# Retirement Outcomes in the Health and Retirement Study

*by Alan L. Gustman and Thomas L. Steinmeier**

*This study examines retirement outcomes in the first four waves of the 1992-1998 Health and Retirement Study (HRS). The article compares outcomes under alternative definitions of retirement, describes differences in outcomes among demographic groups, compares retirement dynamics based on self-reported retirement status, and compares retirement flows in the 1990s and 1970s and between cohorts of the HRS. Among other findings, measured retirement is seen to differ, sometimes substantially, with the definition of retirement used and among the various groups analyzed.*

*Alan L. Gustman is Loren Berry Professor of Economics at Dartmouth College. Thomas L. Steinmeier is Professor of Economics at Texas Tech University.

## Summary

This article examines retirement outcomes in the first four waves of the 1992-1998 Health and Retirement Study (HRS). Measured retirement is seen to differ, sometimes substantially, with the definition of retirement used and among various groups analyzed. Moreover, those differences vary with the wave of the survey as respondents age.

Retirement comprises a complex set of flows among states representing nonretirement, partial retirement, and complete retirement. Using the self-reported definition of retirement, 77 percent of transitions continue in the same or equivalent states between adjoining waves of the HRS, 17 percent involve a move from greater to lesser labor force participation, and 6 percent involve a move from lesser to greater labor force participation. Twenty-two percent of the sample report they were partially retired at some time in the first four waves, and by age 65, over a fifth of the population is partially retired. Altogether, 17 percent of the sample experienced a reversal in the course of the survey, moving from a state of less work to a state of more work. A comparison of retirement flows for men between the HRS and the 1969-1979 Retirement History Study (RHS) shows that the large spike in the population leaving nonretirement at age 65 observed in the 1969-1979 RHS has fallen from 18 to 11 percentage points in the HRS and that the share leaving nonretirement at 62 has increased from 13 to 20 percentage points over time.

The results presented here should help researchers improve their under,, standing of the structure of the depen,, dent variable in retirement studies. Incorrect or arbitrary measurement of the retirement variable may lead to a misunderstanding of how Social Security and related policies affect retirement outcomes. Thus, the improved understanding of retirement gained from this research will be helpful to those designing retirement policies as they attempt to understand the effects of those policies.

## Introduction

This article analyzes retirement outcomes in the first four waves of the 1992-1998 Health and Retirement Study (HRS). The article compares outcomes under alternative definitions of retirement, describes differences in outcomes among demographic groups, compares retirement dynamics based on self-reported retirement status,

and compares retirement flows in the 1990s and 1970s and between cohorts of the HRS.

A number of motivations exist for pursuing those topics. First, we would like to understand how the amount of retirement and, by implication, any estimated retirement equations depend on the definition of retirement a study adopts. The measures of retirement status include those based on self-reported status, on hours of work by week or by year, on whether the individual has remained in or has left a long-term job, on how the individual's earnings compare with earnings in the past, and on acceptance of retirement benefits. Each definition produces a different measure of retirement outcomes and retirement sequences found in the waves of the survey among the states of not retired (F), partially retired (P), and completely retired (R) and in flows among those states.

Second, it is of interest to explore differences in retirement outcomes among demographic groups. The analysis compares retirement outcomes and retirement flows for women and men and among blacks, whites, and Hispanics. It is especially interesting to document the situation in recent years, for example, to see how retirement patterns of women have evolved in view of the sharp changes in patterns of women's labor market participation.

Third, as a precursor to estimating retirement models, researchers should have a full understanding of the structure of the complex dependent variable that constitutes retirement behavior. Using the self-reported definition of retirement, this article describes the numbers of HRS respondents of different ages in each retirement category in each wave of the survey, the flows among various retirement states from one wave to the next, and the flows by age. Given time and space, a similar analysis could be conducted for the alternative measures of retirement described in the next section.

Fourth, it is of interest to determine how the relation between retirement outcomes and age has changed over time. Pension plans and Social Security have changed in many ways over the past two decades, and those changes influence retirement outcomes (Anderson, Gustman, and Steinmeier 1999). To isolate some of those changes, we compare retirement outcomes in samples of men between the HRS and the earlier Retirement History Study. We also compare outcomes for persons who were born from 1936 to 1941 with those of the War Babies cohort (born from 1942 to 1947).

The article:

- Analyzes the distribution of outcomes in each wave of the HRS using a number of different definitions of retirement;
- Compares outcomes by sex and race/ethnicity;
- Uses a self-reported definition of retirement to examine outcomes across the four waves of the survey;
- Reports the transition rates from one state to another and documents the many retirement patterns that are observed in the data;
- Presents a more detailed look at retirement by age; and
- Compares retirement outcomes of different cohorts of males—between samples from the 1969-1979 Retirement History Study and the 1992-1998 Health and Retirement Study and between HRS samples of comparable ages taken in 1992 and 1998 (the original HRS cohort and the new War Babies cohort).

## *Outcomes Under Alternative Definitions of Retirement*

In this section, we examine the distribution of respondents among various retirement categories in each wave of the HRS and describe how the measured retirement outcomes depend on the definition of retirement used.[1]

Retirement may be studied for a number of different reasons. Retirement status may be seen as a labor market outcome associated with withdrawal from the labor market or as a determinant of income in older age, since earnings are an important source of income for older individuals. It may also be defined in terms of receipt of retirement benefits, a concept of interest both to those running retirement programs and to the individual, since the date of claiming may affect subsequent benefits. Each of the different measures of retirement listed in Table 1 conveys information that is more or less useful to those interested in studying retirement for each of the different reasons.[2] Analysts who have estimated structural retirement models are interested in explaining the full sequence of outcomes observed in each wave of the survey. We describe those sequences in detail and then explain the hazards reflecting movement among retirement states.

A *self-reported measure* of retirement will provide insight into the decisionmaking of the respondent and into labor supply. Respondents who are working 1,500 hours but say they are partially retired may have reduced their hours of work, have left a previous full-time employer for self-employment, or be putting in less effort on this job than on a previous job. Respondents who are working 1,200 hours but say they are not retired may be employed in a 9-month job or working at the same steady rate as in the previous decade. Thus, the strength of using a self-reported definition is that it encompasses many dimensions of work that are often difficult to

measure. A weakness is that people have different internal standards for what divides nonretirement from partial retirement, so that two people may report different retirement states when filling the same job.

A second useful concept is *time at work*. Using that measure removes the vagaries created by the different concepts of retirement held by individuals when they report their self-perception of their retirement status. But that one definition does not standardize for other aspects of the retirement process, such as committing less energy to the job, working fewer hours, or having less responsi,, bility than in a previously higher effort.

A third, related concept is that of the *bridge job*—one that is held after a long-term job as the individual phases into retirement (Ruhm 1990). In some sense, the bridge job encompasses some of the aspects of the retirement process. It allows some individuals to reduce their labor market commitment—by reducing effort, working fewer hours, accepting self-employment, or in other ways reducing some dimension of labor supply. Empirically, it is difficult to measure when one is holding a bridge job. A new job held after changing from long-term employment is not necessarily a bridge job, and defining it as such will confuse turnover from a long-term job that takes place well before the individual is contemplating retirement with the process of phasing out of the labor market.

A fourth measure of retirement status relies on change in some measure of labor market activity, rather than level, to distinguish those who are in the process of leaving the labor market. Did the wage or hours of work decline from the previous job? Such changes may signal that retirement is in process. On the other hand, the changes in hours or wages may be involuntary, associated with changes in the current job, or resulting from job loss that had nothing to do with retirement.

