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## Cohort Differences in Retirement Expectations and Realizations

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## Cohort Differences in Retirement Expectations and Realizations

### Abstract

This chapter compares retirement expectations, retirement patterns, and expectations of future work across different cohorts of the Health and Retirement Study, including the new cohort of Baby Boomers currently in their late 50's. We find that the Boomers are more strongly attached to the labor force as they enter their retirement years than were earlier cohorts at the same age. Compared to the preceding birth cohort, they expect to retire nearly one year later, they are 14 percent more likely to expect to be working full-time at age 65, and they are 21 percent more likely to expect to work in the future if they are not currently working. We find that these differences are not entirely explained by cohort differences in socioeconomic status, pension incentives, demographics, or health. We conclude that the Baby Boomers may have stronger preferences for work than previous cohorts.

### Disciplines

Economics

### Comments

The published version of this Working Paper may be found in the 2007 publication: *Redefining Retirement: How Will Boomers Fare?*

## Chapter 2

### **Cohort Differences in Retirement Expectations and Realizations**

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*Nicole Maestas*

Many writers have suggested that retirement patterns among Baby Boomers will differ from those of previous cohorts because of broad social and economic changes in work patterns and family structure. Analysts have already noted several important trends in older workers' employment patterns, including the fact that the long historical trend to earlier retirement among US males came to a halt in the mid-1980s (Quinn 1999; Purcell 2005). Indeed, recent figures suggest even a slight *increase* in men's labor force participation (Purcell 2005), perhaps because of the elimination of mandatory retirement (in 1986), and the weakening of financial incentives to retire under both Social Security and private pension schemes (Burtless and Quinn 2000; Purcell 2005). For older women, labor force participation rates have been rising since 1950, with the most dramatic increases occurring since the mid-1980s (Quinn 1999).

It is also worth noting that many older workers are now choosing retirement paths that depart from the traditional pattern of complete labor force withdrawal following many years of work in a full-time career job. For instance, a half to two-thirds of HRS respondents transition from full-time career jobs to bridge jobs on the way to retirement (Cahill et al. 2005). Partial retirement is also an increasingly important alternative transition path, and some bridge jobs are a form of partial retirement. The prevalence of partial retirement among older workers ranges from 44 percent (Maestas 2005) to half (Ruhm 1990). And even among those who have partially or even completely retired, many people subsequently return to work; if partially retired, many return to full-time work. About a quarter of retirees later returns to work after a period of retirement, with this figure rising to over one-third among younger retirees (Maestas 2005). In sum, recent research suggests that Boomers may be more likely to work longer, transition through a bridge job or partial retirement job, and return to work after a period of labor force withdrawal than earlier cohorts.

This chapter evaluates early data on this hypothesis using the most recent evidence on work and retirement for the leading edge of the Baby Boomers

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in the Health and Retirement Study (HRS). We compare Boomers with earlier cohorts, to develop insights into current trends in work, retirement, and postretirement work. Thus we examine cross-cohort trends in labor force participation, retirement expectations, retirement transitions to full and partial retirement, and expectations of future work among those who have already retired, and we also consider the role played by cohort differences in socioeconomic status (SES), health, and demographic characteristics. In what follows, we first describe the birth cohorts used and explain our definitions of partial and complete retirement. We then look at age profiles in full-time work, partial retirement, full retirement, and the likelihood of future work to show how trends evolve within a cohort, across cohorts over time, and over the second half of the life cycle. Finally, we present results from several multivariate regression models useful in assessing whether cohort differences in work and retirement behavior are primarily due to changes in SES, or other factors.

### **Cross-Cohort Comparisons**

Our analysis identifies several birth cohorts included in the first seven waves of the Health and Retirement Study (HRS). These cohorts have been denominated according to their birth years as follows: the Children of the Depression Age (CODA, born 1926–30); the original HRS (born 1931–41); the War Babies (WBs) (born 1942–47); and the Early Boomers (born 1948–53). To facilitate comparisons of equal-sized cohorts, we divide the original HRS cohort into two, which we term here the HRS-Early (born 1931–35), and the HRS-Late (born 1936–41) groups. Due to the longitudinal structure of the HRS, we observe each cohort as it ages, and we also observe cohorts at similar ages but at different times. The analysis focuses on four specific age bands, namely 51–56-year olds (which we call the ‘preretirement’ years); the 57–61-year olds (the ‘near-retirement’ group); the 62–67-year olds (the ‘retirement’ group); and the 68–72-year olds (which we term the ‘postretirement’ group).<sup>1</sup>

#### *Retirement Definitions*

There are many ways to define partial and complete retirement, ranging from more objective measures based on hours of work to subjective measures that rely on self-assessed retirement status. Complicating matters is the fact that partial retirement rates are rather sensitive to whether subjective or objective information is used, with subjective responses yielding substantially higher rates. On the other hand, full retirement rates are more stable across alternative definitions. A drawback of relying solely

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on self-assessed retirement status is that people differ in their retirement definitions. For example, among those who say they are partially retired in the first wave of the HRS, 21 percent were working full-time, 45 percent were working part-time, and 33 percent were not working at all. Similar patterns can be found in the other waves.

Accordingly, in what follows, we combine subjective and objective definitions, classifying a respondent as *partially retired* if he describes himself as retired and working part-time (i.e. working fewer than thirty-five hours per week or fewer than thirty-six weeks per year). We classify a respondent as *completely retired* if he reports himself to be retired and he is not working for pay.<sup>2</sup>

### Preretirees (Aged 51–56)

We begin with a cross-cohort comparison of demographic characteristics in Table 2.1, which compares three cohorts of 51–56-year olds, namely the HRS-Late, the WBs, and the Early Boomers. Average ages are similar, as is the fraction female.<sup>3</sup> Not surprisingly, the Early Boomers are more educated than earlier cohorts, with mean years of education rising from 12.5 for the earliest cohort to 13.1 for the middle cohort and to 13.5 for the Early Boomers. The Early Boomers are more ethnically diverse than earlier cohorts, with a significantly higher fraction of Hispanic and Asian cohort members; they are also less likely to be married at age 51–56 and more likely to report they have never married.<sup>4</sup> The evidence also suggests that the cohorts examined here do not differ significantly in terms of the fraction reporting poor health, but there are differences in the mean number of major health conditions reported.<sup>5</sup> It is interesting that the leading edge of the 51–56-year olds is healthier than the Early Boomers, a point taken up elsewhere by Soldo et al. (Chapter 7, this volume) and Weir (Chapter 5, this volume).

