RETIREMENT OUTCOMES IN THE HEALTH AND
RETIREMENT STUDY

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ABSTRACT

This study examines retirement outcomes in the first four waves of the Health and Retirement Study. Measured retirement is seen to differ, sometimes substantially, with the definition of retirement used and among various groups analyzed. Moreover, these differences vary with the wave of the survey as respondents age. Retirement is comprised of a complex set of flows among states representing full time work, partial retirement and complete retirement. Seventy seven 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 states of 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, 14 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. Comparing retirement flows for men between the HRS and the 1969-1979 Retirement History Study, the large spike in the population leaving full time work at age 65 observed in the RHS is reduced to half its original size in the HRS, while the share leaving full time work at age 62 has almost doubled over time. The results presented here should help researchers to improve their understanding of the structure of the dependent variable in retirement studies.

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This paper analyzes retirement outcomes in the first four waves of the Health and Retirement Study (HRS). We have a number of motivations for pursuing this topic.

First, we would like to understand how the amount of retirement, and by implication any estimated retirement equations, depend upon the definition of retirement a study adopts. There are many different measures of retirement status, from measures based on self reported status, to measures based on hours of work by week or by year, to indicators of whether the individual has remained in or has left a long term job, to measures based on how the individual's earnings compare to earnings in the past, to indicators based on acceptance of retirement benefits. Each definition produces a different measure of retirement outcomes, and of flows between waves of the survey among the states of not retired (full-time work, F), partially retired (P) and completely retired (R).

Second, it is of interest to explore differences in retirement outcomes among demographic groups. Comparisons are made between 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, 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, we 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 paper describes the numbers of HRS respondents of different ages falling 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.

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 these changes influence retirement outcomes (Anderson, Gustman and Steinmeier, 1999). To isolate some of these changes, we compare retirement outcomes in samples of men between the HRS and the earlier Retirement History Study.

Section 2 analyzes the distribution of outcomes in each wave of the HRS using a number of different definitions of retirement. Section 3 compares outcomes by race, ethnicity and gender. Using a self reported definition of retirement, Section 4 examines outcomes across the four waves of the survey. Section 4 also reports the transition rates from one state to another, and documents the many retirement patterns that are observed in the data. In Section 5 we take a more detailed look at retirement by age. Section 6 compares retirement outcomes of different cohorts of males: between samples from the 1969-79 Retirement History Study and the 1992-98 Health and Retirement Study and between HRS samples of comparable age taken in 1992 and 1998, the original HRS cohort and the new "warbabies" cohort.

II. Outcomes Under Alternative Definitions of Retirement

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

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[1]Gustman, Mitchell and Steinmeier (1995) examines the sensitivity of the rate of retirement to the measure of retirement used in wave 1 of the Health and Retirement Study. In this section we examine the sensitivity of measured retirement to the definition of retirement used in each of the first four waves of the HRS, and also consider how retirement dynamics are affected by the definition of

Alternative definitions of retirement are given in Table 1. Outcomes under each of the alternative definitions of retirement status are reported in Table 2 for the age eligible population in the HRS, those born from 1931 to 1941, who answered the question in the relevant wave of the survey.[2]

Line 1 of Table 2 indicates self reported retirement status in each of the four waves of the survey. Notice that in line 1, the probabilities of falling in each of the three retirement states, not retired at all (F), partially retired (P) and completely retired (R), do not add up to 1.0. Rather, there is a fourth outcome in the HRS question on self reported retirement status, question not relevant (because the individual indicates he or she does not work for pay, is a homemaker, or hasn't worked for pay, in 10 years or more in wave 1, or in one year or more in waves 2 through 4).[3]

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retirement used.

[2]Sample exclusions are reported in Appendix 1. Age ineligibles and an overlap group with a spouse who fell into the HRS age range, but was incorporated into the AHEAD 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 2 reports the same statistics as in Table 2 where attritors and those with proxy responses are excluded from all waves, even those waves where a response is available.

[3]More specifically, the number of respondents who chose the four retirement categories in each wave of the survey are indicated in the following table:

Number of Respondents by Wave Reporting Retired, Partially Retired, Completely Retired or Question Not Relevant*

	Not Retired	Partially Retired	Completely Retired	Question Not Relevant
Wave 1	6548	575	1155	1019
Wave 2	5219	801	1564	681
Wave 3	4026	887	1878	1037

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Over the four waves of the HRS, the share reporting they are not retired at all (F) falls from 72 percent to 42 percent of age eligible respondents, while the shares reporting they are partially or completely 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 they are completely retired. Thus 10 percent of the age eligibles report the retirement status question is not relevant in wave 1, 7 percent report it is not relevant in wave 2, 12 percent report the question to be not relevant in wave 3, and 18 percent report it is not relevant in wave 4.

Lines 2 and 3 of Table 2 report retirement status using objective measures of retirement based on hours of work. Both objective measures, usual hours of work per week and usual hours per year, provide similar indications of retirement status. Thus 62 percent of respondents are classified as not retired in wave1 because they usually work 25 or more hours a week; while 60 percent are classified as not retired in wave 1 because they usually work 1200 or more hours per year. Similar results are also found for partial and complete retirement in wave 1 with the two hours based definitions of retirement, with roughly 7 to 8 percent partially retired and 31 to 32 percent completely retired using either definition. The rates of nonretirement, partial and complete retirement change the same way between the four waves for each of the hours based definitions of retirement.

However, the objective measures of retirement status based on hours of work suggest different numbers falling in the different retirement outcome categories from those found with the self

| Wave 4 | 3102 | 897 | 1958 | 1350 |

*The counts in this table are unweighted. Results in the text use weights from wave 1.

reported retirement measure. Thus the objective retirement measures suggest there are fewer

individuals who are not retired, especially in wave 1, than are suggested by the self reported

retirement measures. By wave 4, however, the self reported and objective measures are indicating

roughly the same population shares as not retired. Therefore, the objective, hours based measures

suggest that the flow out of full time work from wave 1 to wave 4 is smaller than when the self

reported retirement measure is used. Notice that the share of the population completely retired is

much higher according to the objective than the self reported measures. The difference is that, for the

subjective retirement variable, there is a fourth category, "Not Relevant", while there are only three

categories when the objective hours definitions of retirement are used. We further analyze the "Not

Relevant" category in the self reported data after completing our discussion of Tables 2 and 3.

Rows 4 and 5 of Table 2 define retirement status according to whether one remains in, or has

left a long term job. Thus the basic populations for these measures, 5204 and 2720 respectively in

wave 1 for the two measures, consist of those who, at one time or another, held a job for either 10+

years or 20+ years. Those who have left that job are classified as retired if they are no longer

working after having left their long term jobs, or as partially retired if they are working after having left

a long term job.[4] Using the long term employment definition, the fraction not retired is about the same

in wave 1 as it is when the hours measures are used, with a slightly higher share not retired when long

term job is defined as a 20+ year job rather than a 10+ year job. However, the share of the relevant

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[4]The measure of retirement based on having left a long term job reported in this paper
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.

population that is partially retired is higher using the long term job definition, since in wave 1, roughly a fifth of the population, while working, is no longer in their long term job.[5] Very wide differences in the rate of partial retirement are also apparent when the self reported or hours based rates of partial retirement are compared with the rates estimated on the basis of having left a long term job. The share of the population fully 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 fully retired between the first and fourth waves of the survey.