A fifth measure of retirement has to do with claiming retirement benefits. Claiming benefits has a strategic component since the expected future value of benefits such as Social Security depend on when they are claimed (Gustman and Steinmeier 2001).

Each of these concepts of retirement has strengths and weaknesses, and some are more suitable for answer,, ing certain behavioral or policy questions than others. Which is the best definition of retirement depends on the question being asked. In many cases, using more than one definition of retirement will provide a more precise answer.

The data used to measure retirement status are from the Health and Retirement Study, a panel study initially fielded in 1992. The first wave of the sample included 12,652 individuals born from 1931 to 1941 and their spouses. The spouses who were born outside that range of birth years do not form a representative group of their cohorts and are therefore omitted from the results presented in this article. The respondents who were born within that range of birth years are commonly referred to as "age-eligible" respondents and are resurveyed every 2 years. The analysis covers the first four waves of the survey.

Outcomes under each of the alternative definitions of retirement status are reported for members of the age-eligible population in the HRS who answered the question

Table 1.
Alternative definitions of retirement

| Retirement definition | Not retired | Partially retired | Completely retired |
|---|---|---|---|
| Self-reported | Self-explanatory | Self-explanatory | Self-explanatory |
| Usual hours/week | 25+ hours | 1-24 hours | Not employed |
| Usual hours/year | 1,200+ hours | 1-1,199 hours | Not employed |
| Left 10+ year job | Still in 10+ year job held after age 45 | Working in another job | Not employed |
| Left 20+ year job | Still in 20+ year job held after age 45 | Working in another job | Not employed |
| Hourly wage | Usual wage 60% or more of maximum | Usual wage less than 60% of maximum | Not employed |
| Weekly earnings | Usual earnings 60% or more of maximum | Usual earnings less than 60% of maximum | Not employed |
| Social Security receipt | Not receiving Social Security | Not relevant | Receiving Social Security |

in the relevant wave of the survey (see Table 2).[3] Those outcomes are based on weighted data. Unweighted data yield similar results, but the weighted results are repre,, sentative of the sampled population, whereas the un,, weighted results oversample minorities and residents of Florida.

The self-reported retirement status is simply the answer to a straightforward question—does the respon,, dent consider himself or herself as not retired, partially retired, or completely retired? Table 2 indicates self-reported retirement status in the first and fourth waves of the survey and indicates the changes between those waves. For self-reported retirement (but not for the other definitions), there is a fourth category not explicitly mentioned in the question: namely, the respondent (or the interviewer) could indicate that the question was not relevant because the respondent did not work for pay, was a homemaker, or had not worked for pay in a number of years (10 years in wave 1, or 1 year in wave 4).[4] For that reason, the three retirement states listed in Table 2 do not sum to 100 percent, with the remainder being accounted for by the "question not relevant" response. Later, we discuss evidence that the "question not relevant" response is not very distinct from the "completely retired" response.

Over the four waves of the HRS, the share reporting that they are not retired (F) falls from 72 percent to 42 percent of age-eligible respondents, while the share reporting they are partially (P) or completely (R) retired each roughly doubles—from 6 percent to 13 percent for those reporting partial retirement, and from 12 percent to 27 percent for those reporting complete retirement. The share reporting that the question is not relevant rises from 10 percent to 18 percent between waves 1 and 4.

Retirement status is also indicated using the objective measures of retirement based on hours of work. Both objective measures—usual hours of work per week and usual hours per year (as measured by multiplying usual hours per week by usual weeks per year)—provide similar indications of retirement status. Thus, 62 percent of respondents are classified as not retired in wave 1 because they usually work 25 or more hours a week; and 60 percent are classified as not retired because they usually work 1,200 or more hours per year. Similar results are also found for partial and complete retirement in wave 1, with roughly 7 percent to 8 percent partially retired and 31 percent to 32 percent completely retired using either definition. The rates of nonretirement, partial retirement, and complete retirement change in the same way between the waves for each of the hours-based definitions of retirement.

However, in the retirement outcome categories, the objective, hours-based measures of retirement status suggest different numbers from those found with the self-reported retirement measure. Thus, the objective retirement measures suggest that fewer individuals are not retired, especially in wave 1, than the self-reported measures suggest. By wave 4, however, the self-reported and objective measures are indicating roughly the same population shares as not retired. Therefore, the objec,, tive, hours-based measures suggest that the flow out of full-time work from wave 1 to wave 4 is smaller than

Table 2.
Retirement outcome in waves 1 and 4 under alternative definitions of retirement (in percent)

| | Not retired | | | Partially retired | | | Completely retired | | | Sample size with complete data | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Retirement definition | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 |
| Self-reported | 71.5 | 42.3 | -29.2 | 6.3 | 12.7 | 6.4 | 12.3 | 27.3 | 15.0 | 9,297 | 7,307 |
| Usual hours/week | 61.9 | 41.0 | -20.9 | 7.0 | 9.9 | 2.9 | 31.1 | 49.0 | 17.9 | 9,297 | 7,266 |
| Usual hours/year | 60.1 | 40.0 | -20.1 | 8.1 | 10.6 | 2.5 | 31.8 | 49.4 | 17.6 | 9,297 | 7,221 |
| Left 10+ year job | 59.9 | 28.4 | -31.5 | 21.7 | 26.0 | 4.3 | 18.3 | 45.6 | 27.3 | 5,204 | 3,612 |
| Left 20+ year job | 63.8 | 27.6 | -36.2 | 17.9 | 23.6 | 5.7 | 18.2 | 48.8 | 30.6 | 2,720 | 1,825 |
| Hourly wage | 57.7 | 35.9 | -21.8 | 9.9 | 11.8 | 1.9 | 32.3 | 52.3 | 20.0 | 9,172 | 6,795 |
| Weekly earnings | 56.1 | 33.1 | -23.0 | 11.5 | 14.5 | 3.0 | 32.3 | 52.3 | 20.0 | 9,172 | 6,795 |
| Social Security receipt | 94.9 | 60.0 | -34.9 | n.a. | n.a. | n.a. | 5.1 | 40.0 | 34.9 | 9,226 | 7,265 |

SOURCE: Authors' calculations.

NOTES: Definitions of retirement outcomes are presented in Table 1. Sample exclusions for each table and wave are completely reported in Appendix Table 1. All results are weighted using the weights from wave 1. Percentages of those reporting not retired, partially retired, and completely retired do not sum to 100 because those answering "not relevant" are included in the population base. Data for waves 1 and 4 are for 1992 and 1998, respectively.

n.a. = not applicable.

when the self-reported measure is used. Notice that the share of the population completely retired is much higher according to the objective measures than to the self-reported measures because of the "question not relevant" category of the self-reported measure.

Retirement status is also defined according to whether one remains in, or has left, a long-term job. Thus, the basic populations for those measures (5,204 and 2,720, respectively, in wave 1) consist of those who, at one time or another, held a job for either 10+ years or 20+ years and were holding that job at age 45 or later. Those who have left that job are classified as retired if they are no longer working at all, or as partially retired if they are working in a different job.[5] Using the long-term employment definition, the fraction not retired is about the same in wave 1 as it is when the hours-based measures are used, with a slightly higher share not retired when the long-term job is defined as a 20+ year job rather than a 10+ year job. However, the share of the relevant population that is partially retired is considerably higher using the long-term job definition than it is with the other definitions; roughly a fifth of the population in wave 1, though working, are no longer in their long-term job. The share of the population completely retired is lower when the definition is based on long-term attachment than when it is based on usual hours of work. Retirement rates over the course of the panel are higher when retirement is measured by long-term attachment, especially when measured by the relative difference in the fraction who are completely retired between the first and fourth waves of the survey. Retirement rates might be higher with the 10+ and 20+ year definitions of retirement because respondents cannot move into the not retired category from the partially and completely retired categories.

