u>Percentile</u>	<u>Original HRS</u>	<u>Early Boomers</u>
5 <sup>th</sup>	9,129	6,984
10 <sup>th</sup>	15,484	12,000
25 <sup>th</sup>	31,957	30,000
<b>50<sup>th</sup></b>	<b>59,242</b>	<b>62,000</b>
75 <sup>th</sup>	93,272	100,480
90 <sup>th</sup>	137,737	175,000
95 <sup>th</sup>	175,032	238,000
<b>Mean</b>	<b>73,592</b>	<b>85,931</b>
SD	76,610	109,144
N	4,577	2,631

Note: Respondents/spouses age 51-56; all figures weighted using household weights. (2004 \$)  
Source: Authors' calculations.

**Table 2. Comparing Wealth Distributions for Original HRS (1992) and Early Boomer (2004) Respondents**

**A. Total Net Worth**

<i>Percentile</i>	<b>Original HRS (\$)</b>	<b>EBB (\$)</b>
5 <sup>th</sup>	0	-3,500
10 <sup>th</sup>	1,346	200
25 <sup>th</sup>	40,769	36,500
<b>50<sup>th</sup></b>	<b>136,256</b>	<b>153,200</b>
75 <sup>th</sup>	315,058	403,000
90 <sup>th</sup>	700,128	891,700
95 <sup>th</sup>	1,218,493	1,332,000
<b>Mean</b>	<b>327,715</b>	<b>391,959</b>
SD	738,164	969,128
N	4,577	2,631

**B. Total Non-Housing Net Worth**

<i>Percentile</i>	<b>Original HRS (\$)</b>	<b>EBB (\$)</b>
5 <sup>th</sup>	-1481	-7,800
10 <sup>th</sup>	0	0
25 <sup>th</sup>	9,425	8,090
<b>50<sup>th</sup></b>	<b>54,799</b>	<b>53,000</b>
75 <sup>th</sup>	188,496	224,400
90 <sup>th</sup>	527,789	609,000
95 <sup>th</sup>	962,676	1,000,870
<b>Mean</b>	<b>239,145</b>	<b>264,526</b>
SD	687,774	849,317
N	4,577	2,631

Note: Respondents/spouses age 51-56; all figures weighted using household weights. (2004 \$)  
 Source: Authors' calculations.

**Table 3. Distribution of Total Net Worth By Demographic Factors for Original HRS (1992) and Early Boomer (2004) Respondents**

	<b>Original HRS (1992) Cohort</b>			<b>Early Baby Boomer (2004) Cohort</b>		
	<u>25<sup>th</sup> %</u>	<u>Median</u>	<u>75<sup>th</sup> %</u>	<u>25<sup>th</sup> %</u>	<u>Median</u>	<u>75<sup>th</sup> %</u>
<b>Education</b>						
< HS	1,346	<b>41,065</b>	118,214	200	<b>22,500</b>	80,000
HS Grad	39,719	<b>121,176</b>	256,489	15,500	<b>92,035</b>	243,000
Some Coll.	67,051	<b>166,954</b>	352,084	36,500	<b>133,000</b>	326,000
Coll. Grad	117,137	<b>257,163</b>	556,467	140,000	<b>302,000</b>	690,000
> College	149,451	<b>291,361</b>	706,860	171,000	<b>365,800</b>	847,500
<b>Race/Ethnicity</b>						
White	60,588	<b>166,550</b>	368,241	64,000	<b>199,000</b>	464,000
Black	337	<b>36,487</b>	115,117	3	<b>25,000</b>	118,500
Hispanic	2,693	<b>46,047</b>	126,562	5,000	<b>55,800</b>	200,000
<b>Marital Status</b>						
Married	72,840	<b>173,686</b>	376,319	85,300	<b>223,000</b>	498,000
Not Married	2,558	<b>51,836</b>	172,339	3,000	<b>53,500</b>	200,000
<b>Sex</b>						
Male	58,568	<b>166,954</b>	368,943	55,960	<b>196,000</b>	490,000
Female	20,869	<b>102,326</b>	250,431	19,800	<b>104,600</b>	297,500

Note: Respondents/spouses age 51-56; all figures weighted using household weights. (2004 \$)  
 Number of observations is 4,577 for the 1992 HRS cohort and 2,631 for the 2004 EBB. Source:  
 Authors' calculations.