The next two rows of Table 2 measure retirement by the relation between usual earnings and maximum earnings, with separate measures based on hourly wage and weekly earnings. Those who are earning 60 percent or more than the maximum they earned in the past are classified as not retired, those who are working but earn less than 60 percent of the maximum recorded are partially retired, and those not working at all are fully 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

[5]Ruhm (1990) calls jobs held after leaving long term jobs "bridge jobs". One criticism of the concept of "bridge jobs" is that it mixes turnover from long term jobs, which may be observed for a variety of reasons having nothing to do with retirement behavior, with the process of phasing out of the labor market. Those in bridge jobs may be supplying a full year's effort on a job they held after leaving their long term job, with some having left their long term job well before they were contemplating retirement.

[6]The maximum wage is calculated for wave 1 using the wages reported in sections F, G and H. After wave 1, all wages in waves up and including that wave are also included in calculating the maximum wage. Thus for wave 3, the maximum wage includes all observed wages reported in the past and for wave 1, plus the current wages observed in waves 2 and 3. The calculated maximum wage used in computing retirement status does not look forward, only backwards.

widens from wave 1 through wave 4, so that the measure of the number flowing out of full time jobs between waves 1 and 4 is a few 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 of partial retirement than when the self reported measures 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 own work, and can be receiving benefits only as a surviving spouse or due to 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 in receipt of social security benefits.

III. Retirement Outcomes by Gender, Race and Ethnicity

Table 3 reports the probability of being not retired by gender, race and Hispanic origin. Four of the definitions of retirement from Table 2 are used.

Men are more likely to be not retired than women; Whites are more likely to be not retired than Blacks or Hispanics. Difference in retirement rates by gender, race and 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 1200 hours, than when not retired is defined

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on the basis of the other definitions.

IV. Retirement Dynamics

All of the remaining tables use the self reported definition of retirement to explore retirement dynamics. Table 4 measures the shares of the observations for the population transiting from the states indicated in the column heads in one wave, to the states indicated in the row heads in the next wave. This table summarizes the wave to wave transition rates between waves 1 and 2, waves 2 and 3, and waves 3 and 4. Thus on average, over the four waves, 38 percent of the sample begin in nonretirement and end in the same state.

Table 4A includes 'not available' as an additional state, with 21.6 percent of responses not available in one wave or the other (12.6 + 19.0 - 10.0). Observations are included in the not available category for a number of reasons: if the respondent refused to answer or answered don't know; if their survey instrument was answered by a proxy respondent, who then, following the skip pattern of the survey, would not have been asked to report the respondent's retirement status; or if the respondent was not interviewed in the wave, having attrited temporarily or permanently from the sample.

Among respondents asked about their self reported retirement status, 14.3 percent (8.4 + 9.8 - 3.9) answer, in one of two adjoining waves, that the question is not relevant Respondents who don't work for pay, are homemakers, and haven't worked for pay for ten years in wave 1, or one year in later waves, may answer not relevant to the retirement status question.

Table 4B rescales the data in Table 4A. It excludes the not available answers from the

denominator and recomputes the remaining probabilities for the 78.5 percent of the transitions among

the states of not retired, partial retirement, complete retirement and not relevant so that they add up to

100 percent. Among those transiting through the remaining four states: 49 percent continue between

adjoining waves as not retired in each; 4.3 percent report they were partially retired in two adjoining

waves; 12.9 percent report they were retired in adjoining waves; and 5.0 percent report the question

was not relevant in two adjoining waves. Consequently, 71.0 percent of transitions involved

continuing in the same state from one wave to the next.

Considering the transitions for those 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).[7] Among the remaining 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 full retirement.[8]

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[7]The finding that movements to retirement involve a disproportionate share of transitions directly from full time work straight to complete retirement is consistent with earlier work, but the share of these "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.

[8]For many respondents, the states of "completely retired" and "question not relevant" appear to be equivalent. In wave 1 the respondent is asked to report retirement status as "question not relevant" if the respondent does not work for pay or is a homemaker, or has not worked for ten or more years. In subsequent waves, the respondent is asked to report retirement status as question not relevant if the respondent does not work for pay or is a homemaker, or has not worked for one or more years. Despite these instructions, among those who indicated they were completely retired in wave 1, and reported they were either completely retired or the question was not relevant in wave 2, most continued to report in wave 2 that they were completely retired. However, among those who reported the question was not relevant in wave 1 and who reported either that they were completely retired or the question was not relevant in wave 2, forty percent switched their answer to completely retired. Accordingly, users of the survey should be careful in how they handle those responding

Another 0.9 percent went from partial retirement to question not relevant.[9] Altogether then, 17.4 percent of transitions were moving from a state of greater labor force participation to a state of lesser labor force participation.

The remaining 11.6 percent of transitions consist of two groups: 6.1 percent of the transitions were from a state of lesser labor force participation to a state of greater labor force participation, and thus involved reversals; with 1.8 percent involving a move 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 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, while 6.1 percent were in the direction of increasing work effort, with the other 5.5 percent involving transitions between completely retired and not relevant.

Table 5 asks a slightly different question from Table 4. Among those observed in the final states indicated in the row heads, what states did they come from?

About 89 percent of the transitions ending in nonretirement began with nonretirement; 3.4 percent involved an increase in work effort from partial retirement; 1.0 percent involved an increase in work effort from complete retirement; while 3.2 percent answered not relevant on the previous wave,

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question not relevant. A number of them will be indistinguishable from the retired population.

[9]Note that 2.2 percent went from question not relevant to complete retirement, and 3.3 percent went from completely retired to question not relevant.

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and 3.3 percent were previously not available.

Among those ending in partial retirement, 43.7 % of the transitions were from nonretirement. Over a third (36.1 percent) were from partial retirement. An additional 12.8 percent came from complete retirement. Of the remaining transitions, 4.5 percent previously reported the question was not relevant, and for 2.8 percent of those ending in partial retirement, in the previous wave they were not available.

Among those who were completely retired in the subsequent wave, more than half (53.1%) were fully retired in the initial state. About a fourth (25.3%) came directly from nonretirement, and 10 percent came via partial retirement. About 8.8 percent of those reporting they were retired indicated the question was not relevant in the previous wave, and in 2.8 percent of transitions, the respondent was not available in the previous wave.

Among those ending in not relevant, 40.2 percent gave the same answer in the previous wave, while 22.8 percent of those answering not relevant previously reported they were not retired, and 26.1 percent previously reported they were completely retired. Lastly, among those ending in not available, 52.5 percent were not available in the earlier wave. The majority of the rest of those not available in subsequent waves, 29 percent, previously reported they were not retired in the initial wave.

Table 6 breaks down the columns in Table 4A according to the state where the individual originated, reporting the conditional probability of transiting from the state reported in the column head to the state reported in the row head. Thus among those beginning as not retired, 69.7 percent ended

in nonretirement, 7.4 percent went to partial retirement, 8.8 percent went to full retirement, 4.1

percent answered that the question was not relevant on the next wave, 9.9 percent were not available

for the next wave.