Retirement is also measured by the relation between wage or usual earnings and maximum wage or earnings, with separate measures based on hourly wage and weekly earnings (Table 2). Those whose current earnings are 60 percent (or more) of their maximum past earnings are classified as not retired, those who are working but earn less than 60 percent of their maximum are partially retired, and those who are not working at all are completely retired.[6] Fewer are classified as not retired using the wage- or earnings-based measures of retirement status than using the hours-based measures. The difference widens from wave 1 through wave 4, so that the measure of the number flowing out of nonretirement between waves 1 and 4 is 1 to 2 percentage points higher when the wage- or earnings-based definitions are used. Rates of partial retirement are also a few percentage points higher using the wage- or earnings-based measures than when the self-reported and hours-based measures are used.

Lastly, when retirement status is based on Social Security receipt, the share not retired is substantially higher than under any other measure. In wave 1, none of the age-eligibles are old enough to receive Social Security benefits from their own work and can be receiving benefits only as a surviving spouse or because of their own or spouse's disability. Even by wave 4, when half the population is retired by any of the other objective measures in Table 2, only 40 percent of age-eligibles are receiving Social Security benefits.

### *Comparing Retirement Outcomes Under Alternative Definitions*

One can also compare retirement outcomes for the same population under alternative definitions. Table 3 presents two such comparisons.

The first comparison is a cross-tabulation of two measures: usual hours per week and self-reported retirement. (Those reporting "not relevant" were included in the completely retired category.) The percentages along the diagonal (from the upper left to the lower right) are instances in which the two measures agree, totaling about 82 percent of the observations. For the remaining observations, which are about one-sixth of the total, there is disagreement between the objective measure and the self-reported retirement status.

The other comparison of retirement outcomes is between a measure based on employment in a long-tenure job (10 years or more) and self-reported retirement. Agreement occurs in about 77 percent of the cases, so that almost a quarter of the outcomes are subject to disagreement between the objective and subjective measures of retirement. Most noticeable is that 14 percent of the observations involve individuals who have left a 10+ year job but classify themselves as not retired at all.

### *Constructing Hybrid Measures of Retirement*

Rather than limit their choices to one or another of these definitions, researchers may prefer to create hybrid definitions. We used one such hybrid definition in an earlier paper (Gustman and Steinmeier 2001). The hybrid measure combines information on self-reported status, hours, and changes in work commitment.

In the earlier paper, we classify individuals falling in different cells (Table 2 of that paper) into states of retirement, partial retirement, or full retirement using the following reasoning. Above the diagonal are cases in which the respondent is working more than would be expected with the self-reported retirement status. Since the respondent is working, classifying him or her as completely retired is probably not appropriate. However, an examination of numerous individual records suggests

that if the respondent indicates that he or she is partially or completely retired, there is usually a reason for the response even if the current hours are in the full-time range. For example, the respondent may have worked for 60 hours a week in previous jobs and is now working only 40 hours a week, or sometimes there is a noticeable drop in earnings, suggesting an easier job. Frequently, the work history contains a change of employer around the date the respondent says that he or she is partially or completely retired. In any case, it makes sense to treat respondents who are working but say they are partially or completely retired as though they are partially retired, since in most cases there is at least some evidence that they are not working as hard as they did at one time.

Below the diagonal are respondents who claim to be working more than the objective measures suggest. One cell contains respondents who claim to be not retired even though they are working less than 25 hours per week at their present job. To decide whether such individuals were not retired or were partially retired in our earlier paper, we looked at their previous jobs. If they had previous jobs with 25 hours of work or more, then there was evidence of a reduction of work effort, and the individuals were classified as partially retired. Otherwise, the respondents' claims that they were not retired at all were accepted. For the respondents who claimed to be not retired or partially retired but who did not have a current job, we looked to see whether they also claimed to be unemployed and how long ago their last job was. If they said they were unemployed but had a job within the previous 12 months, their self-reported status was accepted. But for the remainder of the respondents, who were the large majority of this group, the claim of not being retired was not accepted, and they were classified as being completely retired.

In short, it is possible to make a new definition of retirement status based both on objective hours and on subjective self-reports. By themselves, both measures have problems. Hours-based measures have problems with individuals who reduce work effort while still being above 25 hours and with individuals who have always worked less than 25 hours. Self-reports appear to be unreliable both with individuals who have jobs but say they are completely retired and with individuals who do not have jobs but claim to be not retired. The hybrid measure of retirement ameliorates these deficiencies.

### *Retirement Outcomes by Sex and Race/Ethnicity*

Men are more likely to be not retired than women; whites are more likely to be not retired than blacks or Hispanics (see Table 4). Difference in retirement rates by sex and race/ethnicity vary among the different definitions of retirement. While the differences between whites and blacks vary by a few percentage points across the different definitions, differences between men and women are much wider when "not retired" is defined as working more than 1,200 hours than when the other definitions are used.[7]

In considering the changes in the percentages reporting they are not retired, the differences in the numbers for the measures based on usual hours or weekly earnings are smaller than for those based on self-reports or Social Security receipt. Although the reduction in percent,, ages reporting not retired are ap,, proximately equal for blacks and Hispanics using the self-reported measure, the reductions are much lower for Hispanics than for blacks using the usual hours and weekly earnings measures. Blacks were 2 or 3 percentage points more likely to be not retired (as measured by hours or earnings) than Hispanics in wave 1, but by wave 4 the situation had reversed.

### *Retirement Dynamics*

The remaining discussion uses the self-reported definition of retirement

Table 3.
Objective vs. self-reported retirement status (as a percentage of total)

| | Self-reported | | | |
|---|---|---|---|---|
| Objective | Not retired | Partially retired | Completely retired [a] | Total |
| Usual hours per week [b] | | | | |
| 25 or more hours | 54.80 | 3.61 | 0.25 | 58.66 |
| 1-24 | 4.46 | 4.42 | 0.87 | 9.75 |
| Less than 1 | 5.41 | 3.36 | 22.81 | 31.58 |
| Total | 64.67 | 11.39 | 23.93 | 99.99 |
| Long-tenure job [c] | | | | |
| Still in long-tenure job | 48.21 | 2.64 | 0.15 | 51.00 |
| In another job | 14.05 | 4.90 | 0.77 | 19.71 |
| Not employed | 2.60 | 3.15 | 23.54 | 29.28 |
| Total | 64.85 | 10.69 | 24.46 | 100.00 |

a. Includes those reporting "not relevant."
b. Number of observations for the self-reported and hours-based measures are reported in Table 2.
c. Number of observations in the 10+ years sample are 5,204 (wave 1), 4,483 (wave 2), 4,014 (wave 3), and 3,611 (wave 4).

to explore retirement dynamics. Table 5 summarizes the wave-to-wave transition rates of the population between waves 1 and 2, waves 2 and 3, and waves 3 and 4. It includes only those respondents for whom a valid re,, sponse on retirement status was obtained in both waves.[8] Thus, on average, over the four waves, 49 percent of the sample begin in nonretirement and end in the same state.