**Table 4. Asset Ownership and Percentage of Wealth Accounted for by Each Asset for Original HRS (1992) and Early Boomer (2004) Respondents**

	<u>Checking Account</u>	<u>Stock Owner</u>	<u>IRA Owner</u>	<u>Home Owner</u>	<u>Real Estate</u>	<u>Business Owner</u>
<b>Owns That Asset (%)</b>						
Orig.HRS	82.8	30.6	40.6	78.6	24.8	19.0
EBB	86.9	31.0	41.6	80.3	17.5	14.8
<i>t-stat of diff</i>	<i>4.79</i>	<i>0.42</i>	<i>0.90</i>	<i>1.73</i>	<i>-7.52</i>	<i>-4.70</i>
(p value)	(0.00)	(0.67)	(0.37)	(0.08)	(0.00)	(0.00)
<b>Proportion of Total Net Worth (%)</b>						
Orig. HRS	5.6	8.3	7.5	27.0	16.8	16.7
EBB	5.1	12.6	10.6	32.5	14.1	10.3

Note: The top panel indicates the probability of ownership of each asset in the 1992 HRS cohort (N=4,577) and the EBB (N=2,631). The bottom panel reports the proportion of total net worth accounted for by the assets listed in the first row. All figures are weighted using household weights. Source: Authors' calculations.



**Table 5. Planning and Total Net Worth for Original HRS (1992) and Early Boomer (2004) Respondents (2004 \$)**

<i>Group</i>	Sample %	25 <sup>th</sup> Percentile(\$)	Median (\$)	75 <sup>th</sup> Percentile(\$)	Mean (\$)
<b>A. Original HRS Response to Planning Question</b>					
Hardly at All	32.0	10,098	<b>76,906</b>	200,613	224,311
A Little	14.3	37,699	<b>126,562</b>	290,149	343,145
Some	24.8	72,032	<b>173,753</b>	367,298	340,681
A Lot	28.9	71,393	<b>173,686</b>	356,796	353,523
<b>B. EBB Respondents Response to Planning Question</b>					
Hardly at All	27.5	9,100	<b>80,000</b>	271,000	315,644
A Little	17.0	63,500	<b>173,400</b>	392,000	364,464
Some	27.9	53,000	<b>189,000</b>	447,200	366,074
A Lot	27.6	54,000	<b>201,700</b>	470,900	513,211

Note: Percentages of respondent in each planning group are conditional on being asked the planning question. Respondents/spouses age 51-56; all figures weighted using household weights. (2004 \$) Source: Authors' calculations.

**Table 6. Quantile Regressions of Net Worth on Planning for Original HRS (1992) and Early Boomer (2004) Respondents**

**A. Two Cohorts Treated Separately**

	25 <sup>th</sup> % <u>Orig. HRS</u>	25 <sup>th</sup> % <u>EBB</u>	Median <u>Orig. HRS</u>	Median <u>EBB</u>	75 <sup>th</sup> % <u>Orig. HRS</u>	75 <sup>th</sup> % <u>EBB</u>
No Planning	-12.495 (3.563)***	-14.390 (4.022)***	-17.233 (4.391)***	-20.025 (8.818)**	-42.059 (7.450)***	-47.362 (21.751)**
High School Graduate	13.241 (4.297)***	-5.132 (6.220)	21.493 (5.151)***	2.733 (13.753)	31.133 (8.563)***	9.228 (31.611)
Some College	19.963 (5.101)***	-4.127 (6.403)	38.655 (6.150)***	20.278 (14.134)	73.552 (10.406)***	44.360 (32.831)
College Graduate	46.990 (6.344)***	51.527 (7.382)***	83.054 (7.691)***	113.995 (16.195)***	188.936 (13.229)***	237.035 (38.294)***
More than College	70.954 (6.847)***	62.327 (7.966)***	121.807 (8.318)***	169.988 (17.136)***	252.906 (14.153)***	441.711 (40.818)***
Hispanic	-10.389 (5.125)**	-13.237 (6.040)**	-13.289 (6.290)**	-18.879 (13.226)	-25.028 (10.651)**	-45.239 (30.783)
Black	-23.053 (4.058)***	-22.463 (4.656)***	-33.550 (4.875)***	-33.360 (10.032)***	-74.087 (8.062)***	-71.828 (24.231)***
Divorced	-31.876 (4.821)***	-28.229 (4.727)***	-41.669 (5.820)***	-53.389 (10.372)***	-47.224 (9.912)***	-91.769 (25.910)***
Separated	-19.096 (8.528)**	-28.862 (9.091)***	-31.846 (9.942)***	-43.898 (18.951)**	-7.757 (16.231)	-80.357 (44.329)*
Widowed	-13.250 (6.799)*	-18.524 (8.414)**	-25.976 (8.313)***	-21.952 (18.043)	10.445 (14.764)	57.775 (48.528)
Never Married	-33.322 (8.055)***	-26.127 (7.075)***	-44.268 (9.714)***	-52.984 (15.418)***	-41.714 (16.204)**	-105.520 (39.251)***
Female	1.985 (3.384)	-9.671 (3.748)***	12.805 (4.171)***	-10.073 (8.174)	23.687 (7.184)***	-13.595 (19.895)
Log of Income	31.160 (1.891)***	30.540 (1.449)***	45.063 (2.577)***	46.719 (3.854)***	61.048 (5.283)***	61.415 (13.278)***
Adjusted R-Squared	0.12	0.11	0.15	0.15	0.17	0.17