The table also indicates that Early Boomers have significantly higher mean labor income, household income, and total net nonpension wealth at ages 51–56 (in constant \$2004) than did earlier cohorts at the same ages. And not surprisingly, overall pension coverage rates are similar but pension type has changed, in line with national trends. Some 62 percent of the HRS-Late cohort had a primary defined benefit (DB) pension, but only 39 percent of the Early Boomers do; conversely, defined contribution (DC) coverage rose from 34 percent among the earliest cohort to 56 percent among the Early Boomers. Inasmuch as many DB pension plans have strong age-related retirement incentives largely absent from DC pensions, this difference alone could lead to significant changes in retirement patterns over time.

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TABLE 2-1 Cross-Cohort Comparisons at Ages 51–56

<i>Characteristic</i>	<i>HRS-Late (1992)</i>	<i>War Babies (1998)</i>	<i>EBB (2004)</i>	<i>ANOVA p-Value</i>
<i>Demographic</i>				
Age	53.3	53.3	53.3	0.343
Female	52.1	52.5	51.0	0.361
Years of education	12.5	13.1	13.5	0.000
<i>Race/ethnicity</i>				
White	80.6	80.0	75.7	0.000
Black	10.0	9.7	11.0	0.110
Hispanic	7.0	7.4	9.7	0.000
Asian/other	2.3	2.9	3.5	0.011
<i>Marital status</i>				
Married	74.7	71.2	68.5	0.000
Separated/divorced	14.7	18.0	17.4	0.001
Widowed	4.2	3.9	3.5	0.201
Never married	3.5	4.2	5.2	0.002
<i>Health status</i>				
Poor health	6.0	7.0	6.9	0.183
Sum of major health conditions	0.9	1.0	1.2	0.000
<i>Income and wealth</i>				
Labor income (\$)	34,208	32,344	38,668	0.000
Household income (\$)	74,260	88,694	94,335	0.000
Total net nonpension wealth (\$)	307,438	323,580	393,833	0.000
<i>Pension coverage</i>				
Any private pension coverage	58.6	60.2	61.0	0.197
Primary pension is DB	62.2	44.4	39.4	0.000
Primary pension is DC	34.4	44.3	55.6	0.000
<i>Expectations</i>				
Expected retirement age	62.9	62.7	63.8	0.000
Probability of working FT after 62	46.9	47.8	50.5	0.001
Probability of working FT after 65	26.3	28.8	32.8	0.000
Probability of working for pay in future		28.0	37.3	0.000
Probability of living to 75 or more	64.9	66.0	63.7	0.005
Life table probability of living to 75 or more	67.6	69.2	71.3	0.000
Ratio of self-report prob. to life table prob.	0.96	0.95	0.90	0.000
Short financial planning horizon	25.7	21.4	25.1	0.000
<i>Labor force status</i>				
Working FT	61.2	65.3	64.1	0.002
Working PT	10.6	9.4	10.7	0.126

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TABLE 2-1 (continued)

<i>Characteristic</i>	<i>HRS-Late (1992)</i>	<i>War Babies (1998)</i>	<i>EBB (2004)</i>	<i>ANOVA p-Value</i>
Partly retired	2.2	3.0	2.3	0.072
Completely retired	9.2	8.1	9.2	0.157
Disabled	3.6	5.1	4.0	0.004
Both spouses working if married	52.4	55.3	59.1	0.000
<i>Early retirement transitions</i>				
First retirement within 4 years of baseline	14.8	15.5		0.486
Partial retirement	4.3	4.4		0.918
Full retirement	10.5	11.1		0.461
Unretirement within 2 years of retirement	23.7	27.5		0.200
<i>N</i>	5,325	2,888	3,159	

*Source:* Author's tabulations.

*Notes:* Data weighted by survey weights; all \$2004. Sample for early retirement transitions includes respondents working for pay (FT or PT) at baseline, which is defined as 1992 for HRS-Late cohort and 1998 for War Babies cohort.

One interesting difference across cohorts is that Early Boomers anticipate retiring later, at age 64 on average, than the age of 63 reported by HRS-Late and WBs. These cross-cohort differences cannot be attributed solely to differences in the Social Security normal retirement age, since nearly all of the WBs and the Early Boomers share a common full retirement age (FRA) of 66 (the FRA for the HRS-Late cohort ranges from 65 to 65 and 8 months).<sup>6</sup> Consistent with their later expected retirement age, the Early Boomers also report higher probabilities of working full-time at ages 62 and 65: they give themselves a 51 percent chance of working full-time at 62, whereas the HRS-Late and WBs cohorts gave themselves a 47 and 48 percent chance, respectively (the differences are statistically significant). Early Boomers also indicate a 33 percent chance of working full-time at age 65, whereas the HRS-Late and WBs reported only a 26 and 29 percent chance, respectively. Similarly, Early Boomers not currently working at ages 51–56 say there is a 37 percent chance they will work again in the future, whereas the WBs gave themselves only a 28 percent chance of doing so.

The HRS respondents are also asked to rate the likelihood they will live to age 75 or beyond; this is particularly interesting since life expectancy is an important input into retirement planning. Strikingly, Early Boomers give themselves a significantly *lower* probability of living to 75 (64%) than the earlier cohorts (65% for HRS-Late and 66% for WBs). In contrast, the life table probability of living to 75 or more is substantially higher for the

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Early Boomers (71%) than for earlier cohorts (68% for HRS-Late and 69% for WBs).<sup>7</sup> The ratio of the self-reported over the life table probabilities is about 0.90 and statistically less than 1, indicating the Early Boomers systematically underestimate their probability of surviving to age 75 by about 10 percent.<sup>8</sup> This nontrivial underestimate is also worse for Boomers than earlier cohorts. This finding has implications for retirement planning: those who systematically underestimate their life expectancies may fail to save enough or may dissave too fast. Early Boomers are also more likely than the WBs to report that they have only a short planning horizon (the next few months or next year), though they are about just as likely to have a short planning horizon as the HRS-Late cohort.

We also examine labor force participation rates at ages 51–56. The WBs cohort had the highest fraction working full-time and the lowest fraction completely retired. This is surprising, given the later expected retirement age and higher probabilities of full-time work at 62 and 65 reported by Early Boomers. But in a two-way comparison of means between the WBs and Early Boomers, the differences in full-time work and complete retirement are not statistically significant. Of course, as more respondents implement their retirement plans over time, more pronounced cohort differences may yet emerge. For couples, for instance, the fraction of 51–56-year olds in which both spouses are working has risen over time from 52 percent among the HRS-Late to 59 percent among the Early Boomers. This suggests that joint retirement decisions may become even more important among later cohorts.