Among respondents asked about their self-reported retirement status, 16.5 percent (9.5 + 12.0 - 5.0) answer, in one of two adjoining waves, that the question is not relevant. Respondents who do not work for pay, are homemakers, or have not worked for pay for 10 years in waves 1 or 2 (or 1 year in later waves) *may* be placed in the answer "not relevant" to the retirement status ques,, tion. However, it is not required that the "not relevant" category be used even if the respondent satisfies the criterion for that category.

Among the transitions in the four states, 71.0 percent involved continuing in the same state from one wave to the next: 48.8 percent reported being not retired between adjoining waves, 12.9 percent were retired, 4.3 percent were partially retired, and 5.0 percent reported that the question was not relevant in two adjoining waves.

The 71.0 percent figure may understate the number continuing in the same state. The reason is that for many respondents, the states of "completely retired" and "question not relevant" appear to be equivalent. In waves 1 and 2, the respondent is asked to report retire,, ment status as "question not relevant" if he or she does not work for pay, is a homemaker, or has not worked for 10 or more years. In subsequent waves, the respondent is asked to report retirement status as "question not relevant" if he or she does not work for pay, is a home,, maker, or has not worked for 1 or more years. Among those who answered "not relevant" in wave 1 and who reported either that they were completely retired or that the question was not relevant in wave 2, 40 percent switched their answer to completely retired. Accord,, ingly, users of the survey should be careful in how they handle persons responding "question not relevant." A number of individuals with that response will be indistin,, guishable from the retired population.

Considering the transitions for persons changing retirement status, 11.3 percent were following a simple retirement path—beginning as not retired and proceeding either to partial retirement (5.2 percent) or directly to complete retirement (6.1 percent).[9] Among the remain,, ing transitions, 2.4 percent began with partial retirement and proceeded to complete retirement. In addition, 2.8 percent went from not retired to "question not relevant," a state that is difficult to distinguish from complete retirement, and 0.9 percent went from partial retirement to "question not relevant." Altogether then, 17.4 percent of transitions were moving from a state of greater to lesser labor force participation.

The remaining 11.6 percent of transitions consist of two groups. In the first, 6.1 percent of the transitions were from a state of lesser to greater labor force participation and thus involved reversals: 1.8 percent moved from partial retirement to nonretirement, 0.5 percent from retirement to nonretirement, 1.5 percent from retirement to partial retirement, and 1.8 percent and

Table 4.
Percentage reporting they are not retired

| Sex and race/ethnicity | Self-reported | | | Usual hours per year | | | Weekly earnings | | | Social Security receipt | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 | Change | Wave 1 | Wave 4 | Change |
| All | 71.5 | 42.3 | -29.2 | 60.1 | 40.0 | -20.1 | 56.1 | 33.1 | -23.0 | 94.9 | 60.0 | -34.9 |
| Males | 77.1 | 46.8 | -30.3 | 72.2 | 49.4 | -22.8 | 62.4 | 38.3 | -24.1 | 94.8 | 62.8 | -32.0 |
| Females | 66.6 | 38.7 | -27.9 | 49.6 | 32.5 | -17.1 | 50.7 | 29.1 | -21.6 | 95.0 | 57.8 | -37.2 |
| All whites | 72.4 | 42.1 | -30.3 | 61.6 | 40.3 | -21.3 | 57.0 | 33.2 | -23.8 | 95.4 | 59.8 | -35.6 |
| Males | 78.0 | 46.7 | -31.3 | 74.3 | 49.7 | -24.6 | 63.7 | 38.5 | -25.2 | 95.2 | 62.8 | -32.4 |
| Females | 67.4 | 38.4 | -29.0 | 50.4 | 32.5 | -17.9 | 51.1 | 29.0 | -22.1 | 95.5 | 57.3 | -38.2 |
| All blacks | 66.0 | 41.3 | -24.7 | 53.2 | 36.7 | -16.5 | 52.7 | 30.8 | -21.9 | 91.8 | 59.7 | -32.1 |
| Males | 67.6 | 42.1 | -25.5 | 58.7 | 43.5 | -15.2 | 51.7 | 33.2 | -18.5 | 91.6 | 59.9 | -31.7 |
| Females | 64.9 | 40.8 | -24.1 | 49.2 | 32.6 | -16.6 | 53.4 | 29.3 | -24.1 | 91.9 | 59.5 | -32.4 |
| All Hispanics | 67.9 | 43.4 | -24.5 | 50.2 | 37.6 | -12.6 | 48.2 | 32.6 | -15.6 | 93.3 | 63.2 | -30.1 |
| Males | 78.6 | 52.4 | -26.2 | 65.7 | 51.0 | -14.7 | 59.3 | 40.9 | -18.4 | 92.8 | 65.3 | -27.5 |
| Females | 58.8 | 36.5 | -22.3 | 37.0 | 27.2 | -9.8 | 38.6 | 26.1 | -12.5 | 93.7 | 61.6 | -32.1 |

NOTE: See Table 2 for sample sizes and definitions. Data for waves 1 and 4 are for 1992 and 1998, respectively.

0.5 percent from "question not relevant" to not retired and to partially retired, respectively. The second group consists of the 5.5 percent of transitions between "not relevant" and retired.

Altogether then, about 71 percent of the transitions were continuations in the same state from one period to the next. Of the remaining 29 percent, about 17.4 percent were in the direction of lowering work effort, 6.1 percent were in the direction of increasing work effort, and the other 5.5 percent involved transitions between completely retired and "not relevant."

From what state did those observed in the final states come? About 92 percent of the transitions ending in nonretirement began with nonretirement, with the rest roughly equally divided between respondents who increased work effort from partial retirement and respon,, dents who previously reported that the question was not relevant (see the entry rates in Table 5). For transitions ending in complete retirement, the majority of the transi,, tions (55 percent) likewise began in complete retirement, almost 26 percent began in nonretirement, and the rest were roughly equally divided between those coming from partial retirement and those previously reporting a "not relevant" response.

Only a third (37 percent) of the transitions ending in partial retirement began in the same state. More (45 percent) were reductions in work effort from nonretirement, and an additional 13 percent were in,, creases in work effort from complete retirement. Among the completely retired, 55 percent are continuing in that state. Thirty-six percent (26 + 10) have reduced work effort from not retired and partially retired, and 9 percent of those reporting they were completely retired previ,, ously reported that the question was not relevant. Most respondents in that latter group came from either the same category (42 percent) or from the completely retired category (28 percent), which appears to be roughly equivalent for many respondents. Most of the rest (23 percent) came from the nonretirement category.

We also looked at the conditional probability of moving from the initial state to the final state (see the exit rates in Table 5). Most of the respondents who began as not retired stayed in that state (78 percent). Similar propor,, tions ended in partial retirement (8 percent) or complete retirement (10 percent), although an additional 5 percent moved to the "not relevant" category. Those in the completely retired category, however, tended to stay completely retired (71 percent) or moved to the roughly equivalent "not relevant" cat,, egory. Very few (3 percent) of them returned to the "not retired" category, although a few (8 percent) increased their work effort again to partially retired.