Among those initially indicating they were partially retired, 41.6 percent continued in that state,

23.6 percent transited to complete retirement. There were reversals to full time work among 17.8

percent of the transitions observed from partial retirement. 8.1 percent of the respondents who

reported they were partially retired in one wave indicated that the question on retirement status was

not relevant in the next wave, and 8.9 percent were not available to the survey for the next wave.

Among those beginning as completely retired, 63.1 percent remained in that state in the next

wave, 2.5 percent returned to nonretirement status, and 7.4 percent reported themselves as partially

retired in the subsequent wave. 15.9 percent of those reporting themselves as completely retired in

the initial wave said the question was not relevant in the next wave, and 11 percent were not available

for the next wave.

Table 7 shows the complete set of flows among the four waves of the survey. There are five

panels to the table. All of the combinations in the first panel involve those who were not retired in

wave 1 (F). The second panel pertains to those who were partially retired in wave 1 (P), the third

panel to those who were completely retired in wave 1 (R), the fourth panel to those who answered

the question was not relevant in wave 1 (X), and the fifth panel includes those who were not available

in wave 1 (.) . The column heads indicate the status reported by the respondent in wave 2. In the first

column, the two letters comprising the row heads indicate the respondent's retirement status in waves

3 and 4 respectively. For example, the first entry in the first panel of Table 7, 24.66, indicates that 24.66 percent of the combinations of retirement statuses across the four waves involved being not retired in each of the four waves, that is FFFF was the status across the four waves. The second entry in the first row of the first panel indicates that 0.43 percent of the retirement outcomes involved FPFF, not retired in wave 1, partially retired in wave 2, and not retired in waves 3 and 4. The last entry in column 1, FF.. indicates that 3.36 percent of respondents worked full time in the first two waves and then were not available (.) for the last two waves.

From the data in Table 7, adding the fraction of the sample partially retired in wave 1 to the fraction that is partially retired in waves 2, 3 and 4 in the various sequences, we find that 22 percent of the sample has reported sometime in the first four waves they were partially retired. This is below the number found for the Retirement History Study, where roughly a third were found to have ever partially retired. But the HRS sample is much younger than the RHS sample, and many more will eventually transit through the state of partial retirement.

Sixty eight percent of the sample work full time in wave 1. By wave 4, 31 percent of the sample is in full time work, but only 25 percent of the sample remained in full time work throughout all four waves.

Altogether, 14 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. Among the 68 percent of the sample who worked full time in the first wave of the HRS, 5 percent of the sample experience a reversal of retirement status by partially retiring or retiring and then returning to full time work. Among the 6

percent of the sample who indicated they were partially retired in wave 1, 2 percent of the sample

experienced a reversal in the course of the survey and are shown to be not retired at all sometime

after wave 1. Among the 12 percent of the sample who were completely retired in wave 1, 2 percent

of the sample indicated in either waves 2, 3, or 4 that they were partially retired or not retired. In

addition, among the 9 percent of the sample who answered not relevant in wave 1, or the 5 percent of

the sample who had a missing observation in wave1, 1 percent experienced a reversal by wave 4.

V. Retirement By Age

Table 8 begins the exploration of retirement status by age. The sample includes all age

eligibles as in Tables 2 to 7. Panel A pertains to retirement outcomes by age for males, Panel B for

females.

Starting around age 53 the proportion of males not retired begins to decline at roughly three or

four percentage points per year until after age 61. Between 61 and 62 the decline is about 20

percentage points, and from 62 to 63 the proportion not retired declines about two percentage points.

There is a six percentage point decline from age 63 to 64, and an eleven percentage point decline

from age 64 to 65. Only eighteen percent of 65 year old males report themselves as not retired.

Among men who report themselves as partially retired, partial retirement rises with age, where

it exceeds a fifth of the population by age 65.

The proportion fully retired, or who answer the question is not relevant, account for those who

are not working full time or partially retired. The sum of the share of men who say that the question is

not relevant or who report they are fully retired rises until, between age 61 and 62 it jumps sharply

from 30 percentage points to 43 percentage points. There is a seven 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 for women in the percent 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, rising to a peak of 15 percentage points at age 64. The

proportion of the sample of women answering that the retirement question is not relevant is three to

four times as high for women than men. The change in the question, allowing the non relevant

response if the respondent has not worked in the past year in waves 2 through 4, accounts for the

increase in the number choosing not relevant at older ages. About 31 percent of the sample of

women is working at age 65, 17 percentage points as not retired, and 14 percentage points as

partially retired.

Consider some of the major differences in retirement outcomes reported by women and men.

At any age, men are roughly 10 percentage points more likely to be not retired than women, with the

gap narrowing after age 61. Men are 2 to 5 percentage points more likely to be partially retired than

women.

Tables 9 focuses on retirement outcomes reported by respondents by age and wave.

Conditioning the sample on those who did report retirement status, there are no patterns that stand out

in the proportions who call themselves not retired or partially retired that suggest major differences

between the waves of the survey. 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 were completely retired. This likely reflects the effect of the change in the qualification for the not relevant category in the self reported retirement status question from not having worked for ten years in wave 1 to not having worked for a year in waves 2 through 4. The effect is modest, however.

VI. 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. This group, called the Warbabies, was born from 1942 to 1947. Thus at the time of the survey, the Warbabies were 51 to 56 years old. That is a little young to discern trends in retirement. There are clues we can examine about what to expect from this new cohort, but before we do that, it is useful to put the retirement trends in longer run perspective. Accordingly, before comparing differences between cohorts within the HRS, we compare findings from the original HRS cohort with findings from the Retirement History Study, a ten year panel study of 58 to 63 year olds in 1969.

A. Comparison Between the HRS and RHS

Table 10 compares retirement outcomes for males between the Health and Retirement Study and the Retirement History Study.[10] The results are confined to males since the RHS did not include a representative sample of women.

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[10] 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 contains comparisons between the RHS and HRS. The first draft of this paper, containing the comparisons reported here, was completed before we became aware of her work.

The major trends to early retirement are apparent in the data. At age 60 more than three fourths of the RHS were still at work full time, while fewer than two thirds of the males in the HRS are at work. At age 62, 60 percent of the RHS sample was at work three decades ago, while little more than a third of the HRS sample report they are not yet retired. Only at age 65 do the two samples approach each other.

Not all those who have left full time work have exited the labor force. At all ages, the proportion partially retired in the HRS sample lies well above the fraction found to be partially retired in the earlier RHS study.

Despite the larger number who are partially retired in the HRS, only through age 64 does the number retired in the HRS (the sum of the number retired plus those reporting not relevant in the HRS) exceed the comparable retirement rate in the old Retirement History Study.

The trend to earlier retirement is readily apparent in Table 11, which reports the proportion of the sample retiring by age for each of the two surveys. There was a very large spike in retirement in the RHS at age 65 with one fifth of the sample leaving full-time work. In the HRS, the comparable spike at 65 is half as large, but one fifth of the HRS sample leaves full-time work at age 62. Thirteen percent enter complete retirement between ages 61 and 62 in the HRS. In the old RHS, only 9 percent entered complete retirement at age 62.