## B. Pooled Sample

	<u>25<sup>th</sup> %</u>	<u>Median</u>	<u>75<sup>th</sup> %</u>
No Planning	-11.034 (3.168)***	-11.334 (5.959)*	-30.007 (10.772)***
Year 2004	3.006 (2.836)	13.864 (5.358)***	37.596 (9.680)***
No Plan*Year 2004	-2.689 (5.108)	-16.019 (9.578)*	-20.723 (16.943)
High School Graduate	3.737 (3.722)	10.749 (7.082)	23.326 (11.644)**
Some College	4.879 (4.171)	23.152 (7.903)***	58.355 (13.313)***
College Graduate	50.173 (5.072)***	104.611 (9.543)***	240.050 (16.590)***
More than College	66.139 (5.588)***	144.543 (10.270)***	384.486 (17.962)***
Hispanic	-10.526 (4.320)**	-16.305 (7.975)**	-40.647 (13.421)***
Black	-24.279 (3.475)***	-36.609 (6.397)***	-76.166 (11.062)***
Divorced	-29.716 (3.791)***	-46.909 (6.954)***	-78.468 (12.459)***
Separated	-21.814 (6.858)***	-33.786 (12.223)***	-56.986 (19.582)***
Widowed	-14.713 (5.918)**	-16.569 (10.908)	20.426 (20.844)
Never Married	-27.867 (5.943)***	-48.068 (11.058)***	-85.901 (19.394)***
Female	-4.104 (2.860)	-3.584 (5.256)	5.403 (9.225)
Log of Income	31.750 (1.245)***	45.898 (2.779)***	56.276 (6.740)***
<u>Adj. R-Squared</u>	<u>0.11</u>	<u>0.15</u>	<u>0.17</u>

*Note:* This table reports quantile regressions of total net worth on planning and other determinants of wealth. Net worth is divided by 1,000 and all monetary values are reported in \$2004. Regressions include dummies for retirement status (fully and partially retired), number of children, age and age squared. The total number of observations is 3,727 in 1992 and 2,156 in 2004. Business owners and the top and bottom 1% of the wealth distribution are excluded. Standard errors in parentheses. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%. Source: Authors' calculations.

**Table 7. Median Regression of Non-Housing Wealth on Planning for Original HRS (1992) and Early Boomer (2004) Respondents**

	<u>Orig. HRS</u>	<u>EBB</u>	<u>Pooled Sample</u>
No Planning	-9.904 (3.046)***	-9.709 (3.809)**	-4.320 (2.437)*
Year 2004			9.903 (2.197)***
No Plan*Year 2004			-7.546 (3.912)*
<u>Adj. R- Squared</u>	0.10	0.09	0.13

*Note:* This table reports median regressions of non-housing net worth on planning and other determinants of wealth. Non-housing wealth is divided by 1,000; all monetary values in \$2004. Regressions include all the same explanatory variables as in Table 6. The total number of observations is 3,727 in 1992 and 2,156 in 2004. Business owners and the top and bottom 1% of the wealth distribution are excluded. Standard errors in parentheses. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%. Source: Authors' calculations.

**Table 8. OLS and Median Regressions of Net Worth on Planning in Pooled Sample (2004 \$)**

	<u>OLS</u>	<u>Median</u>
No Planning	-5.054 (16.362)	-11.334 (5.959)*
Year 2004	61.832 (11.080)***	13.864 (5.358)***
No Plan*Year 2004	-29.273 (20.472)	-16.019 (9.578)*

**Adjusted R-Squared**      **0.20**                                      **0.15**

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*Note:* This table reports OLS and median regressions of total net worth on planning and other determinants of wealth in the pooled sample. Net worth is divided by 1,000 and monetary values reported in \$2004. Regressions include all the same explanatory variables as in Table 6. The total number of observations is 5,883. Business owners and the top and bottom 1% of the wealth distribution in each year are excluded. Standard errors in parentheses. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%. Source: Authors' calculations.