Among those initially indicat,, ing they were partially retired, 46 percent continued in that state, 35 percent moved to complete retirement or "not relevant," and 19 percent moved back to nonretirement work. These figures are consistent with findings from the 1969-1979 Retirement History Study.[10]

What happens to the respondents over time? Table 6 shows the most common sequences of retirement states in the survey. The sequences consist of four letters, one for each wave of the HRS that has been administered to date. The letters correspond to the four potential retirement states: not retired (F), partially retired (P), completely retired (R), and question not relevant (X). Thus, the sequence FRPX would indicate that the respon-

Table 5.
Self-reported retirement transitions between adjoining waves

| Final state | Initial state: Not retired | Partially retired | Completely retired | Question not relevant | Total |
|---|---|---|---|---|---|
| | *Frequency of transition* | | | | |
| Not retired | 0.488 | 0.018 | 0.005 | 0.018 | 0.529 |
| Partially retired | 0.052 | 0.043 | 0.015 | 0.005 | 0.115 |
| Completely retired | 0.061 | 0.024 | 0.129 | 0.022 | 0.236 |
| Question not relevant | 0.028 | 0.009 | 0.033 | 0.050 | 0.120 |
| Total | 0.629 | 0.094 | 0.182 | 0.095 | 1.000 |
| | *Entry rate from initial state* | | | | |
| Not retired | 0.922 | 0.034 | 0.009 | 0.034 | 1.000 |
| Partially retired | 0.452 | 0.374 | 0.130 | 0.043 | 1.000 |
| Completely retired | 0.258 | 0.102 | 0.547 | 0.093 | 1.000 |
| Question not relevant | 0.233 | 0.075 | 0.275 | 0.417 | 1.000 |
| | *Exit rate into final state* | | | | |
| Not retired | 0.776 | 0.191 | 0.027 | 0.189 | |
| Partially retired | 0.083 | 0.457 | 0.082 | 0.053 | |
| Completely retired | 0.097 | 0.255 | 0.709 | 0.232 | |
| Question not relevant | 0.045 | 0.096 | 0.181 | 0.526 | |
| Total | 1.000 | 1.000 | 1.000 | 1.000 | |

dent was not retired in the first survey, completely retired in the second survey, partially retired in the third survey, and reported that the question was not relevant in the fourth survey. There are four surveys and four possible responses in each survey, so there are 256 possible sequences. Table 6 reports the frequencies for the 53 sequences that had at least a 0.25 percent frequency. Those sequences represent 88 percent of the respon,, dents; the remaining 203 sequences account for only about 12 percent of the respondents. The table only includes respondents who gave a meaningful answer in all four waves; about 30 percent of the full sample either were not interviewed, were given proxy interviews (which did not ask the self-reported retirement status), or, in rare cases, refused to answer the question.

Unlike the data reported in the previous tables, the sequences shown in Table 6 allow us to answer questions about what happened to the respondents over time. For instance, according to the data in Table 2, 72 percent of the respondents were self-reported as not retired in wave 1, and 42 percent were self-reported as not retired in wave 4. Those findings might lead one to conclude that the 42 percent of the sample continued in the "not retired" category for the first four waves, but that would not be correct. In fact, the data in Table 6 suggest that only 35 percent were in the "not retired" category in all four waves and that 7 percent had been in some other category in at least one of the first three waves.

Adding the sequences for which the respondent reported partial retirement in at least one of the waves yields the conclusion that about 19 percent of the sample experienced partial retirement in at least one survey. That conclusion differs from the information in Table 2, where the percentage reporting they were partially retired never exceeded about 13 percent in any wave (even in waves 2 and 3, which are not reported in Table 2). The discrepancy, however, dovetails with the conclu,, sion drawn from our analysis of self-reported transitions between adjoining waves (Table 5). Those data suggest that the typical period of partial retirement is fairly short and that most of the respondents who were partially retired in wave 1 were not the same respondents who were partially retired in wave 4.

Altogether, 17 percent of the sample experienced a reversal during the survey, moving from a state of less work to a state of more work. Among the 72 percent of the sample who were not retired in the first wave of the HRS, 7 percent of the sample experienced a reversal of retirement status either by partially retiring or by retiring and then returning to nonretirement work. Among the 7 percent of the sample who indicated they were partially retired in wave 1, 3 percent of the sample experienced a reversal during the survey and were shown to be not retired at all sometime after wave 1. Among the 11 percent of the sample who were completely retired in wave 1, 3 percent of the

Table 6.
Most common self-reported retirement sequences (in percent)

| Rank | Sequence | Frequency | Rank | Sequence | Frequency | Rank | Sequence | Frequency |
|---|---|---|---|---|---|---|---|---|
| 1 | FFFF | 35.43 | 19 | FPRR | 0.80 | 37 | PPPR | 0.36 |
| 2 | FFFR | 5.44 | 20 | PRRR | 0.70 | 38 | RXXX | 0.34 |
| 3 | RRRR | 4.97 | 21 | RRXR | 0.68 | 39 | FFPX | 0.33 |
| 4 | FFRR | 4.32 | 22 | FXXX | 0.68 | 40 | FPFP | 0.32 |
| 5 | FFFP | 3.68 | 23 | FFRP | 0.65 | 41 | FRRP | 0.32 |
| 6 | FRRR | 2.99 | 24 | FPFF | 0.62 | 42 | PRRX | 0.32 |
| 7 | FFPP | 2.50 | 25 | XRXX | 0.62 | 43 | XXRR | 0.32 |
| 8 | XXXX | 2.00 | 26 | FFXF | 0.55 | 44 | XXRX | 0.30 |
| 9 | RRRX | 1.88 | 27 | XRRX | 0.53 | 45 | FFXR | 0.29 |
| 10 | FFFX | 1.38 | 28 | FPPF | 0.49 | 46 | PPFF | 0.29 |
| 11 | FFPR | 1.38 | 29 | FPPR | 0.49 | 47 | RPRR | 0.29 |
| 12 | FFXX | 1.22 | 30 | XRRR | 0.49 | 48 | PFPP | 0.27 |
| 13 | PPPP | 1.08 | 31 | FXFF | 0.49 | 49 | XFRX | 0.27 |
| 14 | FPPP | 1.05 | 32 | XFFX | 0.43 | 50 | PPFP | 0.27 |
| 15 | XFXX | 1.02 | 33 | XFFF | 0.40 | 51 | XPXX | 0.27 |
| 16 | FFPF | 0.98 | 34 | RRXX | 0.40 | 52 | FPRX | 0.26 |
| 17 | FFRX | 0.96 | 35 | PPRR | 0.39 | 53 | XXXR | 0.26 |
| 18 | FRRX | 0.95 | 36 | PFFF | 0.37 | | | |

NOTES: Retirement sequences are ranked according to the percentage of respondents who reported the sequence.

F = not retired; P = partially retired; R = completely retired; X = question not relevant.

sample indicated in either wave 2, 3, or 4 that they were partially retired or not retired. In addition, among the 10 percent of the sample who answered not relevant in wave 1, 5 percent experienced a reversal by wave 4.

### *Retirement by Age*

Our analysis of retirement status by age is based on a sample that includes all age-eligibles who gave a self-report on retirement status.[11] Starting around age 53, the proportion of males not retired begins to decline at roughly 3 or 4 percentage points per year until after age 61 (see Chart 1). Between 61 and 62, the decline is about 20 percentage points; and from 62 to 63, the proportion not retired declines about 2 percentage points. The population drops 6 percentage points from age 63 to 64 and 11 percentage points from age 64 to 65. Only 18 percent of 65-year-old males report themselves as not retired.

The proportion of men who report themselves as partially retired rises with age, exceeding a fifth of the population by age 65.