There is a view in the retirement literature that lack of employer provided retiree health insurance and availability of Medicare eligibility at age 65 are major factors shaping retirement behavior. Nevertheless, the spike in the number entering the state of complete retirement at age 65

has all but disappeared, and the proportion leaving full time work at age 65 has more than halved. This raises questions about the importance of Medicare eligibility and absence of employer provided retiree health insurance in promoting a spike at age 65 in retirement rates.

B. Comparing 51 to 56 Year Olds in the HRS and in the Warbabies

Although the Warbabies 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 12 compares 51 to 56 year olds in the two cohorts on a number of variables that will certainly influence retirement outcomes. There are a number of similarities between the cohorts. One major difference, seen in row 2, is that the share of women working full time between the ages of 51 and 56 is significantly higher in the Warbabies. Another major difference, seen in rows 5 to 8, is the sharp decline in coverage by defined benefit pension plans. This decline is obvious for both men and women. The influence of a third difference will not be apparent until the Warbaby cohort reaches its mid-sixties. As seen in the bottom row of Table 12, social security normal retirement age for the Warbabies rises for all those born after 1942 to age 66. Both the changes in pensions and in social security may lead to some delay in retirement for the Warbaby cohort.

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VIII. Conclusions

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This study has examined retirement outcomes in the Health and Retirement Study. We measured how retirement outcomes vary with the definition of retirement adopted. We then examined retirement outcomes among groups, and described the dynamic structure of the complex retirement variable. Lastly, we considered changes over time, and how retirement flows found in the HRS

differed from those in the earlier Retirement History Study.

Among our major findings are the following:

Self Reported Retirement Status: Over the four waves of the HRS, the share reporting they are not retired (F) falls from 72 percent to 42 percent of age eligible respondents, while the share reporting they are partially retired each roughly doubles, from 6 percent to 13 percent.

Retirement Based on Hours Per Year of Work: The objective hours measures of retirement suggest there are fewer individuals who are not retired, especially in wave 1, than are suggested by the self reported retirement measures. Using a definition based on working 1200 hours per year, 60 percent are classified as not retired in wave 1. The proportions reporting they are partially retired using the hours per year definition, 8.1 percent, is only 1.8 percent higher than the percentage partially retired obtained from the self reported definition. By wave 4, the self reported and hours per year based measures are indicating roughly the same population shares as not retired and as partially retired. Similar results are obtained measuring retirement status by hours per year and hours per week of work.

Defining Retirement As Having Left A Long Term Job: Using a measure based on whether one is still in a long term job, the fraction not retired is about the same in wave 1 as it is when the hours measures are used. However, the share of the relevant population that is partially retired is higher using the long term job definition, because roughly a fifth of the population, while still working by wave 1 of the HRS, is no longer in their long term job they held until age 45. When considering a definition of retirement based on long term job, it is important to remember that over 40 percent of the sample is

lost when the population is confined to those who ever held a job for more than 10 years and held that job at age 45 or later, and over two thirds of the sample is lost when long tenure is defined as having held a job for more than 20 years.

Earnings Based Measures Of Retirement: When retirement status is measured by whether current earnings are less then 60 percent of the maximum earnings observed for the respondent, in wave 1 the earnings based measure indicates about the same proportion are not retired as does the hours based measure. However, the retirement flow from full time work is higher when using earnings based measures of retirement than when the hours based measures are used.

Differences In Retirement By Gender, Race And Ethnicity: We also found significant differences in retirement rates when we examined retirement by gender, race and ethnicity, although these differences vary with the definition of retirement. Whites are more likely to be not retired than Blacks or Hispanics. Most noticeable are some major differences in retirement outcomes reported by women and men. Using the self reported measure of retirement status, at any age, men are 3 to 12 percentage points more likely to be not retired than women, with the gap disappearing only at age 65 when less than a fifth of men or women are working full time. Men are 1 to 6 percentage points more likely to be working while partially retired than women through age 65, with the difference increasing with age and becoming very large after 65. Women are about 10 to 20 percentage points more likely than men to report that the retirement question is not relevant.

Dynamic Structure Of The Complex Retirement Measure: Our analysis of retirement dynamics was based on self reported retirement status. Among those transiting between the states of not

retired, partially retired, completely retired and not relevant between the first four waves of the HRS, seventy one percent of the transitions were continuations, where the respondent reported not retired, partially retired, completely retired, or not relevant in two adjoining periods. Of the remaining twenty nine percent, about 17.4 percent of the transitions were in the direction of lowering work effort, moving from not retired toward retired, while a 6.1 percent of transitions were in the direction of increasing work effort, with the other 5.5 percent involving transitions between completely retired and not relevant.

Starting around age 53 the proportion of males not retired begins to decline at roughly three or four percentage points per year until after age 61. Between ages 61 and 62 the decline is about 20 percentage points, and from 62 to 63 the proportion not retired declines over two percentage points. There is a six percentage point decline from age 63 to 64, and an eleven percentage point decline from age 64 to 65. Only eighteen percentage points of males age 65 report themselves as not retired.

Among men who report themselves as partially retired, partial retirement increases with age, where it exceeds a fifth of the population after age 65.

The proportion of men who say they are fully retired, or that the retirement question is not relevant, rises with age, jumping 13 percentage points between ages 61 and 62. Between 64 and 65 there is a 7 percentage point jump.

The decline for women in the percent not retired is evident from age 54. There is a 14 percentage point drop at age 61. At age 65 only 17 percent report they are not retired. Partial retirement rises with age to about 15 percentage points. The proportion of the sample answering that

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the retirement question is not relevant is three to four times as high for women than men and rises

through the early 60s. By age 65, about 31 percent of the sample of women is working, 16

percentage points as not retired, and 14 percentage points as partially retired.

Retirement Outcome Changes Over Time: Lastly, we compared flows from full-time work between

the Health and Retirement Study and the Retirement History Study, which reported retirement

outcomes for the cohort born from 1906 to 1911. The major trends to early retirement are readily

apparent. At age 60, more than three fourths of the RHS was still working full time, compared to 61

percent of males in the HRS. The peak in the flow from full-time work in the RHS is at age 65, while

in the HRS, about 11 percent are leaving full time work at age 65. On the other hand, the flow from

full-time work at age 62 is more important for the HRS cohort.

A little more than a fifth of the HRS sample reports they were partially retired at least once in

the first four waves. This is below the number found for the Retirement History Study, where roughly

a third were found to have ever partially retired. But the HRS sample is much younger than the RHS

sample, and many more will eventually transit through the state of partial retirement. Indeed, at all

ages many more respondents report they are partially retired to the HRS than reported partial

retirement to the RHS.

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 retirement 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 challenge.