The longitudinal structure of the Health and Retirement Study permits us to follow the HRS-Late and WBs forward, to measure early retirement transitions (Early Boomers have not yet been resurveyed). Of the 51–56-year olds working for pay (full- or part-time) at their first interview (1992 for HRS-Late and 1998 for WBs), some 15 percent of both cohorts had retired within four years of their first interview; approximately 70 percent transitioned to full retirement and 30 percent to partial retirement. About 24 percent of the HRS-Late and 28 percent of the WBs later ‘unretired’ (i.e. returned to work) within two years of their first retirement. Although the unretirement rates are not statistically different, they do suggest the possibility of an increasing trend in early retirement and subsequent unretirement. To construct an estimate of the fraction of individuals ever transitioning through partial retirement, we add the fractions transitioning from full-time work to partial retirement, and from complete retirement to partial retirement (i.e. part-time work). Under this definition, about 39 percent of the HRS-Late transitioned through partial retirement compared to 43 percent of the more recent WBs cohort. These estimates are suggestive of a rise in partial retirement in later cohorts (see also Maestas 2005).



*Near-Retirement (Ages 57–61)*

Next, we examine trends among successive cohorts of 57–61-year olds, an analysis limited to the HRS-Early, HRS-Late, and WBs (as the early Boomers are not old enough yet). Table 2.2 shows that age across the cohorts was 59; other trends are as noted for Table 2.1. Later cohorts are more educated, wealthy, more ethnically diverse, and less likely to be married. Although later cohorts are increasingly less likely to report poor health status, they also report having been diagnosed with more major health conditions. With regard to retirement expectations, the HRS-Early cohort is similar to the HRS-Late; many of the significant cross-cohort differences appear to be driven by the WBs cohort (about one-third of whom are the oldest members of the Baby Boom generation born in 1946 and 1947). For example, the expected retirement age is 64 for both HRS-Early and HRS-Late members, compared to 65 for the WBs. Expected retirement ages in Table 2.2 are higher than those in Table 2.1 simply because some of younger people in Table 2.1 already retired. Nonworking persons in their late 50s indicate lower probabilities of working for pay in the future, than nonworkers in their early 50s, probably reflecting the shifting composition of labor force exits away from unemployment spells and toward retirement.

Turning to life expectancy data, it is interesting that people aged 57–61 do not appear to adjust their survival probabilities upward, as they survive additional years. Comparing Table 2.1 with Table 2.2, for example, we note that the WBs at ages 51–56 report a 66 percent chance of surviving to 75 and a 65 percent chance at 57–61. Since the life table survival probability increases with each additional year of survival, the ratio of self-reported and life table probabilities falls substantially below 1 in all cohorts. The underestimation problem gets worse with age for both the WBs and HRS-Late cohorts, the same is likely to be true for the Early Baby Boomers (EBBs).

Another intriguing aspect of Table 2.2 is the sharp rise in reported retirement satisfaction over time. Of the HRS-Early members who had already retired, 31 percent said their retirement years were worse than the years before retirement, compared to 22 percent of the HRS-Late and just 20.3 percent of the WBs. Further study is required to determine whether the differences represent ‘real’ differences in satisfaction or reflect contextual effects resulting from differences in the survey questionnaires over time.

It is also worth noting that the cohorts look similar in terms of their fractions working full- and part-time at ages 57–61, but partial retirement has risen steadily over time, and the fraction completely retired by these ages is highest among the WBs. We also examine labor force transitions for the subset of 57–61-year olds in each cohort working for pay at baseline (1992 for the HRS-Early and 1998 for the HRS-Late). We then follow each cohort for six years beyond baseline and observe transitions in and out of

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TABLE 2-2 Cross-Cohort Comparison at Ages 57–61

<i>Characteristics</i>	<i>HRS-Early (1992)</i>	<i>HRS-Late (1998)</i>	<i>War Babies (2004)</i>	<i>ANOVA p-Value</i>
<i>Demographic</i>				
Age	58.9	58.9	58.9	0.267
Female	52.2	52.7	51.9	0.784
Years of education	12.1	12.5	13.1	0.000
<i>Race</i>				
White	82.0	80.4	79.3	0.018
Black	10.2	9.6	10.4	0.525
Hispanic	5.7	8.0	7.3	0.002
Asian/other	2.1	2.0	3.1	0.004
<i>Marital status</i>				
Married	74.4	71.5	69.5	0.000
Separated/divorced	12.3	13.9	17.0	0.000
Widowed	8.0	7.8	5.5	0.000
Never married	3.6	3.3	4.0	0.257
<i>Health status</i>				
Poor health	9.1	8.2	7.3	0.032
Sum of major health conditions	1.2	1.4	1.7	0.000
<i>Income and wealth</i>				
Labor income (\$)	25,846	25,923	28,281	0.102
Household income (\$)	62,287	77,861	80,585	0.000
Total net nonpension wealth (\$)	337,533	456,010	499,491	0.003
<i>Pension coverage</i>				
Any private pension coverage	51.5	55.9	57.1	0.001
Primary pension is DB	61.0	46.9	41.3	0.000
Primary pension is DC	35.7	45.4	50.5	0.000
<i>Expectations</i>				
Expected retirement age	64.0	64.0	65.1	0.000
Probability of working FT after 62	51.4	51.0	55.0	0.001
Probability of working FT after 65	27.5	28.4	35.3	0.000
Probability of working for pay in future		17.2	21.7	0.001
Probability of living to 75 or more	63.6	65.5	64.5	0.062
Life table probability of living to 75 or more	70.6	72.1	74.2	0.000
Ratio of self-report prob. to life table prob.	0.91	0.91	0.87	0.000
Short financial planning horizon	30.3	25.8	28.9	0.221
Retirement years worse than before	31.3	22.0	20.3	0.000

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TABLE 2-2 (continued)

<i>Characteristics</i>	<i>HRS-Early</i> <i>(1992)</i>	<i>HRS-Late</i> <i>(1998)</i>	<i>War Babies</i> <i>(2004)</i>	<i>ANOVA</i> <i>p-Value</i>
<i>Labor force status</i>				
Working FT	49.0	49.4	50.4	0.470
Working PT	9.6	8.8	8.3	0.175
Partly retired	4.6	5.9	6.4	0.005
Completely retired	20.6	20.2	22.5	0.039
Disabled	3.6	5.6	4.8	0.001
<i>Retirement transitions</i>				
First retirement within 4 years after baseline	43.8	40.6		0.030
Partial retirement	12.3	11.4		0.356
Full retirement	31.5	29.2		0.093
Unretirement within 2 years of retirement	15.3	16.8		0.386
<i>N</i>	3,955	3,978	2,336	

*Source:* Author's tabulations.