**Table 9. OLS Regression of Planning on Total Net Worth (2004 \$)**

	<u>Orig. HRS</u>	<u>EBB</u>	<u>Pooled Sample</u>
Net Worth	-.000054 (.000027)**	-.000045 (.000024)*	-.000043 (.000016)***
Year 2004			-0.016 (0.012)
High School Grad	-0.080 (0.020)***	-0.117 (0.036)***	-0.107 (0.019)***
Some College	-0.114 (0.024)***	-0.119 (0.036)***	-0.123 (0.020)***
College Grad	-0.117 (0.029)***	-0.167 (0.041)***	-0.158 (0.023)***
More than College	-0.103 (0.032)***	-0.134 (0.043)***	-0.127 (0.025)***
Hispanic	0.094 (0.026)***	0.023 (0.037)	0.058 (0.022)***
Black	0.036 (0.023)	0.022 (0.029)	0.027 (0.018)
Divorced	-0.010 (0.021)	0.051 (0.024)**	0.037 (0.015)**
Separated	0.070 (0.039)*	0.053 (0.051)	0.069 (0.031)**
Widowed	0.035 (0.031)	0.056 (0.043)	0.056 (0.025)**
Never Married	0.044 (0.036)	0.067 (0.039)*	0.064 (0.025)**
Female	0.087 (0.016)***	0.004 (0.020)	0.038 (0.012)***
Log of Income	-0.075 (0.010)***	-0.009 (0.010)	-0.026 (0.006)***
R-Squared	0.11	0.06	0.07

*Note:* This table reports OLS regressions of not planning on total net worth. Net worth is divided by 1,000 and all monetary values are in \$2004. Regressions include dummies for retirement status (fully and partially retired), number of children, age and age squared. The total number of observations is 3,727 in 1992, 2,156 in 2004 and 5,883 in the pooled sample. Business owners and the top and bottom 1% of the wealth distribution in each year are excluded. Standard errors in parentheses. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%. Source: Authors' calculations.

**Table 10. First Stage Regressions of IV Estimation of Total Net Worth on Housing Price Increases**

	<u>Orig. HRS</u>	<u>EBB</u>	<u>Pooled Sample</u>
Percentage Increase	-4.988 (2.121)**	16.757 (3.239)***	10.911 (1.885)***
Year 2004			1.023 (13.363)
High School Graduate	13.335 (12.481)	-10.745 (30.827)	-0.105 (14.806)
Some College	49.170 (14.651)***	1.236 (31.173)	14.734 (15.770)
College Graduate	96.897 (17.986)***	168.292 (35.201)***	150.764 (18.320)***
More than College	164.724 (19.304)***	242.018 (37.028)***	226.037 (19.454)***
Hispanic	-40.042 (16.332)**	-68.629 (31.973)**	-55.268 (17.069)***
Black	-75.006 (14.207)***	-84.326 (25.246)***	-81.589 (14.096)***
Divorced	-51.387 (13.185)***	-63.436 (21.029)***	-59.194 (12.149)***
Separated	-41.291 (23.928)*	-34.927 (45.006)	-32.472 (24.560)
Widowed	-24.493 (18.949)	124.459 (37.443)***	64.629 (20.031)***
Never Married	-60.063 (22.460)***	-64.316 (33.540)*	-61.223 (19.738)***
Female	29.290 (9.745)***	-39.638 (17.105)**	-14.117 (9.579)
Log of Income	83.800 (5.997)***	84.658 (8.322)***	86.004 (4.989)***
<u>R-Squared</u>	<u>0.19</u>	<u>0.22</u>	<u>0.21</u>

*Note:* This table reports OLS regressions of total net worth on the percentage increase in housing prices by region in the previous year. Net worth is divided by 1,000 and all monetary values are in \$2004. Regressions include dummies for retirement status (fully and partially retired), number of children, age and age squared. The total number of observations is 3,727 in 1992, 2,156 in 2004, and 5,883 in the pooled sample. Business owners and the top and bottom 1% of the wealth distribution in each year are excluded. Standard errors in parentheses. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%. Source: Authors' calculations.