Table 1: Alternative Definitions of Retirement

Retirement Definition	Retirement Status		
	Not Retired (F)	Partially Retired (P)	Completely Retired (R)
Self Reported	self explanatory	self explanatory	self explanatory
By Usual Hours/Weeks	25+ hours	1-24 hours	not employed
By Usual Hours/Year	1200+ hours	1-1199 hours	not employed
By Leaving 10+ Year Job	still in 10+ year job held after age 45	working in another job	not employed
By Leaving 20+ Year Job	still in 20+ year job held after age 45	working in another job	not employed
By Hourly Wage	usual wage 60%+ of maximum	usual wage <60% of maximum	not employed
By Weekly Earnings	usual earnings 60%+ of maximum	usual earnings <60% of maximum	not employed
By Social Security Receipt	not received social security	not relevant	received social security

Table 2: Retirement Outcomes By Wave Under Alternative Definitions of Retirement

Retirement Measure	Retirement Status												Sample Size With Complete Data			
	Not Retired (F)				Partially Retired (P)				Completely Retired (R)							
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4
Self Reported	71.5	63.6	51.6	42.3	6.3	10.0	11.9	12.7	12.3	19.1	24.7	27.3	9297	8265	7828	7307
By Usual Hours/Weeks	61.9	55.8	47.7	41.0	7.0	7.6	9.3	9.9	31.1	36.6	43.0	49.0	9297	8233	7806	7266
By Usual Hours/Year	60.1	55.0	46.8	40.0	8.1	8.2	9.9	10.6	31.8	36.8	43.3	49.4	9297	8188	7761	7221
By Leaving 10+ Year Job	59.9	49.4	37.7	28.4	21.7	23.2	25.8	26.0	18.3	27.4	36.5	45.6	5204	4483	4014	3612
By Leaving 20+ Year Job	63.8	51.4	38.4	27.6	17.9	19.6	23.2	23.6	18.2	28.9	38.4	48.8	2720	2321	2048	1825
By Hourly Wage	57.7	48.6	42.0	35.9	9.9	11.6	11.8	11.8	32.3	39.8	46.1	52.3	9172	7579	7268	6795
By Weekly Earnings	56.1	46.3	39.0	33.1	11.5	13.9	14.6	14.5	32.3	39.8	46.1	52.3	9172	7579	7268	6795
By Social Security Receipt	94.9	86.4	73.3	60.0	n.a.	.n.a.	n.a.	n.a.	5.1	13.6	26.7	40.0	9226	8185	7788	7265

Source: Authors' calculations. Definitions of retirement outcomes are presented in Table 1. Sample exclusions for each table and wave are reported in Appendix 1. All results are weighted using the weights from wave1. Percentages not retired, partially retired and fully retired do not sum to 1.0 due to inclusion of those answering not relevant in the population base.

Table 3: Percent Not Retired By Gender, Race and Ethnicity

Percent Not Retired	Self Reported				Usual Hours Per Year				Weekly Earnings				Social Security Receipt			
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4
All	71.5	63.6	51.6	42.3	60.1	55.0	46.8	40.0	56.1	46.3	39.2	33.1	94.9	86.4	73.3	60.0
Males	77.1	67.0	56.2	46.8	72.2	66.3	57.5	49.4	62.4	53.0	45.4	38.3	94.8	86.9	74.8	62.8
Females	66.6	60.8	47.7	38.7	49.6	45.7	38.1	32.5	50.7	40.8	34.2	29.1	95.0	85.9	72.0	57.8
All Whites	72.4	64.3	51.7	42.1	61.6	56.4	47.7	40.3	57.0	47.3	39.4	33.2	95.4	86.7	73.3	59.8
White Males	78.0	67.8	56.7	46.7	74.3	68.1	58.5	49.7	63.7	54.2	45.7	38.5	95.2	87.1	75.1	62.8
White Females	67.4	61.2	47.4	38.4	50.4	46.5	38.4	32.5	51.1	41.6	34.3	29.0	95.5	86.4	71.8	57.3
All Blacks	66.0	58.2	48.8	41.3	53.2	46.9	42.5	36.7	52.7	40.7	37.1	30.8	91.8	82.7	71.7	59.7
Black Males	67.6	57.7	50.2	42.1	58.7	51.3	50.1	43.5	51.7	42.0	39.3	33.2	91.6	83.6	71.8	59.9
Black Females	64.9	58.6	47.9	40.8	49.2	44.0	37.5	32.6	53.4	39.8	35.6	29.3	91.9	82.1	71.7	59.5
All Hispanics	67.9	59.9	49.3	43.4	50.2	46.0	38.3	37.6	48.2	39.9	36.6	32.6	93.3	86.8	76.1	63.2
Hispanic Males	78.6	67.6	53.7	52.4	65.7	61.2	51.4	51.0	59.3	52.9	48.9	40.9	92.8	88.0	75.3	65.3
Hispanic Females	58.8	53.8	45.8	36.5	37.0	34.2	28.3	27.2	38.6	30.2	27.6	26.1	93.7	85.9	76.8	61.6

See Table 2 for sample sizes and definitions.

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Table 4A: Retirement States Between Adjoining Waves, Self Reported Data, Including Not Relevant and Not Available Responses

Final State	Initial State					Row Total
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant	Not Available	
Not Retired	0.383	0.014	0.004	0.014	0.014	0.429
Partially Retired	0.041	0.034	0.012	0.004	0.003	0.094
Completely Retired	0.048	0.019	0.101	0.017	0.005	0.190
Ques. Not Relevant	0.022	0.007	0.026	0.039	0.004	0.098
Not Available	0.055	0.007	0.018	0.010	0.100	0.190
Column Total	0.549	0.081	0.161	0.084	0.126	1.001

*Each cell indicates the proportion of the entire sample falling in the indicated category. The not available category includes refusals, don't knows, proxies, and people who were not interviewed on that wave. See Appendix 1 for sample exclusions.

Table 4B: Retirement States Between Adjoining Waves, Self Reported Data, Including Not Relevant Responses

Final State	Initial State				Row Total
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant	
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
Ques. Not Relevant	0.028	0.009	0.033	0.050	0.120
Column Total	0.629	0.09	0.182	0.095	1.000

Table 5: Entry Rates Into Indicated States

Final State	Initial State					
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant	Not Available	Sum
Not Retired	0.892	0.034	0.010	0.032	0.033	1.001
Partially Retired	0.437	0.361	0.128	0.045	0.028	0.999
Completely Retired	0.253	0.100	0.531	0.088	0.028	1
Ques. Not Relevant	0.228	0.067	0.261	0.402	0.042	1
Not Available	0.290	0.038	0.093	0.055	0.525	1.001

*The not available category includes refusals, don't knows, proxies, and people who were not interviewed on that wave. See Appendix 1 for sample exclusions.

Table 6: Exit Rates From Indicated States

Final State	Initial State				
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant	Not Available
Not Retired	0.697	0.178	0.025	0.163	0.111
Partially Retired	0.074	0.416	0.074	0.050	0.020
Completely - Retired	0.088	0.236	0.631	0.199	0.043
Ques. Not Relevant	0.041	0.081	0.159	0.465	0.032
Not Available	0.099	0.089	0.110	0.123	0.793
Sum	0.999	1	0.999	1	0.999

*The not available category includes refusals, don't knows, proxies, and people who were not interviewed on that wave. See Appendix 1 for sample exclusions.