*Notes:* Data weighted by survey weights; all \$2004. Sample for retirement transitions includes respondents working for pay (FT or PT) at baseline, which is defined as 1992 for HRS-Early cohort and 1998 for HRS-Late cohort.

retirement. The HRS-Late cohort was about 3 percentage points less likely to retire within four years of baseline than the HRS-Early. The HRS-Late were also 2 percentage points more likely to unretire within two years of retirement than the HRS-Early (though the difference is not statistically significant). Comparing Table 2.1 with Table 2.2, the unretirement rates for individuals 57–61 at baseline are approximately 10 percentage points lower than for those who were only 51–56 at baseline. The finding of an age gradient in unretirement has been noted in previous research on unretirement (Maestas 2005). The fractions estimated to ever transition through partial retirement (again combining those who transition from full-time work to partial retirement, and those who transition from complete retirement to partial retirement) yields similar rates for the HRS-Early (37%) and the HRS-Late (38%). These rates are somewhat lower than the rates documented for 51–56-year olds, suggesting that like unretirement, the incidence of partial retirement also declines with age.

### At Retirement Comparisons (Ages 62–67)

Comparisons in this age range draw on the HRS-Early and HRS-Late cohorts, using observations from HRS Waves 4 and 7. To avoid

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redundancies with previous tables, we simply highlight important points. Among those still working at ages 62–67, the HRS-Late cohort has a significantly later expected retirement age, and nonworkers in the HRS-Late cohort are significantly more likely to expect to work in the future than are nonworkers in the HRS-Early cohort (14 vs. 12). The HRS-Late cohort is more likely to underestimate the probability of surviving to age 75—the ratio of self-reported to life table probabilities is 0.87 for the HRS-Early and 0.85 for the HRS-Late—which suggests that the tendency not to update one’s survival probability with additional years of life persists through the age distribution. Finally, labor force participation is higher for the HRS-Late, where 23 percent of 62–67-year olds are working full-time, and another 18 percent are either working part-time or partially retired (which is defined by reporting both retirement and part-time work). The comparable figures for the HRS-Early cohort are 20 percent (full-time work) and 16 percent (part-time work/partial retirement).

### *Postretirement Comparisons (Ages 68–72)*

Last, we examine trends in postretirement labor supply by comparing the two cohorts of 68–72-year olds, namely the CODA cohort and the HRS-Early groups.<sup>9</sup> Although these cohorts predate Baby Boomers, they may nevertheless reveal the direction of trends likely to be carried on by the Baby Boomers. Results are summarized in Table 2.3.

Moving directly to the expectations questions, there is again evidence of a rise over time in the likelihood of working for pay in the future. The CODA cohort reports a 6 percent chance of working in the future, whereas this probability rises to 8 percent for the later HRS-Early cohort, an increase of 52 percent. Finally, the rise in partial retirement across cohorts in their late 50s exists at these later ages as well. About 11 percent of 68–72-year olds in the earlier CODA cohort were partially retired, compared to 14 percent of HRS-Early cohort members at the same age.

## **Age Profiles in Work and Retirement**

Next we turn to an examination of work and retirement patterns by single year of age, taking advantage of the longitudinal structure of the HRS. In this process, the length of the observation period varies by cohort, since the cohorts entered the HRS in different calendar years and at different ages.

### *Patterns of Full-Time Work*

Figure 2.1 shows the age pattern of full-time work, using available data by cohort for ages 51–78. We note cohort comparisons in age ranges where two

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TABLE 2-3 Cross-Cohort Comparison at Ages 68–72

<i>Characteristics</i>	<i>CODA (1998)</i>	<i>HRS-Early (2004)</i>	<i>t-Ratio</i>
<i>Demographic</i>			
Age	70.0	70.1	-1.56
Female	55.6	54.8	0.54
Years of education	12.0	12.4	-3.97
<i>Race</i>			
White	83.4	84.2	-0.79
Black	9.0	8.8	0.20
Hispanic	5.2	4.9	0.43
Asian/other	2.5	2.1	0.92
<i>Marital status</i>			
Married	65.7	64.8	0.62
Separated/divorced	9.1	10.2	-1.26
Widowed	21.3	18.8	2.14
Never married	2.8	3.8	-1.91
<i>Health status</i>			
Poor health	10.0	8.3	2.05
Sum of major health conditions	1.8	2.3	-12.10
<i>Income and wealth</i>			
Labor income (\$)	4,342	4,903	-1.14
Household income (\$)	47,400	51,934	-2.50
Total net non-pension wealth (\$)	374,631	509,724	-3.20
<i>Expectations</i>			
Probability of working for pay in future	5.7	8.3	-4.01
Short financial planning horizon	33.6	33.5	0.06
Retirement years worse than before	15.0	19.1	-1.74
<i>Labor force status</i>			
Working FT	8.0	9.1	-1.37
Working PT	2.7	3.2	-0.87
Partly retired	10.6	13.9	-3.52
Completely retired	64.0	63.5	0.42
Disabled	1.6	1.0	2.04
<i>N</i>	2,242	2,464	

*Source:* Author's tabulations.

*Notes:* Data weighted by the survey weights for each wave; all in \$2004. Because the HRS-Early cohort is slightly older than the CODA cohort, we trimmed the very youngest CODA respondents and the very oldest HRS-Early respondents from the sample in Tables 2–3 in order to equalize the age distributions of the two cohorts.