**Table 11. Instrumental Variables (IV) Estimation of “Not Planning” on Net Worth**

	<u>Orig. HRS</u>	<u>EBB</u>	<u>Pooled Sample</u>
OLS	-.000054 (.000027)**	-.000045 (.000024)*	-.000043 (.000016)***
IV	.00287 (.00142)**	.000387 (.00024)	.000135 (.000225)
Hausman Test (P-Value)	13.283 (0.0003)***	2.951 (0.085)*	0.279 (0.597)

*Note:* This table reports IV regressions of not planning on total net worth. Net worth is divided by 1,000 and all monetary values are in \$2004. . Regressions include all the same explanatory variables as in Table 6. The total number of observations is 3,727 in 1992; 2,156 in 2004; and 5,883 in the pooled sample. Business owners and the top and bottom 1% of the wealth distribution in each year are excluded. Standard errors in parenthesis with p-value in parentheses for Hausman test. \* Significant at 10% \*\* Significant at 5% \*\*\* Significant at 1%.  
Source: Authors’ calculations.



**Appendix Table 1. Demographic Characteristics of the Sample: Original HRS and Early Boomers (EBB)**

<b>Cohort</b>	<b>Orig. HRS</b>	<b>EBB</b>
<b>Age</b>		
Average Age	53.7	53.7
<b>Education (%)</b>		
Less Than High School	18.6	9.2
High School Graduate	38.5	28.4
Some College	21.1	29.0
College Graduate	11.4	18.2
More Than College	10.4	15.2
<b>Race/Ethnicity (%)</b>		
White	85.9	80.8
Black	10.2	11.7
Hispanic	7.6	8.7
Other	2.9	7.5
<b>Marital Status (%)</b>		
Married	71.4	62.8
Divorced	14.8	21.6
Separated	3.4	3.3
Widowed	5.5	4.9
Never Married	4.3	7.2
<b>Children (% in sample)</b>		
No Children	8.8	17.2
Have Children	91.2	82.8
<b>Sex (% in sample)</b>		
Male	55.7	54.4
Female	44.3	45.6

Note: Number of observations is 4,577 for the 1992 HRS cohort and 2,631 for the 2004 EBB. At least respondent or spouse is 51-56 years old. All figures are weighted using household weights. Source: Authors' calculations.

**Appendix Table 2. Percentage of Net Worth Accounted for by Not Planning, by Wealth Decile**

**A. Original HRS Cohort:**

<u>Decile</u>	<u>Estimate</u>	<u>Net Worth</u>	<u>Percentage</u>
10 <sup>th</sup> %	-5.90	0	NA
20 <sup>th</sup> %	-11.94	6.92	172.57
30 <sup>th</sup> %	-9.27	31	29.90
40 <sup>th</sup> %	-10.77	60	17.95
50 <sup>th</sup> %	-17.23	104	16.57
60 <sup>th</sup> %	-20.92	161	13.00
70 <sup>th</sup> %	-33.81	229.4	14.74
80 <sup>th</sup> %	-55.61	357.61	15.55
90 <sup>th</sup> %	-74.08	611.6	12.11

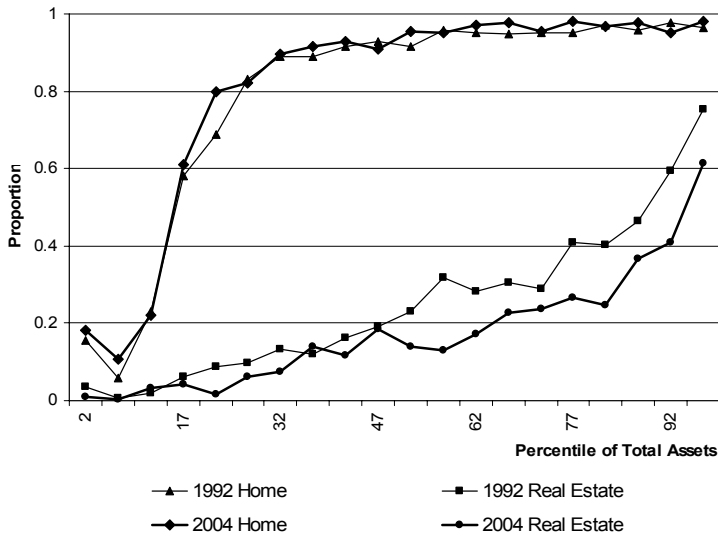
**B. EBB Cohort:**

<u>Decile</u>	<u>Estimate</u>	<u>Net Worth</u>	<u>Percentage</u>
10 <sup>th</sup> %	-8.21	0	NA
20 <sup>th</sup> %	-10.78	10.77	100.04
30 <sup>th</sup> %	-15.83	35.01	45.22
40 <sup>th</sup> %	-16.08	60.59	26.54
50 <sup>th</sup> %	-20.03	92.90	21.56
60 <sup>th</sup> %	-32.88	131.95	24.92
70 <sup>th</sup> %	-40.17	181.44	22.14
80 <sup>th</sup> %	-44.68	258.18	17.30
90 <sup>th</sup> %	-33.12	420.08	7.88

Source: Authors' calculations.