The proportion who are completely retired or who answer the question as not relevant account for those who are not "not retired" or partially retired. That proportion rises until, between ages 61 and 62, it jumps sharply from 30 to 43 percentage points. There is a 7-percentage-point jump between 63 and 64 and again between 64 and 65. At age 65, about 41 percent of the sample still reports they are partially retired or not retired.

The decline in the percentage of women who are not retired is also evident at age 54. There is a 14-point drop at age 62. At age 65, only 17 percent report they are not retired. Partial retirement rises continuously with age after age 55, reaching a peak of 15 percentage points at age 64. Women are three to four times as likely as men to answer that the retirement question is not relevant. The change in the question in waves 3 and 4 that allows the "not relevant" response if the respondent has not worked in the past year accounts for the increase in the number choosing "not relevant" at older ages. About 31 percent of the women in the sample are working at age 65—17 percentage points as not retired and 14 percent,, age points as partially retired.

The analysis indicates major differences in retirement outcomes reported by men and women. At any age, men are roughly 10 percentage points more likely to not be retired than are women, with the gap narrowing after age 61. Men are 2 to 5 percentage points more likely to be partially retired than women. The percentages of men and women who report complete retirement are similar, but women are around 15 percentage points more likely to report that the retirement question is not relevant, presumably because they have not worked in a number of years.

The analysis of retirement outcomes by age revealed no major differences between the waves of the survey; consequently we are not presenting separate numbers for each wave. In general, the fraction indicating that the question is not relevant increases across the waves, a change that is mirrored by a corresponding decline of a few percentage points in the share who report they are completely retired. That probably reflects the effect of the change in the qualification for the "not relevant" category in the question on self-reported retirement status from not having worked for 10 years in waves 1 or 2 to not having worked for a year in waves 3 and 4. The effect is modest, however.

### *Retirement Trends Among Cohorts*

It is useful to consider how retirement behavior differs among cohorts. In 1998, a new cohort was added to the Health and Retirement Study. That group, called the War Babies, was born from 1942 to 1947. Thus, at the time of the survey, the War Babies were 51 to 56 years old. Although that is a little young to permit us to discern trends in retirement, there are clues we can examine about what to expect from the new cohort. To put the retirement trends in longer-run perspective, we first compare findings from the original HRS cohort with findings from the Retirement History Study (RHS), a 10,, year panel study of men who were 58 to 63 years old in 1969. We then compare differences between cohorts within the HRS.

#### *Comparison Between the HRS and RHS*

The results of the comparison between the Health and Retirement Study and the Retirement History Study (RHS) are confined to men since the RHS did not include a representative sample of women.[12] The wording of the self-reported retirement questions is identical in the two studies. What is not identical is the skip pattern. In the HRS, the self-reported retirement question was never skipped except for proxy respon,, dents, but if the respondent did not work for pay, was a homemaker, or had not worked for 10 years (1 year in waves 3 and 4), the interviewer could (but was not forced to) record that the question was not relevant. Although wave 1 of the RHS formally had a "not relevant" category, very few observations fell in that category.[13] To make the responses as consistent as possible across surveys, the "not relevant" category in the HRS was pooled in the "completely retired" cat,, egory.

The major trends to early retirement are apparent in the data. At age 60, more than four-fifths of the RHS are still in the nonretirement category, compared with fewer than two-thirds of the males in the HRS (see the

Chart 1.
Retirement outcomes by age

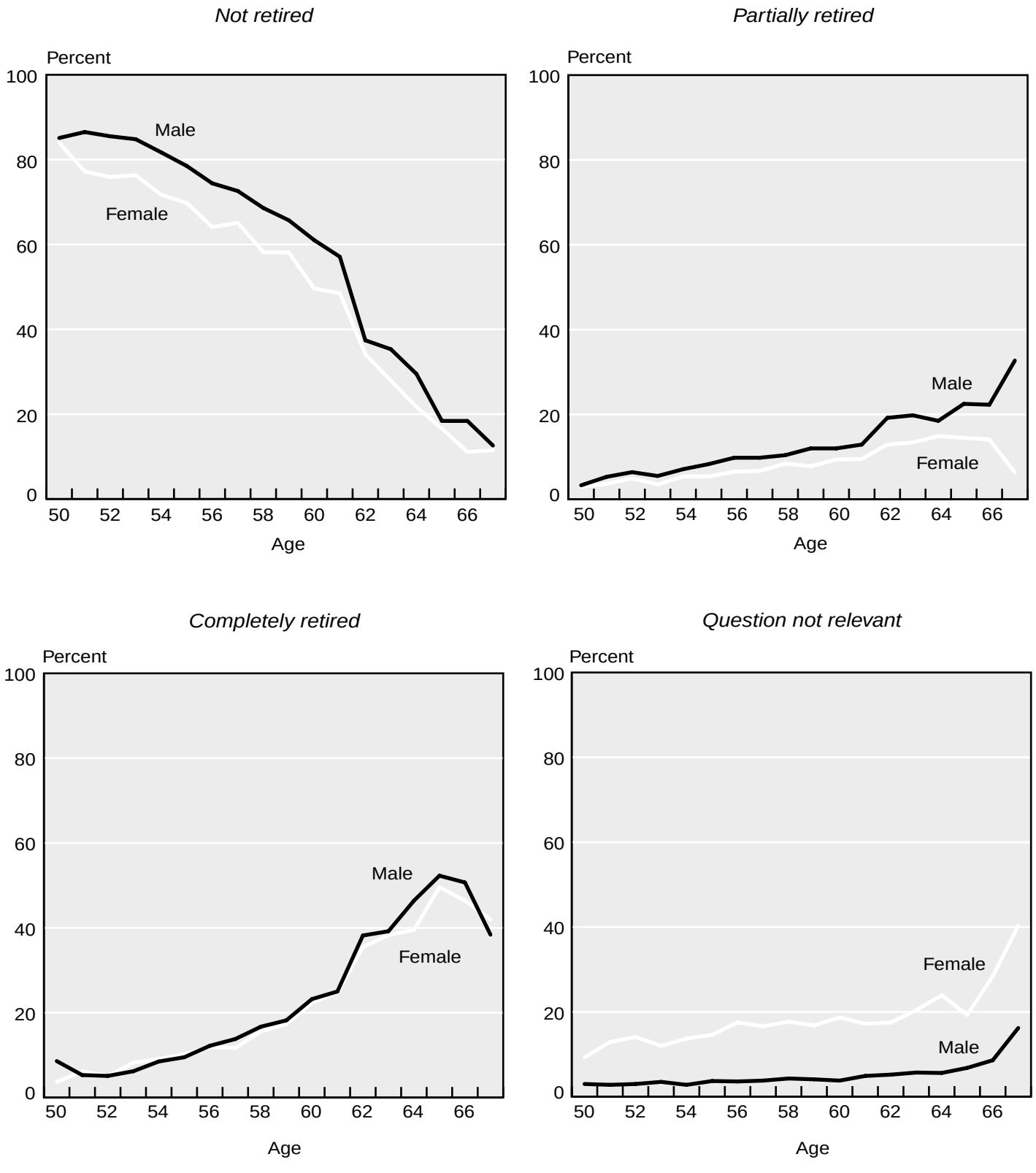
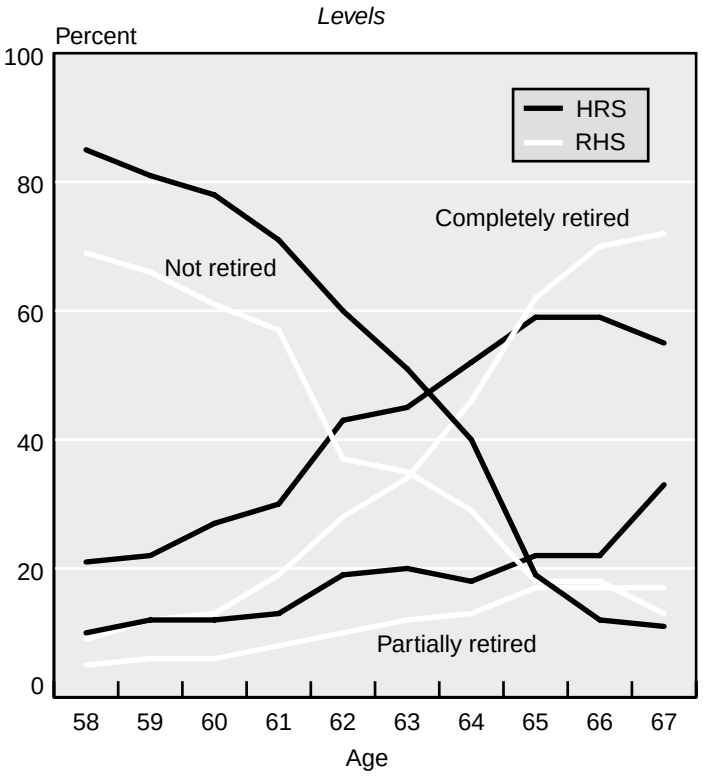
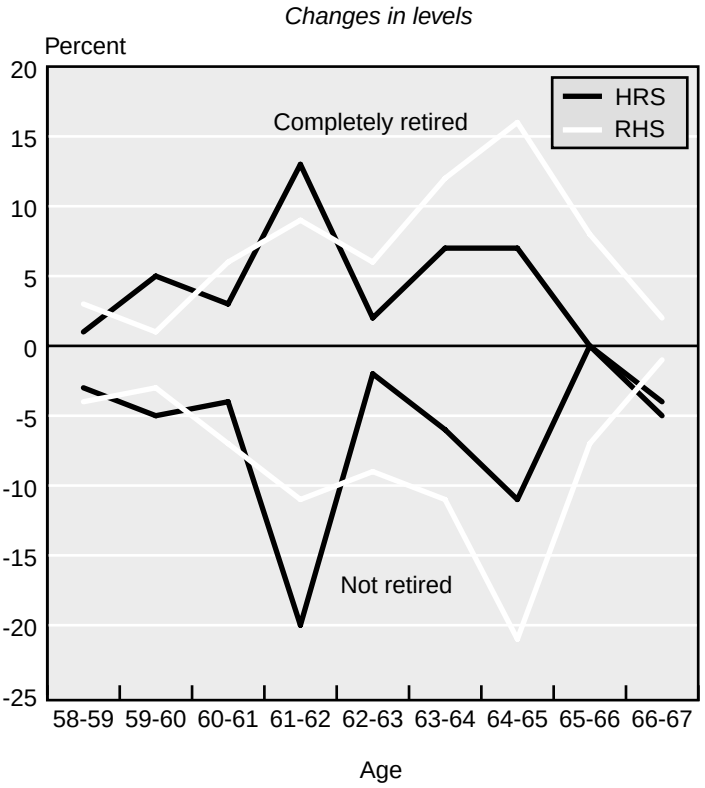