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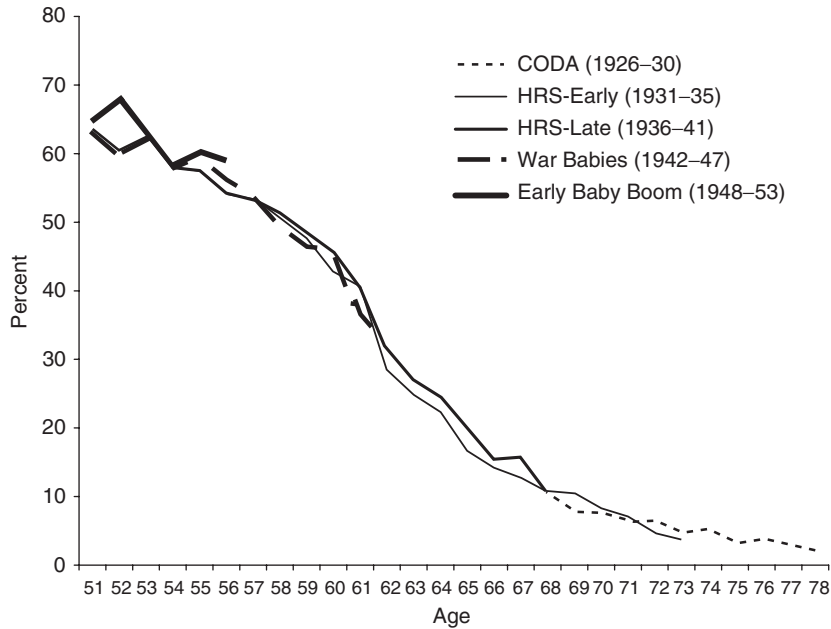


Figure 2-1. Percent working full-time by age and cohort. (Source: Author’s calculations.)

or more cohorts overlap. This figure confirms the labor force results from Tables 2.1 and 2.2; there are no notable differences across cohorts in rates of full-time work between the ages of 51 and 61. Although Early Boomers have higher participation rates at ages 51 and 52, this differential vanishes by age 53 and the cohort goes on to track the earlier WBs cohort closely. The WBs, in turn, have a higher fraction working full-time during their mid-to-late-50s compared to the HRS-Late cohort, but Table 2.2 showed that on average this difference is not statistically significant. The WBs closely track the HRS-Late over the rest of the age range they share. Between ages 62 and 67, however, cohort differences begin to emerge between the HRS-Late and HRS-Early cohorts. A significantly higher fraction of the HRS-Late cohort works full time (significance tests not reported). Finally, full time work tapers off as individuals enter their 70s, with no statistically significant differences between the CODA and HRS-Early cohorts.

*Patterns of Partial Retirement*

Figure 2.2 presents age profiles for partial retirement. Here the partial retirement rates rise steadily over ages 51–61, increase sharply just at age

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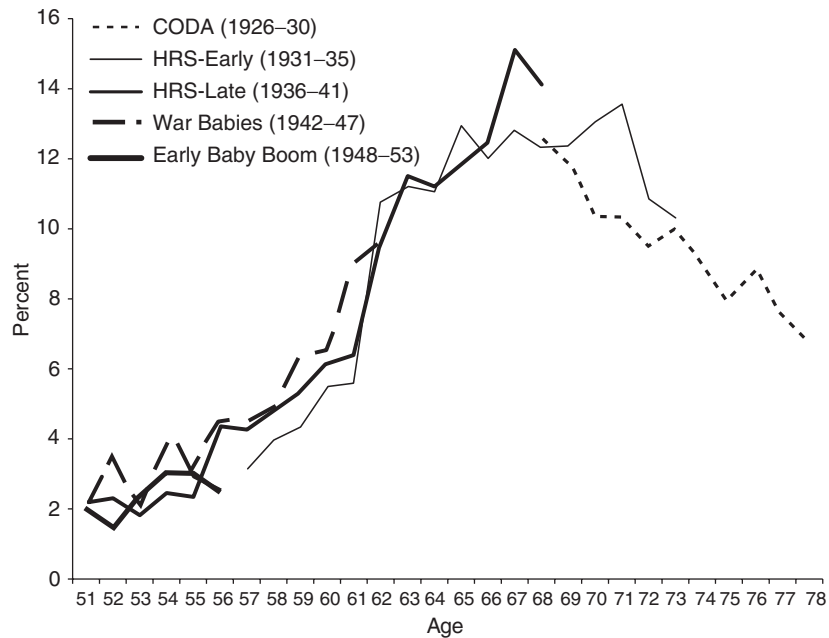


Figure 2-2. Percent partially retired by age and cohort. (Source: Author's calculations.)

62 (the Social Security early retirement age), flatten through the late 60s and then decline through the 70s. The near doubling of partial retirement rates at the early retirement age suggests that for many, partial retirement becomes feasible only once they are able to claim old-age retirement benefits.

Partial retirement rates are lower for the Early Boomers than for the WBs through the ages 51–56 (although this difference is not statistically significant). Yet over most of the age range 51–61, WBs had significantly higher partial retirement rates than the earlier cohort. Consistent with the tables, the detailed age profiles in Figure 2.2 suggest a trend toward partial retirement among later cohorts. Although the Early Boomers would seem to be an exception, they are still relatively young and have not moved into the age ranges where partial retirement is most prevalent.

### Full Retirement Patterns

Figure 2.3 shows the same analysis for full retirement. Here the age pattern for full retirement steadily rises with age, growing steeper at the Social

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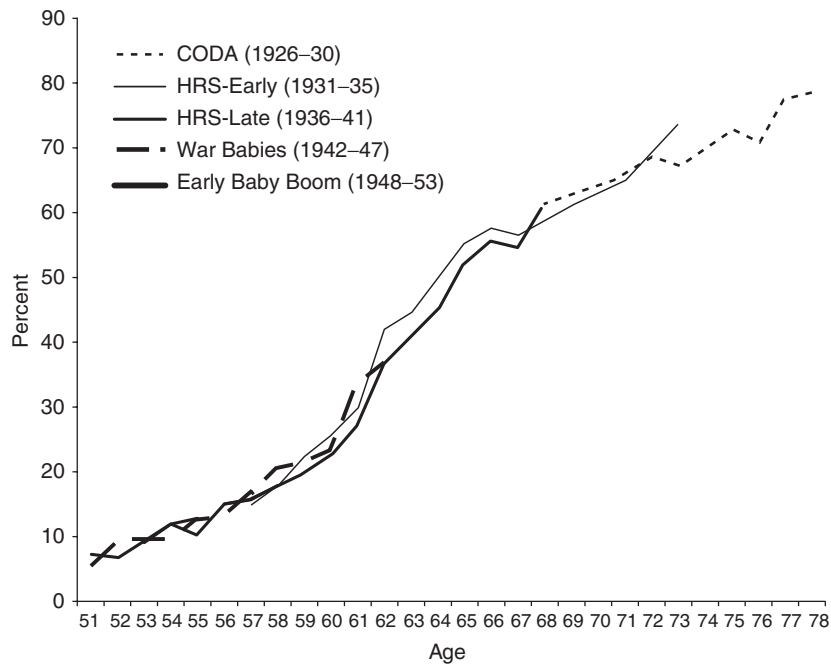


Figure 2-3. Percent fully retired by age and cohort. (Source: Author's calculations.)