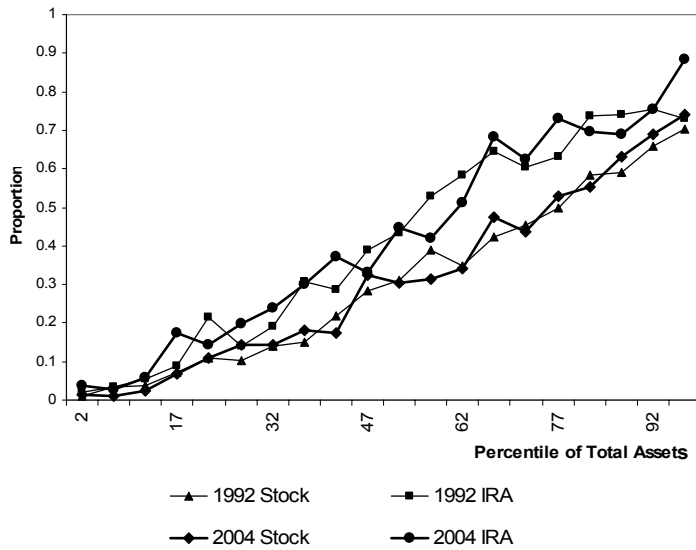
**Figure 1: Ownership of Homes and Other Real Estate for Original HRS and Early Boomer Respondents**

Source: Authors' calculations.



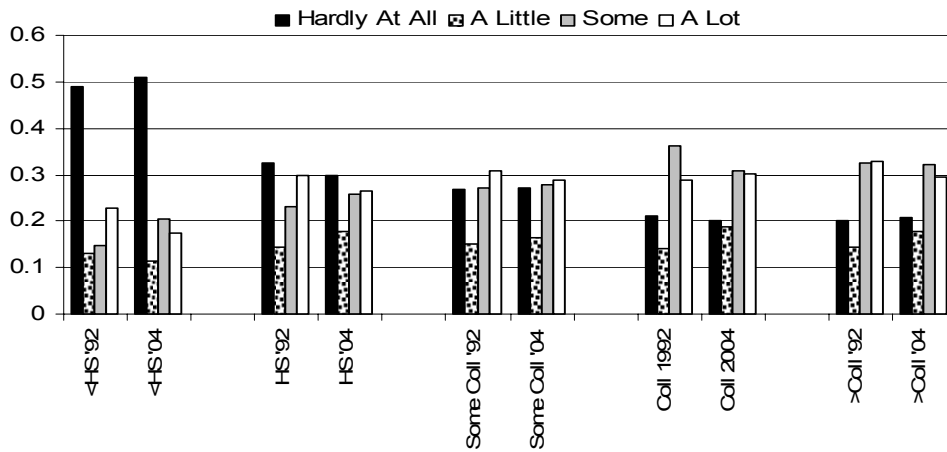
**Figure 2. Ownership of Stocks and IRAs in 1992 and 2004 Across the Distribution of Assets**

Source: Authors' calculations.