Chart 2.
Comparison of the Retirement History Study and the Health and Retirement Study




top panel of Chart 2). At age 62, 64 percent of the RHS sample had not retired at all three decades ago, while only little more than a third of the HRS sample are in a similar status in the 1990s. Only at age 65 do the two samples approach each other.

Not all those who have left nonretirement have left the labor force. At all ages, the proportion who are partially retired in the HRS sample lies well above the fraction found to have been partially retired in the RHS.

Despite the larger number who are partially retired in the HRS, only through age 65 does the number retired (the sum of the number retired plus those reporting "not relevant" in the HRS) exceed the comparable retirement rate in the old RHS.

The trend to earlier retirement is readily apparent in the second panel of Chart 2, which reports, by age, the proportion of the sample changing retirement status. There was a very large spike in retirement in the RHS at age 65, with almost one-fifth of the sample leaving nonretirement. In the HRS, the comparable spike at 65 is a little more than half as large, but one-fifth of the HRS sample leaves nonretirement at age 62. Thirteen percent enter complete retirement between ages 61 and 62 in the HRS, compared with only 9 percent in the RHS.

The retirement literature suggests that lack of employer-provided retiree health insurance and availability of Medicare eligibility at age 65 are major factors shaping retirement behavior. Nevertheless, the declines in nonretirement at 62, 63, and 64 have dropped by half, and the spike in the number who completely retire at age 65 has almost disappeared. That observation raises ques,, tions about the importance of Medicare eligibility and absence of employer-provided retiree health insurance in promoting a spike at age 65 in retirement rates.

### *Comparing Those Aged 51 to 56 in the HRS with the War Babies*

Although the War Babies are a little young to have retired in great numbers, we can ask how they differ from those who were 51 to 56 in the initial year of the HRS. Table 7 compares 51- to 56-year-olds in the two cohorts on a number of variables that will certainly influence retirement outcomes. Despite a number of similarities between the cohorts, one major difference is that the share of women aged 51-56 in the nonretirement category is significantly higher in the War Babies cohort. Another major difference is the sharp decline in the proportion of both men and women covered by defined benefit pension plans. The influence of a third difference will not be apparent until the War Babies reach their mid-sixties. The average Social Security normal retirement age (NRA)

Table 7.
Comparison of persons aged 51-56 in 1992 (original HRS cohort) and in 1998 (War Babies)

| | Males | | Females | |
|---|---|---|---|---|
| | Original HRS cohort | War Babies | Original HRS cohort | War Babies |
| Not retired (percentage working 1,200 hours or more) | 78.2 | 78.1 | 54.7 | 62.4 |
| Percentage employed with pension | 74.2 | 74.3 | 63.6 | 64.2 |
| With DB plan, DC plan, or both | 71.7 | 66.0 | 66.3 | 61.9 |
| With DB plan only | 39.1 | 27.6 | 44.1 | 30.3 |
| Average Social Security retirement age | 65.28 | 65.97 | 65.28 | 65.97 |

NOTES: The sample size of the original Health and Retirement Study cohort, born from 1936 to 1941 and aged 51-56 in 1992, is 5,592. The sample size of the War Babies, born from 1942 to 1947 and aged 51-56 in 1998, is 2,529.

DB = defined benefit; DC = defined contribution.

is higher for the War Babies cohorts than it is for the original HRS cohorts. The reason is that starting with cohorts born in 1938, NRA rises gradually until it reaches age 66 for cohorts born in 1943. The changes in both pensions and Social Security may lead to some delay in retirement for the War Babies cohort.

## *Conclusions*

Although the importance of particular retirement flows have changed from the late 1970s, the retirement variable remains extremely complex: partial retirement continues to be very important; a large number of different retire,, ment flows are observed across the first four waves of the HRS; measured retirement is seen to differ with the definition of retirement used, with the precise wording of questions, and among various groups analyzed. Given the complexity of the retirement variable, modeling the full set of retirement outcomes will remain a difficult chal,, lenge.