Security early retirement age. There are few cohort differences in the percentage of fully retired, with an exception for those 62–67 where the HRS-Early have significantly higher full retirement rates than the HRS-Late (significance tests not reported).

### Likelihood of Future Work

Finally, Figure 2.4 shows the age profile in respondents' self-assessed percentage of chance of working for pay in the future, a question asked from all those not working. The age profile for the likelihood of future work declines steadily with age, from a high of about 40 percent at age 51 to a low of about 5 percent at age 78. Here we note substantial cohort differences, with a clear upward trend in the likelihood of future work over time. Nonworking Early Boomers in their early 50s are significantly more likely to expect to work in the future than are their counterparts in the earlier WBs cohort. After the late 50s, WBs are more likely to expect future work than the earlier cohorts. This pattern is suggestive of a growing trend toward unretirement among later cohorts.



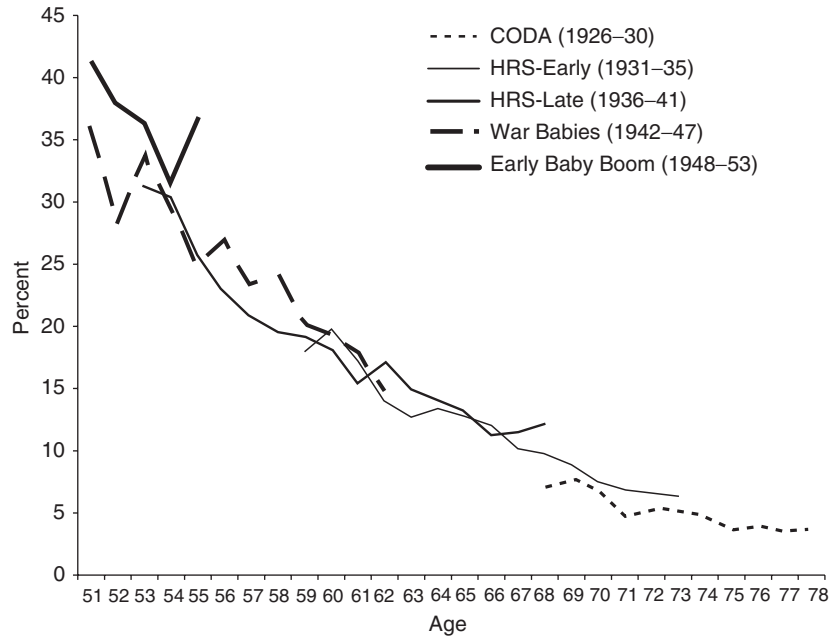


Figure 2-4. Expected probability of working in future if not currently working by age and cohort. (Source: Author’s calculations.)

**Adjusting for Other Cohort Differences:  
Multivariate Regression Models**

Having documented a number of interesting cross-cohort differences with respect to retirement expectations, partial retirement, and the likelihood of future work, we next offer results for a series of multivariate regression models that test for significant differences in a multivariate setting. We estimate equations of the following form:

$$y_{ia} = \alpha_a + DEMOG_{ia}\beta_a + SES_{ia}\gamma_a + COHORT_{ia}\delta_a + \varepsilon_{ia},$$

where  $y_{ia}$  represents the outcome of interest for respondent  $i$  in age group  $a$ ;  $DEMOG_{ia}$  is a set of demographic variables including gender, race, marital status, and health status and also includes a set of age dummies to control for cross-cohort differences in the distribution of ages within age group  $a$ . The term  $SES_{ia}$  represents a set of variables measuring SES for person  $i$  in age group  $a$ , including education, labor income, household income, type of pension coverage, and total net nonpension wealth, and

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$\text{COHORT}_{ia}$  is a set of dummies for the respondent's birth cohort. Finally,  $\alpha_a$  is an intercept for age group  $a$  and  $\varepsilon_{ia}$  is a random error term.

Table 2.4 presents ordinary least squares (OLS) regression results for selected outcome variables in each age group. The first column regresses expected retirement age on socioeconomic factors, health, demographic characteristics, and cohort dummies for 51–56-year olds. The coefficient on the cohort dummy for the Early Boomers implies this cohort expects to retire 0.81 years later than the reference cohort, the HRS-Late, an effect that is highly statistically significant. The unadjusted cohort difference shown in Table 2.1 is about 0.9 years, so the difference is only mildly attenuated once we control for education, labor income, total household income, pension coverage, and total net nonpension wealth. Auxiliary analyses (not shown) suggest that cross-cohort variation in DB pension coverage is the most important attenuating factor in this case. As noted above, Early Boomers are less likely to participate in DB plans than earlier cohorts, and these impose strong disincentives for work beyond key retirement ages.<sup>10</sup>

The second column of Table 2.4 uses as the dependent variable the expected probability of working for pay in the future. Here the reference group is the WBs (this survey question was not asked in the wave during which the HRS-Late were 51–56, Wave 1). The Early Boomer effect is somewhat attenuated, compared to the unadjusted cohort difference in Table 2.1, but it still suggests that those Early Boomers not working at ages 51–56 rate themselves about 6 percentage points (21%) more likely to work in the future than similar WBs. The estimate is economically and statistically significant, even controlling for SES. In sum, at ages 51–56, the Early Boomers appear to be more attached to the labor force than earlier cohorts, even after controlling for variables that also affect labor force attachment, like education, income, and wealth.

Selected outcomes for the 57–61 age group appear in the second panel of Table 2.4. The unadjusted cohort difference in expected retirement age is virtually unchanged once we control for SES, health, and demographic characteristics (Table 2.4, column 3); the WBs expect to retire one year later on average than the HRS-Early and HRS-Late cohorts. This pattern is particularly interesting since the WBs expected to retire nearly half a year *before* the HRS-Late when asked in their early 50s. This reversal likely reflects the greater variance in the retirement plans of later cohorts noted earlier. Cohort differences in the expected probability of working in the future are unaffected by SES, health, and demographic characteristics (column 4), with nonworking WBs reporting they are 5.2 percentage points (30%) more likely to work in the future than nonworking HRS-Late respondents. Of note in this model is the strong effect of last year's labor income on the expected probability of working in the future. The coefficient estimates suggest that the expected probability of future work rises by 4 points for