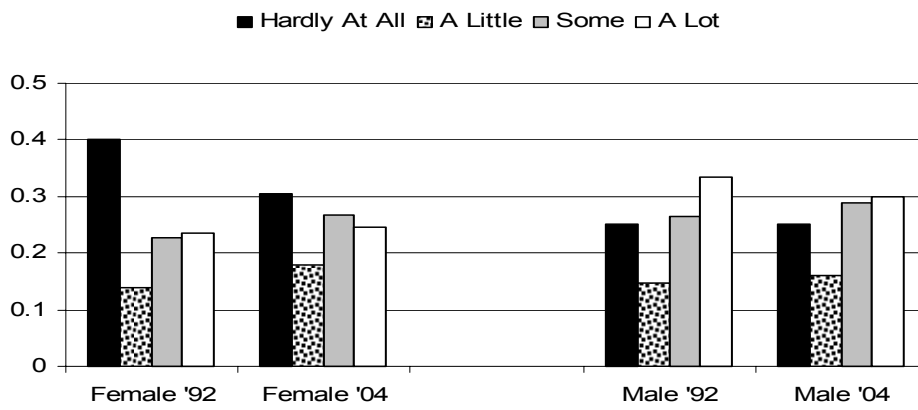


**Figure 3. Prevalence of Retirement Planning by Demographic Characteristics**  
 Source: Authors' calculations.

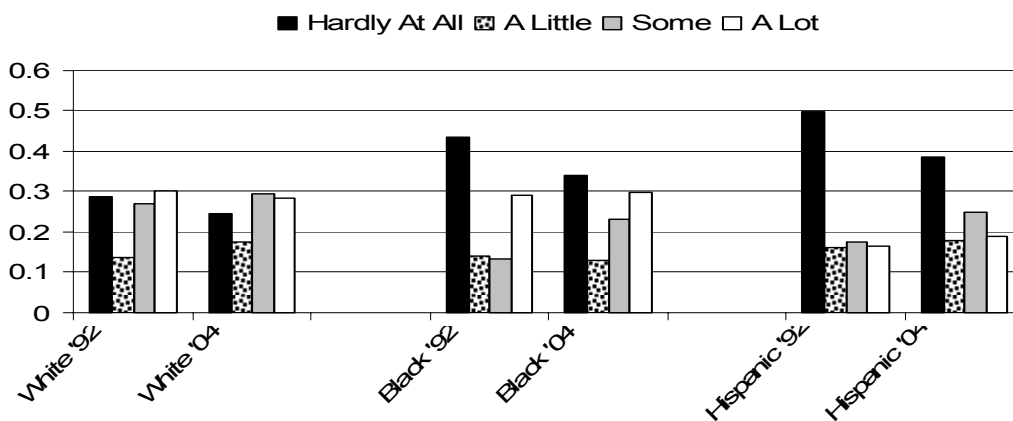
**A. Planning by Education and Cohort**



**B: Planning by Sex and Cohort**



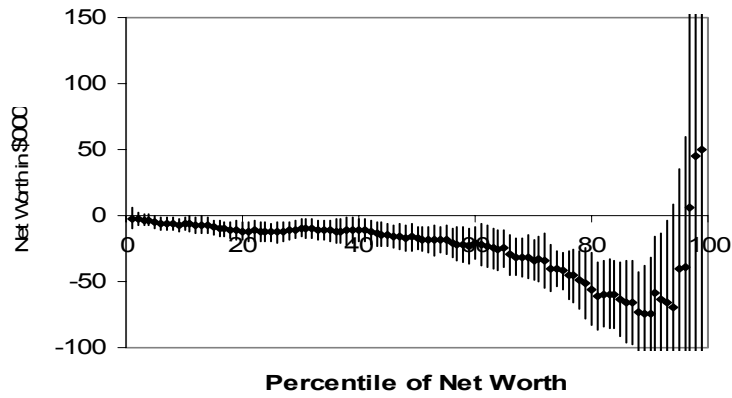
**C. Planning by Race/Ethnicity and Cohort**



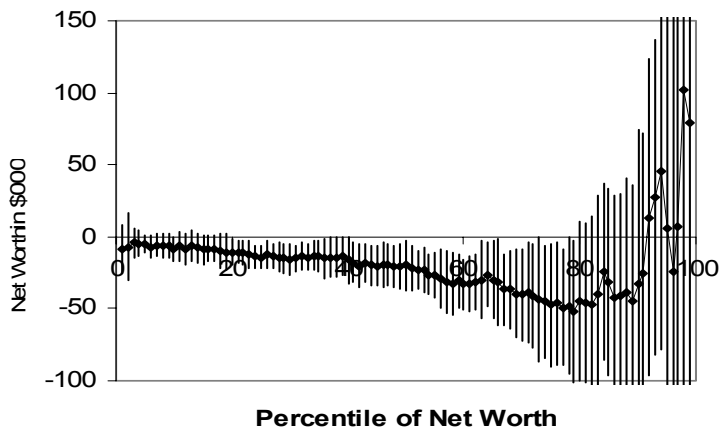
### Figure 4. Estimates of the Effect of “Not Planning” on Net Worth by Percentile of the Wealth Distribution

Source: Authors' calculations (and see Appendix Table

#### A. Pattern for Original HRS Cohort



#### B. Pattern for Early Boomer Cohort



## Endnotes

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<sup>i</sup> By comparing two generations at different points in time, we cannot distinguish between “time” and “cohort” effect. We will use the term cohort/time interchangeably. For more discussion see Kapteyn et al. (2005).