Table 7: Self Reported Retirement Status By Wave
(Not Retired in Wave 1)

Status in Waves 3 and 4	Status in Wave 2				
	Not Retired (F)	Partially Retired (P)	Completely Retired (R)	Question Not Relevant (X)	Not Available (.)
FF	24.66	0.43	0.05	0.34	1.11
FP	2.56	0.22	0.07	0.06	0.06
FR	3.79	0.12	0.02	0.05	0.05
FX	0.96	0.09	0.02	0.06	0.02
F.	3.17	0.01	0.00	0.09	0.41
PF	0.68	0.34	0.02	0.02	0.03
PP	1.74	0.73	0.15	0.02	0.08
PR	0.96	0.34	0.12	0.02	0.01
PX	0.23	0.04	0.05	0.04	
P.	0.29	0.13	0.03	0.01	0.05
RF	0.15	0.05	0.03	0.01	
RP	0.45	0.16	0.22		0.04
RR	3.01	0.56	2.08	0.16	0.18
RX	0.67	0.18	0.66	0.13	0.07
R.	0.38	0.12	0.38	0.02	0.07
XF	0.38	0.01	0.01	0.04	0.02
XP	0.09	0.04	0.02	0.02	
XR	0.20	0.07	0.14	0.10	0.05
XX	0.85	0.12	0.17	0.47	0.07
X.	0.15	0.00	0.09	0.06	0.08
.F	0.83	0.01	0.01		0.35
.P	0.10	0.02	0.01	0.01	0.08
.R	0.14	0.05	0.04	0.01	0.18
.X	0.19	0.01	0.03	0.02	0.08
..	3.36	0.30	0.42	0.18	4.17
Sum of Column	49.99	4.15	4.84	1.94	7.26

*The not available category includes refusals, don't knows, proxies, and those not interviewed on that wave. See Appendix 1 for sample exclusions.

Table 7: Continued
(Partially Retired in Wave 1)

Status in Waves 3 and 4	Status in Wave 2				
	Not Retired	Partially Retired	Completely Retired	Question Not Relevant	Not Available
FF	0.26	0.20	0.03	0.01	
FP	0.05	0.19	0.01		0.01
FR	0.07	0.03	0.03	0.02	0.01
FX	0.04	0.05	0.03	0.01	0.00
F.	0.08	0.05			0.01
PF	0.08	0.13	0.01	0.01	
PP	0.19	0.75	0.07	0.01	0.01
PR	0.05	0.25	0.07	0.01	0.01
PX	0.05	0.05	0.04		0.01
P.	0.03	0.06	0.01		0.03
RF		0.01	0.00	0.03	
RP	0.01	0.13	0.04	0.02	
RR	0.12	0.27	0.49	0.05	0.04
RX	0.02	0.10	0.22	0.02	
R.	0.02	0.04	0.05		0.02
XF	0.00		0.01	0.01	
XP	0.01	0.01	0.02	0.01	
XR	0.00	0.01	0.05	0.01	
XX		0.05	0.07	0.03	
X.	0.01	0.01	0.03		
.F	0.01				
.P	0.01	0.03			
.R	0.01	0.01	0.01		0.03
.X		0.02			0.02
..	0.09	0.12	0.12	0.02	0.40
Sum of Column	1.21	2.58	1.41	0.27	0.60

*The not available category includes refusals, don't knows, proxies, and those not interviewed on that wave. See Appendix 1 for sample exclusions.

Status in Waves 3 and 4	Status in Wave 2				
	Not Retired	Partially Retired	Completely Retired	Question Not Relevant	Not Available
FF	0.04	0.03			
FP	0.02	0.05			0.01
FR	0.04	0.01	0.04		0.00
FX	0.01		0.05	0.02	0.01
F.	0.02	0.01	0.02		
PF	0.01	0.00	0.08		
PP	0.01	0.15	0.13	0.01	
PR		0.06	0.15		
PX	0.02	0.03	0.10	0.01	
P.	0.01	0.04	0.01	0.01	
RF	0.01		0.04		0.01
RP		0.09	0.15	0.01	0.01
RR	0.03	0.20	3.46	0.12	0.09
RX	0.02	0.09	1.31	0.08	0.02
R.		0.06	0.61	0.04	0.01
XF			0.02	0.01	
XP	0.01	0.01		0.01	
XR	0.01	0.04	0.47	0.06	0.02
XX	0.09	0.02	0.28	0.24	0.05
X.		0.00	0.11	0.08	0.05
.F					0.01
.P					0.01
.R		0.01	0.05		0.07
.X		0.01	0.03	0.00	0.02
..	0.05	0.13	0.86	0.16	1.05
Sum of Column	0.40	1.04	7.97	0.86	1.44

*The not available category includes refusals, don't knows, proxies, and those not interviewed on that wave. See Appendix 1 for sample exclusions.

Status in Waves 3 and 4	Status in Wave 2				
	Not Retired	Partially Retired	Completely Retired	Question Not Relevant	Not Available
FF	0.28	0.07	0.04	0.05	0.05
FP	0.03	0.01		0.02	
FR	0.03		0.02	0.02	
FX	0.30	0.02	0.01	0.15	0.01
F.	0.05		0.01	0.02	
PF	0.04	0.02	0.01	0.00	
PP	0.03	0.04		0.01	
PR	0.04		0.02	0.02	0.01
PX	0.09	0.09	0.04	0.05	0.01
P.			0.02		
RF			0.02	0.02	
RP			0.03	0.01	0.01
RR	0.08	0.02	0.34	0.22	0.03
RX	0.19	0.08	0.37	0.21	
R.	0.01		0.10	0.07	
XF	0.11	0.01	0.02	0.12	0.01
XP	0.01	0.01		0.05	
XR	0.13	0.06	0.17	0.18	0.01
XX	0.71	0.19	0.43	1.39	0.10
X.	0.09	0.04	0.16	0.25	0.06
.F		0.01	0.02	0.01	
.P		0.01			0.01
.R			0.03	0.01	
.X	0.00		0.02	0.05	0.05
..	0.14	0.04	0.11	0.23	0.73
Sum of Column	2.36	0.72	1.99	3.16	1.09

*The not available category includes refusals, don't knows, proxies, and those not interviewed on that wave. See Appendix 1 for sample exclusions.

Status in Waves 3 and 4	Status in Wave 2				
	Not Retired	Partially Retired	Completely Retired	Question Not Relevant	Not Available
FF	0.20	0.01			0.23
FP	0.01				0.02
FR	0.01				0.04
FX	0.01				0.01
F.	0.02				0.16
PF	0.01				
PP	0.03	0.01	0.01		0.06
PR					0.02
PX	0.03				
P.		0.01			0.05
RF	0.01				
RP	0.01				
RR	0.02	0.02	0.03		0.06
RX			0.04	0.01	0.00
R.			0.02		0.07
XF					0.02
XP					
XR					0.01
XX	0.03	0.01	0.01		0.02
X.					0.02
.F	0.05				0.12
.P	0.02				0.02
.R					0.11
.X					0.05
..	0.10				2.82
Sum of Column	0.56	0.06	0.11	0.01	3.91

*The not available category includes refusals, don't knows, proxies, and not interviewed on that wave. See Appendix 1 for sample exclusions.