TABLE 2-4 OLS Regression Models on Cohort Differences

	Ages 51-56		Ages 57-61		Ages 68-72	
	Expected Retirement Age (1)	Prob. of Working in Future (2)	Expected Retirement Age (3)	Prob. of Working in Future (4)	Prob. of Working PT if Retired (5)	Prob. of Working in Future (6)
<i>Cohort dummies</i>						
CODA cohort	—	—	—	—	(ref. group)	(ref. group)
HRS-Early cohort	—	—	(ref. group)	—	3.503 (1.207)	2.944 (0.609)
HRS-Late cohort	(ref. group)	—	-0.030 (0.133)	(ref. group)	—	—
War Babies cohort	-0.467 (0.155)	(ref. group)	1.016 (0.163)	5.216 (1.293)	—	—
Early Baby Boom cohort	0.813 (0.154)	5.848 (1.938)	—	—	—	—
<i>Socioeconomic status</i>						
Years of education	0.119 (0.025)	1.521 (0.339)	0.159 (0.023)	0.977 (0.234)	0.821 (0.206)	0.359 (0.106)
Labor income last year (\$10,000)	0.008 (0.016)	1.012 (0.211)	-0.055 (0.022)	4.094 (0.422)	—	8.393 (0.667)
Household income last year (\$10,000)	-0.041 (0.011)	-0.225 (0.108)	0.013 (0.012)	-0.262 (0.109)	0.629 (0.128)	0.064 (0.079)
Total net nonpension wealth (\$10,000)	-0.002 (0.001)	-0.009 (0.016)	-0.001 (0.001)	-0.011 (0.006)	0.002 (0.004)	-0.012 (0.004)
Primary pension is DB	-2.127 (0.148)	—	-1.638 (0.143)	—	—	—
Primary pension is DC	-0.776 (0.155)	—	-0.858 (0.151)	—	—	—
<i>Demographics</i>						
Female	-0.706 (0.127)	-6.729 (2.122)	-0.666 (0.126)	-1.839 (1.362)	-4.529 (1.215)	-2.303 (0.612)
Black	-0.850 (0.169)	2.641 (2.593)	-0.400 (0.170)	-2.256 (1.744)	-1.345 (1.771)	1.665 (0.918)
Hispanic	-0.152 (0.233)	3.801 (3.012)	0.100 (0.240)	2.409 (2.269)	-5.740 (2.552)	-0.605 (1.182)

(cont.)

TABLE 2-4 (continued)

	Ages 51-56		Ages 57-61		Ages 68-72	
	Expected Retirement Age (1)	Prob. of Working in Future (2)	Expected Retirement Age (3)	Prob. of Working in Future (4)	Prob. of Working if Retired (5)	Prob. of Working in Future (6)
Asian/other	-0.427 (0.408)	12.838 (5.114)	0.674 (0.444)	-1.574 (4.233)	-1.618 (4.168)	-1.782 (2.168)
Separated/divorced	0.815 (0.178)	-4.129 (2.591)	0.922 (0.185)	3.437 (1.889)	2.354 (2.076)	2.879 (1.067)
Widowed	-0.032 (0.313)	-0.955 (4.578)	0.495 (0.235)	3.135 (2.265)	1.090 (1.661)	0.116 (0.793)
Never married	0.761 (0.314)	-3.455 (4.187)	0.040 (0.334)	5.710 (3.733)	-6.248 (3.366)	-0.577 (1.689)
<i>Health status</i>						
Poor health	-0.603 (0.459)	-21.377 (2.510)	-0.278 (0.415)	-10.453 (1.794)	-9.175 (2.068)	-2.166 (0.996)
Sum of major health conditions	-0.090 (0.064)	-4.159 (0.697)	-0.051 (0.055)	-2.026 (0.462)	-0.700 (0.437)	-0.661 (0.221)
R <sup>2</sup>	0.0816	0.1813	0.0893	0.1133	0.0373	0.0673
N	4,738	1,334	3,345	2,152	3,875	3,559

Source: Author's tabulations.

Notes: All in \$2004; labor and household income refer to previous calendar year. In column 5, household income excludes labor income. In models with pension coverage variables, the reference group is respondents with no pension coverage. Pension coverage refers to coverage on the current job. Models also include a constant and age dummies.

every \$10,000 earned in the previous calendar year. It makes intuitive sense that nonworkers who had recent labor income would report a higher probability of working again in the future.

Finally, in the last panel of Table 2.4, we offer results for the 68–72-year olds.<sup>11</sup> Column 5 examines partial retirement, and it shows estimates, from a linear probability model, of the percentage working part-time, conditional on having retired. The unadjusted cohort difference is 3.7 percentage points; after adding controls, the difference falls somewhat (to 3.5 percentage points) and remains statistically different from 0. As Figure 2.2 suggested, the fraction of respondents who are partially retired in this part of the life cycle is relatively low, thus the increase over time in the share of retired individuals who are working part-time is quite large—on the order of 33 percent. Since we control for health, marital status, and total net nonpension wealth, the difference is not simply due to later cohorts being in better health or greater financial need. Rather, it is possible that some unobserved component of preferences for work might be driving the difference. Consistent with this possibility, the estimates in column 6 confirm that the HRS-Early cohort reports a 52 percent greater chance of working in the future than the CODA cohort did at the same ages, and that controlling for SES, health and demographic characteristics does not much change the unadjusted differences in means reported in Table 2.3.

## **Discussion and Conclusion**

This study compares Baby Boomers' retirement expectations and patterns of early retirement with those of earlier cohorts. Our analysis of nationally representative data from the Health and Retirement Study suggests that Boomers are, indeed, different. They are characterized by a greater degree of labor force attachment in older age than are earlier cohorts; they expect to retire nearly one full year later than WBs; they are 14 percent more likely to expect to be working full-time at age 65, and they are 21 percent more likely to expect to work again in the future if they are not currently working. A rising unretirement trend among older cohorts supports this finding, and part-time work among the retired may be increasing as well, especially for older retirees in their late 60s.

Our regression models suggest that the greater labor force attachment expressed by more recent cohorts is not simply due to differences in health or SES. These results support those gleaned from an Roper (2002) study of older workers who found that Boomers born between 1946 and 1957 were more likely to report an interest in working part-time during retirement for the sake of interest or enjoyment, compared to an earlier cohort born during 1938–45. In addition, their sense of self-worth was more closely

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tied to work. Our findings and those suggest that the greater labor force attachment of the Early Boomers may be driven in part by noneconomic factors such as stronger preferences for work or perhaps even a stronger work ethic.<sup>12</sup>

An additional explanation for the observed cohort differences over time might be preferences for joint retirement. We have seen a rise in dual-earner couples over time, and it is possible that older spouses may expect to retire later or even work during retirement, if their younger spouse is still working.<sup>13</sup> Baby Boomers also differ from previous cohorts in other ways. Most notably, they do not face the same strong work disincentives through their employer pension plans as did earlier cohorts; they are more educated; they are wealthier; and they earn more. Yet these differences in SES do not fully explain the cohort differences. It may be that noneconomic factors, such as enjoyment of work, may ultimately distinguish the Boomers from earlier retiree cohorts.