Our findings indicate that researchers will want to choose the measure of retirement they use on the basis of the particular aims of their study. The retirement outcomes differ, sometimes sharply, with the definition chosen. We have discussed the strengths and weaknesses of the alternative definitions. We have also suggested at least one kind of hybrid definition that may be attractive to researchers, comprising the key pieces of information from a number of different definitions.

## *Notes*

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[1] Gustman, Mitchell, and Steinmeier (1995) examine the sensitivity of the rate of retirement to the measure of retirement used in wave 1 of the Health and Retirement Study. That study focused on a limited sample of those in wave 1. The present study expands that analysis along a number of dimensions: it looks at retirement through wave 4, by which time a much larger percentage of the sample has retired, and at the changes and dynamics of the retirement process.

[2] Retirement models include health status, involuntary layoff, and many other reasons in explaining retirement outcomes (see, for example, Gustman and Steinmeier 2001). Thus, both unemployment and disability may be related to retirement, but they will be related differently to each of the concepts of retirement examined here.

[3] Sample exclusions are reported in Appendix Table 1. Age-ineligibles and an overlap group with a spouse who fell into the HRS age range but was incorporated into the Asset and Health Dynamics Among the Oldest Old survey are excluded from all waves. Attritors and those whose survey is answered by a proxy respondent are excluded only from the waves in which a respondent survey is not available. Appendix Table 2 reports the same statistics as in Table 2 except that attritors and those with proxy responses are excluded from all waves, even waves in which a response is available.

[4] More specifically, the percentage of respondents who were in the "question not relevant" category was 9.9 percent in wave 1 and 17.7 percent in wave 4. In waves 2 and 3, the percentages were 7.3 percent and 11.8 percent, respectively.

[5] The measure of retirement based on having left a long-term job reported in this article classifies those who left a job of 10 or 20 years' duration after age 45 as partially retired even if they are working full time and even if they are in a current job that also lasts 10 or 20 years.

[6] The maximum wage (or earnings) is calculated for wave 1 using the wages reported in sections F, G, and H. After wave 1, all wages in waves up to and including that wave are also included in calculating the maximum wage. Thus for wave 4, the maximum wage includes all observed wages reported in the past and for wave 1, plus the current wages observed in waves 2, 3, and 4. The calculated maximum wage used in computing retirement status does not look forward, only backward. Because we do not observe wages continuously, this "maxi,, mum" wage (or earnings) may not actually be the individual's highest wage, but it should be close if wages are generally increasing in any particular job.

[7] These findings are based on a minimum of 2,211 observa,, tions for white males, 2,804 for white females, 383 and 684 for black males and females, and 240 and 340 for Hispanic males and females.

[8] About 10 percent of those who gave a valid response in one wave did not do so in the following wave, mostly because they were either not interviewed or had a proxy respondent. Of that group, 61 percent were not retired in the first interview, 8 percent were partially retired, 20 percent were completely retired, and 12 percent said the question was not relevant.

[9] The finding that movements to retirement involve a disproportionate share of transitions directly from nonretirement straight to complete retirement is consistent with earlier work, but the share of those "bang-bang" transitions is lower in these data than in the Retirement History Study (Gustman and Steinmeier 1984). However, the RHS group was much older than the HRS sample. For another analysis of retirement flows in the RHS, see Blau (1994). Most of Blau's work focuses on transitions among states between waves. Our work has been designed to explain the sequences of retirement outcomes observed across waves of the survey. Since hazards can be constructed from the sequences in retirement outcomes, we have focused on those sequences in Table 6.

[10] Using data from the 1969-1979 Retirement History Study, Gustman and Steinmeier (1984) found that the simple 2-year continuation rate in partial retirement was 0.485.

[11] The sample sizes for males at the various ages are as follows:

| Age | Observations | Age | Observations |
|---|---|---|---|
| 50 | 111 | 59 | 1,457 |
| 51 | 450 | 60 | 1,438 |
| 52 | 579 | 61 | 1,286 |
| 53 | 903 | 62 | 1,039 |
| 54 | 954 | 63 | 836 |
| 55 | 1,213 | 64 | 626 |
| 56 | 1,316 | 65 | 487 |
| 57 | 1,565 | 66 | 301 |
| 58 | 1,480 | 67 | 134 |

Sample sizes for females are generally about 10 percent to 20 percent higher.

[12] For additional evidence on the trends to earlier retirement, see Anderson, Gustman, and Steinmeier (1999) and Friedberg (1999). In addition to evidence from the Current Population Survey, Friedberg compares outcomes between the RHS and HRS. The first draft of our paper, containing the comparisons reported here, was completed before we became aware of her work.

[13] In the RHS, the question of self-reported retirement status was skipped in wave 1 if the respondent never worked or had not worked in 20 years. In other years, that question was asked of everyone. However, the number actually skipped in wave 1 is less than half of 1 percentage point of the sample. The results we report for the RHS exclude that small group.

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Appendix Table 1.
Sample exclusions by table

| | Tables 2-4 and 7 | Table 5 | Table 6 and Appendix Table 2 |
|---|---|---|---|
| Age-ineligibles and overlaps | Not included in any wave | Not included in any wave | Not included in any wave |
| Attritors and proxies | Not included in any wave in which the interview is not available or was obtained from a proxy respondent | Not included if the interview is not available or was obtained from a proxy respondent in either wave | Excluded from all waves if the interview is not available or was obtained from a proxy respondent in any wave |
| | Potentially included in other waves | Potentially included in other waves | |

Appendix Table 2.
Retirement outcomes in waves 1 and 4 under alternative definitions of retirement, excluding attritors and proxies from both waves (in percent)

| | Not retired | | Partially retired | | Completely retired | | Sample size with complete data | |
|---|---|---|---|---|---|---|---|---|
| Retirement definition | Wave 1 | Wave 4 | Wave 1 | Wave 4 | Wave 1 | Wave 4 | Wave 1 | Wave 4 |
| Self-reported | 72.2 | 41.9 | 6.6 | 12.9 | 11.4 | 27.3 | 6,671 | 6,653 |
| Usual hours/week | 63.0 | 40.8 | 7.6 | 10.2 | 29.4 | 49.0 | 6,671 | 6,614 |
| Usual hours/year | 61.2 | 39.7 | 8.6 | 10.9 | 30.1 | 49.4 | 6,671 | 6,572 |
| Leaving 10+ year job | 60.0 | 28.6 | 22.7 | 26.0 | 17.2 | 45.4 | 3,754 | 3,489 |
| Leaving 20+ year job | 64.0 | 27.9 | 19.1 | 23.8 | 16.9 | 48.4 | 1,951 | 1,777 |
| Hourly wage | 59.0 | 35.0 | 10.1 | 12.6 | 30.9 | 52.3 | 6,595 | 6,189 |
| Weekly earnings | 57.4 | 33.1 | 11.7 | 15.6 | 30.9 | 52.3 | 6,595 | 6,189 |
| Social Security receipt | 95.4 | 60.5 | n.a. | n.a. | 4.6 | 39.5 | 5,986 | 5,981 |

SOURCE: Authors' calculations.

NOTES: Definitions of retirement outcomes are presented in Table 1. All results are weighted using the weights from wave 1. Percentages of those reporting not retired, partially retired, and completely retired do not sum to 100 because those answering "not relevant" are included in the population base. Sample sizes differ between the waves only because of "don't knows", refusals, or incomplete data.

n.a. = not applicable.