Table 8: Retirement Outcomes By Age
Panel A: Proportion of Males At Indicated Age Falling In Each Cell

Age	Self Reported Retirement Status			
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant
50	0.851	0.033	0.086	0.030
51	0.865	0.053	0.053	0.028
52	0.855	0.064	0.051	0.030
53	0.848	0.055	0.062	0.035
54	0.817	0.071	0.085	0.028
55	0.785	0.083	0.095	0.037
56	0.744	0.098	0.122	0.036
57	0.726	0.098	0.138	0.038
58	0.686	0.104	0.167	0.043
59	0.657	0.120	0.182	0.041
60	0.610	0.120	0.232	0.038
61	0.571	0.129	0.250	0.049
62	0.374	0.192	0.382	0.052
63	0.353	0.198	0.392	0.057
64	0.295	0.185	0.464	0.056
65	0.184	0.225	0.523	0.068
66	0.184	0.223	0.507	0.086
67	0.126	0.327	0.384	0.162

See Appendix 1 for sample exclusions.

Panel B: Proportion of Females At Indicated Age In Each Cell

Age	Self Reported Retirement Status			
	Not Retired	Partially Retired	Completely Retired	Ques. Not Relevant
50	0.840	0.029	0.037	0.093
51	0.772	0.037	0.062	0.129
52	0.759	0.049	0.051	0.141
53	0.763	0.035	0.082	0.120
54	0.717	0.054	0.091	0.137
55	0.698	0.054	0.102	0.146
56	0.641	0.065	0.119	0.175
57	0.651	0.067	0.117	0.166
58	0.582	0.084	0.156	0.177
59	0.581	0.078	0.173	0.168
60	0.496	0.094	0.223	0.187
61	0.485	0.095	0.248	0.172
62	0.341	0.129	0.355	0.175
63	0.279	0.134	0.383	0.204
64	0.217	0.149	0.395	0.239
65	0.166	0.145	0.496	0.193
66	0.111	0.141	0.464	0.284
67	0.115	0.063	0.420	0.403

Notes: See Panel A.

Table 9: Retirement Status By Age In Selected Years, Including Question Not Relevant and Not Available Responses
Panel A: Proportion of Males At Each Age In Each Cell

Age	Not Retired				Partially Retired				Completely Retired				Ques. Not Relevant				Not Available			
	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
50	0.801				0.031				0.081				0.028				0.059			
51	0.811				0.050				0.050				0.026				0.062			
52	0.799	0.764			0.059	0.059			0.047	0.049			0.031	0.017			0.064	0.111		
53	0.783	0.740			0.043	0.056			0.044	0.069			0.033	0.031			0.098	0.104		
54	0.765	0.716	0.757		0.046	0.081	0.069		0.072	0.092	0.048		0.031	0.022	0.014		0.086	0.089	0.111	
55	0.725	0.679	0.708		0.054	0.087	0.083		0.106	0.062	0.087		0.018	0.031	0.051		0.097	0.141	0.071	
56	0.735	0.661	0.645	0.664	0.078	0.081	0.116	0.079	0.104	0.135	0.115	0.063	0.025	0.016	0.042	0.066	0.058	0.107	0.082	0.128
57	0.698	0.614	0.651	0.627	0.074	0.079	0.104	0.093	0.128	0.145	0.103	0.119	0.019	0.022	0.032	0.065	0.081	0.140	0.109	0.096
58	0.622	0.635	0.605	0.602	0.089	0.089	0.105	0.091	0.165	0.158	0.155	0.118	0.026	0.016	0.056	0.063	0.097	0.102	0.079	0.126
59	0.619	0.590	0.602	0.541	0.113	0.102	0.073	0.139	0.180	0.172	0.178	0.122	0.018	0.020	0.042	0.067	0.070	0.116	0.106	0.131
60	0.634	0.493	0.525	0.531	0.093	0.105	0.130	0.106	0.199	0.241	0.211	0.183	0.012	0.021	0.050	0.059	0.062	0.141	0.084	0.121
61	0.547	0.481	0.526	0.514	0.111	0.129	0.121	0.103	0.267	0.237	0.212	0.195	0.025	0.043	0.046	0.062	0.050	0.109	0.096	0.126
62		0.373	0.318	0.298		0.169	0.180	0.162		0.353	0.324	0.338		0.016	0.054	0.074		0.089	0.124	0.128
63		0.344	0.290	0.324		0.158	0.215	0.150		0.385	0.385	0.295		0.014	0.038	0.087		0.100	0.071	0.145
64			0.267	0.257			0.156	0.173			0.455	0.367			0.024	0.077			0.097	0.126
65			0.149	0.174			0.245	0.175			0.474	0.464			0.019	0.086			0.113	0.101
66				0.168				0.203				0.463				0.078				0.088
67				0.113				0.294				0.345				0.146				0.102

See Appendix 1 for sample exclusions.

Table 9, Panel B: Proportion of Females In Each Cell

Age	Not Retired				Partially Retired				Completely Retired				Ques. Not Relevant				Not Available			
	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
50	0.840				0.029				0.037				0.093				0			
51	0.760				0.036				0.061				0.127				0.015			
52	0.728	0.811			0.048	0.049			0.058	0.031			0.153	0.107			0.013	0.003		
53	0.744	0.749			0.023	0.044			0.077	0.085			0.130	0.106			0.026	0.017		
54	0.700	0.695	0.751		0.046	0.059	0.059		0.093	0.099	0.057		0.141	0.129	0.133		0.020	0.018	0	
55	0.693	0.691	0.662		0.043	0.073	0.045		0.088	0.091	0.121		0.151	0.115	0.160		0.025	0.031	0.012	
56	0.641	0.656	0.566	0.676	0.043	0.086	0.068	0.054	0.123	0.132	0.118	0.072	0.175	0.110	0.223	0.187	0.018	0.016	0.025	0.010
57	0.648	0.671	0.643	0.588	0.039	0.091	0.079	0.055	0.111	0.121	0.108	0.116	0.187	0.087	0.145	0.223	0.016	0.030	0.024	0.017
58	0.591	0.582	0.540	0.545	0.068	0.107	0.090	0.064	0.131	0.168	0.166	0.145	0.181	0.120	0.174	0.216	0.029	0.023	0.029	0.031
59	0.568	0.580	0.577	0.547	0.085	0.074	0.066	0.080	0.161	0.201	0.158	0.154	0.175	0.114	0.174	0.197	0.012	0.031	0.026	0.022
60	0.489	0.491	0.475	0.473	0.069	0.121	0.100	0.075	0.228	0.241	0.212	0.184	0.191	0.120	0.190	0.236	0.022	0.027	0.023	0.032
61	0.501	0.479	0.467	0.446	0.077	0.114	0.084	0.091	0.245	0.269	0.251	0.199	0.156	0.100	0.181	0.230	0.021	0.037	0.017	0.035
62		0.355	0.305	0.327		0.127	0.135	0.112		0.395	0.364	0.265		0.091	0.171	0.254		0.032	0.025	0.042
63		0.333	0.261	0.244		0.114	0.135	0.139		0.409	0.402	0.326		0.099	0.187	0.274		0.046	0.015	0.017
64			0.210	0.214			0.167	0.121			0.411	0.358			0.196	0.272			0.016	0.035
65			0.143	0.172			0.112	0.157			0.572	0.421			0.127	0.224			0.046	0.027
66				0.107				0.136				0.448				0.274				0.035
67				0.112				0.062				0.410				0.393				0.023

See Appendix 1 for sample exclusions.