Of some concern is our finding that the Early Boomers are more likely to underestimate their likelihood of survival to age 75 as compared to earlier cohorts. For example, the Early Boomers underestimate their survival probability by about 10 percent, compared to just 5 percent for the WBs. Moreover, this underestimation increases with age, as individuals fail to update their probability of surviving to age 75 with each additional year they live. One possible implication of this finding is that some Boomers may save less, or dissave more rapidly, than their life table survival probability warrants. This is a matter of concern to the extent that Boomers in the bottom half of the wealth distribution have relatively few assets.

## **Acknowledgments**

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## **Notes**

<sup>1</sup> For cross-cohort analyses of 51–56-year olds, we use data for the Early Boomers from the 2004 survey wave, data for the War Babies from the 1998 wave, and data for the HRS-Late cohort from 1992. For analyses of near-retirement behavior at ages 57–61, we compare the War Babies in 2004 with the HRS-Late cohort in 1998 and the HRS-Early cohort in 1992. For analyses of behavior at 62–67, we compare the HRS-Late in 2004 and the HRS-Early in 1998. For postretirement behavior at 68–72, we compare the HRS-Early in 2004 and the CODA cohort in 1998.

<sup>2</sup> Table 2A-1 shows how the partial and complete retirement rates presented here compare with alternative rates based completely on self-reported retirement data.

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Generally, partial retirement is more prevalent under the subjective definition (sometimes two or three times as high) for all cohorts. Accordingly the patterns across cohorts are similar under the two definitions. Rates of complete retirement are also similar under both definitions.

<sup>3</sup> The large  $p$ -value from an ANOVA test of differences in means confirms that these cohort differences are not statistically significant. We use a one-way ANOVA test of differences in means is appropriate when there are three or more independent groups being compared. It is analogous to the  $t$ -test, which can be used to test for differences in means when there are only two groups.

<sup>4</sup> The War Babies and Early Boomers have significantly higher fractions separated or divorced than the earliest cohort (HRS-Late), but the two cohorts are not statistically different from one another ( $t$ -test not reported).

<sup>5</sup> Major health conditions include (a) hypertension, (b) diabetes, (c) cancer (except of skin), (d) chronic lung disease (except asthma), (e) heart attack, coronary heart disease, angina, congestive heart failure, or other heart problem, (f) stroke, (g) emotional, nervous, or psychiatric problems, and (h) arthritis or rheumatism.

<sup>6</sup> Early Boomers also have the highest standard deviation of expected retirement age (not shown), which suggests more variation in retirement plans than for earlier cohorts.

<sup>7</sup> We use the NCHS Life Tables from 1992 for the HRS-Late, 1998 for the War Babies, and 2003 for the Early Boomers (2003 is the most recent Life Table available).

<sup>8</sup> Early Boomers underestimate their probability of surviving to age 80 by an even greater amount: the ratio of self-reported to life table probabilities is 0.86. It is not possible to compare expected survival to 80 across cohorts because the older cohorts were asked about survival to age 85, whereas the Early Boomers were asked about survival to age 80.

<sup>9</sup> The age distribution between 68 and 72 is skewed toward older ages for the HRS-Early relative to the CODA cohort. To equalize the age distributions when comparing cohort means, we trim the very youngest CODA respondents and the very oldest HRS-Early respondents. In the regression models, there is no need to trim as we control for differences in cohort age distributions with age dummies.

<sup>10</sup> We also examine whether the cross-cohort patterns are different for men and women by including a set of sex-cohort interaction terms (not shown). Using an  $F$ -test, the null hypothesis that the gender-cohort interaction terms are jointly equal to zero cannot be rejected, and thus cross-cohort patterns appear to be similar for men and women.

<sup>11</sup> As noted in the previous footnote, we use the untrimmed sample and include age dummies to control for cohort differences in the age distribution.

<sup>12</sup> Some recent studies predict that although Boomers will retire later and with higher retirement income than earlier cohorts, they will be less able to maintain their current standard of living (Butrica et al., this volume; Manchester et al., this volume).

<sup>13</sup> In an analysis not reported, we reestimated the model of expected retirement age in column 1 of Table 2.4 using married 51–56-year olds and including an indicator variable for whether both spouses were employed. We found that although married

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respondents with working spouses did expect to retire almost a half-year later, the estimated cohort differences remained largely unchanged.

## Appendix

TABLE 2A-1 Comparison of Current and Alternative Retirement Definitions

	<i>CODA</i>	<i>HRS-Early</i>	<i>HRS-Late</i>	<i>War Babies</i>	<i>EBB</i>	<i>ANOVA p-value</i>
<b>Ages 51–56</b>						
<i>Current definition (Table 2.1)</i>						
Partly retired			2.2	3.0	2.3	0.072
Completely retired			9.2	8.1	9.2	0.157
<i>Self-assessed retirement status</i>						
Partly retired			5.4	6.5	6.9	0.053
Completely retired			8.6	7.5	7.7	0.255
<b>Ages 57–61</b>						
<i>Current definition (Table 2.2)</i>						
Partly retired		4.6	5.9	6.4		0.005
Completely retired		20.6	20.2	22.5		0.039
<i>Self-assessed retirement status</i>						
Partly retired		9.6	11.2	12.6		0.001
Completely retired		20.9	20.7	22.2		0.303
<b>Ages 68–72</b>						
<i>Current definition (Table 2.3)</i>						
Partly retired	10.6	13.9				0.001
Completely retired	64.0	63.5				0.679
<i>Self-assessed retirement status</i>						
Partly retired	17.3	19.4				0.114
Completely retired	70.1	69.1				0.505

Source: Author's tabulations.

Notes: Under the 'Current Definition' respondents are classified as partially retired if they describe themselves as retired and they are working part-time (i.e. working less than 35 hours per week or less than 36 weeks per year), and completely retired if they describe themselves as retired and they are not working for pay. For the 'Self-Assessed Retirement Status' definition, rates are based on variable *RwSAYRET* in the RAND HRS data, Version F, where *w* stands for wave number.

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