<sup>ii</sup> We also delete a handful of observations with missing information about demographic variables such as age, sex, marital status, number of children, and race and ethnicity; moreover, we also delete observations with zero income as they are likely to be the result of measurement error. The final sample size for analysis is 2,631 Early Baby Boomers and 4,577 in the HRS cohort.

<sup>iii</sup> Earlier studies on Boomers’ saving patterns are mixed; c.f. Bernheim (1993) versus the Congressional Budget Office (1993). Research on the effects of retirement seminars during the 1990s has also reported mixed results estimates (for a review, see Lusardi, 2004).

<sup>iv</sup> Our measure differs from total net non-pension wealth used in other papers in this volume as it includes IRAs and Keoghs.

<sup>v</sup> We use preliminary weights provided by the HRS for 2004 and the final weights for 1992. In both 1992 and 2004, the HRS sample is not representative of the population in that age group due to sample attrition.

<sup>vi</sup> Because race and ethnicity is not exclusive and Hispanics can also report being White, Black, or Other Race, in addition to being Hispanic, the percentages in Table 1 sum to more than 100. However, the same definition is used in both years.

<sup>vii</sup> We must also note that the analysis includes IRAs and Keoghs but excludes company pensions and Social Security wealth. As Gustman and Steinmeier (1999) show, pension and Social Security wealth can account for as much as much half of total wealth. Unfortunately the HRS has

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not yet provided accurate measures of these values for the EBB cohort. It is also worth noting that, as Cunningham et al. (this volume) show, calculations of pension wealth are difficult to compute very precisely.

<sup>viii</sup> Another asset that merits consideration is business equity. While business owners account for a small fraction of the population, they account for a sizable amount of total wealth (Gentry and Hubbard, 2004; Hurst and Lusardi, 2006). For example, while close to 15 percent of EBB are business owners, wealth they hold in business equity is as large as all the IRA wealth (even though 42 percent of Early Boomers hold IRAs). In other words, Business owners are disproportionately located at the top of the wealth distribution; Hurst and Lusardi (2006) show that over 80 percent of the richest 3 percent of households are business owners. The percentage of business owners has decreased between cohorts and so has the share of total wealth invested in business equity. Unfortunately we lack all the needed information to account for differences between business owners and other households, so we exclude business owners from further analysis.

<sup>ix</sup> For a detailed discussion of the findings in the module on planning and financial literacy, see Lusardi and Mitchell (2006a).

<sup>x</sup> As noted above, we delete business owners from the analysis since business owners display different motives to save than other households (c.f. Hurst and Lusardi, 2004, 2006; Hurst et al. 2005). Moreover, there are several measurement issues in assessing correctly their income, as they have a clear incentive to under-report earnings. For a good discussion of this issue, see Hurst et al. (2005).

<sup>xi</sup> We trim the top and the bottom 1 percent of the wealth distribution to avoid outliers in the empirical work.

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<sup>xii</sup> To limit the effect of outliers, we take the log of income. This empirical specification is similar to the specification used in most saving studies (Lusardi 2002, 2003).

<sup>xiii</sup> For brevity, we only report median rather than other quantile estimates, but planning has an effect across the wealth distribution. For a discussion of the role of housing wealth on retirement savings, see Venti and Wise (1990, 1991).

<sup>xiv</sup> As there are some very high net worth households at the top of the wealth distribution, they become influential in the OLS estimates; researchers must take care in assessing the empirical estimates of lack of planning on wealth.

<sup>xv</sup> However, it is also possible that extremely wealthy individuals plan less because they do not need to plan in order to build wealth, biasing the coefficient in the previous regressions toward zero.

<sup>xvi</sup> We cannot take the log of wealth as many households have negative wealth particularly in 2004; for a similar approach see Haliassos and Bertaut (1995).

<sup>xvii</sup> Hurst and Lusardi (2004) have used similar instruments for wealth to be able to assess the effect of wealth on business start-ups.

<sup>xviii</sup> We have also considered other time periods. For example, we consider price changes in the previous two years and we consider price changes in a 10-year period. In both case, we find that price changes are good predictor of wealth. We report the estimates of the 1-year price change only because they are the strongest predictor of wealth. IV estimates in the other two cases are similar.

<sup>xix</sup> Given the importance of housing equity in the measure of total net worth, these estimates may simply show that planning has an effect on housing wealth. Nevertheless it is difficult to find



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instruments that predict non-housing wealth, so we restrict the IV estimation to only one measure of household wealth.