Table 10: Retirement Status of Men In The Retirement History Study and Health and Retirement Study

Age	Self Reported Retirement Status					
	Not Retired		Partially Retired		Completely Retired	
	RHS	HRS	RHS	HRS	RHS	HRS
58	0.85	0.69	0.05	0.10	0.09	0.21
59	0.81	0.66	0.06	0.12	0.12	0.22
60	0.78	0.61	0.06	0.12	0.13	0.27
61	0.71	0.57	0.08	0.13	0.19	0.30
62	0.60	0.37	0.10	0.19	0.28	0.43
63	0.51	0.35	0.12	0.20	0.34	0.45
64	0.40	0.29	0.13	0.18	0.46	0.52
65	0.19	0.18	0.17	0.22	0.62	0.59
66	0.12	0.18	0.17	0.22	0.70	0.59
67	0.11	0.13	0.17	0.33	0.72	0.55

*Outcomes from The Retirement History Study (RHS) are from Gustman and Steinmeier (1984, Table 1). HRS outcomes are from Table 8. The RHS allowed the respondent only three choices when reporting retirement status: not retired, partially retired and completely retired. The HRS allows four choices. Therefore, those included as completely retired in the HRS are those who answered either they are completely retired, or that the question is not relevant. Those not available have been excluded from the base so that the percentages of those reporting they are not retired, partially retired and fully retired sum to 1.0.

Table 11: Change In Retirement Status For Men In The Retirement History Study and Health and Retirement Study

Age	Self Reported Retirement Status					
	Not Retired		Partially Retired		Completely Retired	
	RHS	HRS	RHS	HRS	RHS	HRS
58 to 59	-0.04	-0.03	0.01	0.02	0.03	0.01
59 to 60	-0.03	-0.05	0.00	0.00	0.01	0.05
60 to 61	-0.07	-0.04	0.02	0.01	0.06	0.03
61 to 62	-0.11	-0.20	0.02	0.06	0.09	0.13
62 to 63	-0.09	-0.02	0.02	0.01	0.06	0.02
63 to 64	-0.11	-0.06	0.01	-0.02	0.12	0.07
64 to 65	-0.21	-0.11	0.05	0.04	0.16	0.07
66 to 66	-0.07	0.00	0.00	0.00	0.08	0.00
66 to 67	-0.01	-0.05	0.00	0.11	0.02	-0.04

*First differences calculated from Table 10.

Table 12: Comparisons Between HRS Wave 1, 51 to 56 Year Olds in 1992, and Warbabies

	HRS 1; 51 to 56 Year Olds Born 1936 to 1941	Warbabies; 51 to 56 Year Olds Born 1942 to 1947
Percent of Men Working 1200 Hours or More	76.5	78.0
Percent of Women Working 1200 Hours or More	53.5	60.8
Percent of Employed Men with Pension	71.3	71.9
Percent of Employed Women with Pension	63.2	62.4
Percent of Pension Covered Men with DB Plan and/or Both	72.0	65.6
Percent of Pension Covered Women with DB Plan and/or Both	66.7	58.0
Percent of Pension Covered Men with DB Plan Only	41.6	28.8
Percent of Pension Covered Women with DB Plan Only	45.4	30.5
Social Security Retirement Age	Age 65 for those born 1936 and 1937, incremented by 2 months for each year of birth to 65 +8 months for those born in 1941.	Age 65 + 10 months for those born in 1942, and Age 66 for those born 1943 to 1947.

References

Anderson, Patricia M., Alan L. Gustman and Thomas L. Steinmeier. 1999. "Trends in Male Labor Force Participation and Retirement: Some Evidence on the Role of Pension and Social Security in the 1970s and 1980s". *Journal of Labor Economics* 17(4), Part 1: 757-783.

Friedberg, Leora. 1999. "The Trend Toward Part-Time Work Among Older Workers". Paper presented at NBER Summer Institute.

Gustman, Alan L., Olivia S. Mitchell and Thomas L. Steinmeier. "Retirement Measures in the Health and Retirement Survey". *Journal of Human Resources*, Vol 30, Supplement (1995), pp. S57-S83.

Gustman, Alan L. and Thomas L. Steinmeier. 1984. "Modeling the Retirement Process for Evaluation and Research". *Monthly Labor Review* (107)7: 26-33.

Ruhm, Christopher J. 1990. "Bridge Jobs and Partial Retirement". *Journal of Labor Economics* 8(4): 482-501.

Appendix 1: Sample Exclusions by Table

	Tables 2 and 3	Tables 4-11	Appendix 2
Age ineligibles and overlaps	Not included in any wave.	Not included in any wave.	Not included in any wave.
Attritors	Not in any wave where the interview is not available. Included in other waves.	Included in sample. Classified as not available in any wave where a survey response is missing.	Excluded from all waves.
Proxies	Excluded from any wave where the interview is obtained from a proxy respondent. Included in other waves.	Included in sample. Classified as not available in any wave where a survey response is missing.	Excluded from all waves.

Appendix 2: Retirement Outcomes By Wave Under Alternative Definitions of Retirement, Excluding Attritors and Proxies From All Waves

Retirement Measure	Retirement Status												Sample Size With Complete Data			
	Not Retired (F)				Partially Retired (P)				Completely Retired (R)							
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4	Wave 1	Wave 2	Wave 3	Wave 4
Self Reported	72.2	64.3	51.6	41.9	6.6	10.3	12.3	12.9	11.4	18.4	24.7	2773.0	6671	6659	6653	6653
By Usual Hours/Weeks	63.0	56.5	47.7	40.8	7.6	8.1	9.7	10.2	29.4	35.4	42.5	49.0	6671	6630	6625	6614
By Usual Hours/Year	61.2	55.7	46.8	39.7	8.6	8.7	10.3	10.9	30.1	35.6	42.8	49.4	6671	6595	6586	6572
By Leaving 10+ Year Job	60.0	49.7	38.1	28.6	22.7	24.2	25.8	26.0	17.2	26.1	36.0	45.4	3754	3645	3556	3489
By Leaving 20+ Year Job	64.0	51.5	38.5	27.9	19.1	20.8	23.4	23.8	16.9	27.6	38.1	48.4	1951	1877	1813	1777
By Hourly Wage	59.0	49.9	42.1	35.0	10.1	11.8	12.4	12.6	30.9	38.3	45.5	52.3	6595	6128	6187	6189
By Weekly Earnings	57.4	47.4	39.0	32.1	11.7	14.2	15.5	15.6	30.9	38.3	45.5	52.3	6595	6128	6187	6189
By Social Security Receipt	95.4	87.3	74.1	60.5	n.a.	.n.a.	n.a.	n.a.	4.6	12.7	25.9	39.5	5986	5966	5981	5981

Source: Authors' calculations. Definitions of retirement outcomes are presented in Table 1. All results are weighted using the weights from wave1. Percentages not retired, partially retired and fully retired do not sum to 1.0 due to inclusion of those answering not relevant in the population base.
See Appendix 1 for sample exclusions. Sample sizes differ between the waves only because of don't knows, refusals, or incomplete data.